

Minnkota

MESSENGER

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Answering
the call

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On the cover: Minnkota's line crew was out in western North Dakota assisting in the restoration efforts for Burke-Divide Electric Cooperative. The unexpected conditions could have chilled the crew's spirit, but the work of the crew never faltered.

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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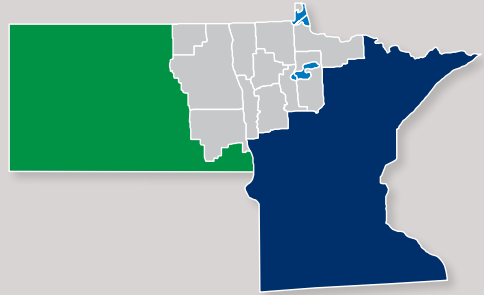
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Minnkota Power Cooperative is a generation and transmission cooperative headquartered in Grand Forks, N.D. It supplies wholesale electricity to 11 member-owner distribution cooperatives, three in eastern North Dakota and eight in northwestern Minnesota. 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 162,500 consumers.



(Left to right) Mac McLennan, Minnkota president and CEO; Wade Boeshans, executive vice president of Summit Carbon Solutions; Les Windjue, Minnkota board chair; Brent Sanford, North Dakota lieutenant governor; Bruce Rastetter, CEO of Summit Agricultural Group; and Charlie Gorecki, CEO of the Energy and Environmental Research Center (EERC).

Mac McLennan (left) shakes Wade Boeshans' hand after the two signed an agreement that will allow Minnkota and Summit Carbon Solutions to co-develop CO₂ storage facilities together.

Project Tundra sees positive momentum

UNIQUE CO₂ STORAGE COLLABORATION, \$100M LOAN ANNOUNCED

The positive momentum for Project Tundra continued forward this spring with the announcement of a new carbon dioxide (CO₂) storage collaboration and \$100 million of funding from the state of North Dakota.

Minnkota and Summit Carbon Solutions, an Iowa-based firm focused on the decarbonization of the agriculture and biofuels industries, reached an agreement on April 28 to co-develop CO₂ storage facilities near Center, N.D.

The announcement was made at a media conference at Minnkota headquarters in Grand Forks where project leaders were joined by legislators, agricultural producers, scientists and other key stakeholders to communicate the benefits of this unique collaboration.

"We are joining two of North Dakota's most prominent industries – agriculture and energy – to substantially lower CO₂ emissions,

while helping preserve American energy security," said Mac McLennan, Minnkota president and CEO. "If our nation is to stay competitive during the energy transition, it will require multiple states and industries working together. Our hope is that this effort can serve as a blueprint for the collaborative thinking that is needed to drive energy innovation forward."

Minnkota and Summit have been working independently on the development of their respective carbon capture and storage projects – Minnkota with Project Tundra, which aims to install innovative CO₂ capture technologies at the Milton R. Young Station in North Dakota, and Summit Carbon Solutions with the capture and permanent storage of CO₂ from dozens of ethanol plants across five states in the Upper Midwest.

"If our nation is to stay competitive during the energy transition, it will require multiple states and industries working together. Our hope is that this effort can serve as a blue-print for the collaborative thinking that is needed to drive energy innovation forward."

– Mac McLennan
Minnkota President and CEO

Now, by working together, Minnkota and Summit will more quickly, efficiently and cost-effectively advance their projects to commercial operations.

"Summit Carbon Solutions is thrilled to team with Minnkota to accelerate our project and the decarbonization of biofuels and agriculture, which will greatly enhance the economic sustainability of those industries for decades to come," said Wade Boeshans, executive vice president of Summit Carbon Solutions. "Working together, Summit Carbon Solutions and Minnkota will permanently and safely sequester tens of millions of tons of carbon dioxide every year, which will improve environmental outcomes while supporting industries critical to our region's future."

Better together

The agreement provides Summit with access to Minnkota's already permitted 100-million-ton capacity CO₂ storage site near the Young Station, the largest of only three such permitted sites in the United States. It also creates the framework to jointly develop additional CO₂ storage resources nearby, which are estimated to have aggregate CO₂ storage exceeding 200 million tons. The collaboration is beneficial to both Minnkota's and Summit's projects, as it reduces risk, accelerates the timeline for financing and construction, and provides increased operational flexibility when CO₂ storage begins. These benefits importantly provide landowners an enhanced opportunity to maximize the value of the rock formations deep below the surface.

As a lifelong farmer and a long-time electric cooperative leader, Minnkota Board Chair Les Windjue sees the agreement as another step forward in partnership between agriculture and energy.

"The history of these two industries is closely intertwined, as electric cooperatives were founded by farmers and grew from their hard work and ingenuity," Windjue said. "If we are to succeed in the future, we'll need to work together just as we have in the past. We'll also need to find new and innovative ways to feed, fuel and power our communities."

Minnkota and Summit have been and will be active in communicating with area landowners and other key stakeholders to ensure all development continues to be transparent and collaborative.

North Dakota Lt. Gov. Brent Sanford concluded the media conference by expressing support for both projects and their importance in getting the state to its goal of net carbon neutrality by 2030.

"We're leading the way in North Dakota by using innovation, not regulation," Sanford said. "This is an exciting day, and if it helps move Project Tundra toward its final goal, it's a really good thing."

Tundra receives important state funding

On May 23, Minnkota received approval of a \$100 million loan to help advance Project Tundra. The loan was authorized by the North Dakota Industrial Commission and will be an important component of the project's capital financing strategy. The funding is made available through the state's new Clean Sustainable Energy Authority (CSEA) and will be furnished by the Bank of North Dakota.

"On behalf of Minnkota, I would like to thank the state of North Dakota for its strong support of Project Tundra and its visionary leadership in developing programs to help us advance transformational energy technologies," McLennan said. "Securing this loan shows the investment community

that we have the close partnerships in place to make this project a reality."

Minnkota plans to turn its focus to financing efforts in the coming months following completion of Project Tundra's final engineering and design work. The \$1.45 billion project will primarily be funded through federal 45Q tax credits, which provide \$50 per ton of CO₂ stored. Due to Minnkota's not-for-profit status, partnerships with tax-equity investors will be necessary to utilize the credits. About 4 million metric tons of CO₂ are planned to be permanently stored each year.

"As we see a growing number of concerns around grid reliability, it is more important than ever to find ways to preserve dependable and resilient power generation assets, like the Young Station," McLennan said. "It's also important for us to make progress toward environmental goals and lower our emissions profile. We believe Project Tundra provides a path forward for Minnkota to meet both of these goals in a way that can be replicated around the state and around the world."

Minnkota anticipates making a decision on whether to move forward with construction of Project Tundra near the end of 2022. If the project does not move forward, the \$100 million loan would be returned to the state, where it could be used for other technology development opportunities.



North Dakota Lt. Gov. Brent Sanford expresses support for the new collaboration between Minnkota and Summit.



Co-op directors, farmers, media members and other key stakeholders gathered at Minnkota headquarters in Grand Forks to learn more about the projects.



Bruce Rastetter discusses how innovation is driving the agricultural industry toward a low-carbon future.

Mac McLennan highlights the value of bringing energy and agriculture together to lower CO₂ emissions.

Sounding the alarm on grid reliability

NORTH DAKOTA, MINNESOTA AT RISK OF POWER OUTAGES THIS SUMMER

America's electric grid has become increasingly unstable – and it could begin impacting Minnkota Power Cooperative's members this summer.

That's why Minnkota is joining many of our nation's grid operators and regulators in sounding the alarm on the vulnerabilities that are affecting power reliability. As the pace of change in the energy industry continues to accelerate, so does the risk of rotating power outages and other extended service interruptions. Minnkota's eastern North Dakota and northwestern Minnesota service area is no longer immune to the large-scale grid challenges that have been experienced in Texas and California in recent years.

Minnkota takes its responsibility to provide reliable, resilient and responsible electricity seriously. The cooperative has more than enough generating capacity to meet the demands of its members through its coal, wind and hydro resources. But Minnkota does not operate on the grid alone. Utilities across the Upper Midwest are connected through Midcontinent Independent System Operator (MISO). Emergency events experienced in other parts of the MISO region can and do have impacts back into the Minnkota system.

One of the most significant industry issues is the retirement of baseload and dispatchable power plants – including coal, nuclear and natural gas – without adequate replacements. Wind and solar make up the majority of the new resources

being added to the grid, but they are limited by the fact that they are only able to operate intermittently – when the wind is blowing or the sun is shining. While Minnkota supports moving toward a cleaner, more sustainable energy future, it is not something that can happen with the flip of the switch. It will take decades of planning and unprecedented technology development to achieve significant carbon reduction.

MISO expresses concerns

Minnkota is not alone in coming to these conclusions. MISO issued a dire warning in April that it does not have enough reliable power plant capacity on its system to meet its projected peak demand this summer. The result is an increasing risk of power outage events.

Minnkota both buys and sells surplus power in the MISO system, which estimates a 1,230-megawatt (MW) shortfall in power plant capacity to meet its reserve margin. For context, one megawatt-hour (MWh) is enough electricity to serve more than 800 homes with an hour's worth of power.

"Due in large part to decarbonization goals set by our members and the states in our region, our resource fleet is increasingly reliant on intermittent and weather-dependent resources," said Wayne Schug, vice president of strategy and business development at MISO. "As this trend continues in the future, MISO needs to evolve the grid, our markets, and our operational capabilities, which is

just as complex as it sounds."

In a recent interview in the Wall Street Journal, MISO CEO John Bear added to this point by saying, "As we move forward, we need to know that when you put a solar panel or a wind turbine up, it's not the same as a thermal resource."

MISO's peak demand for electricity typically occurs in the summer months during the hottest days of the year. The organization is conducting training and exercises to prepare for worst-case scenarios and is also implementing lessons learned and best practices. Likewise, Minnkota's energy marketing team is working to ensure it's ready to respond to volatile market and reliability conditions.

NERC issues grim report

The North American Electric Reliability Corporation (NERC) – the federal regulatory entity responsible for the reliability of the nation's electric grid – is also expressing concerns heading into the summer season. According to NERC, MISO is in the "high risk" category, and has the potential of "facing capacity shortfalls in its north and central areas during both normal and extreme conditions due to generator retirements and increased demand."

NERC's Summer Reliability Assessment notes that reliability challenges are being compounded by evolving demands on the power grid, which has grown increasingly complex as renewable energy assets are added.

"There's clear, objective, inclusive data indicating that the pace of our grid transformation is a bit out of sync with the underlying realities and the physics of the system," said John Moura, NERC's director of reliability assessment.

Along with the changing power supply mix, NERC also identified extreme weather conditions, high seasonal demand for electricity, supply chain issues and cybersecurity threats as other risks impacting reliability.

What is Minnkota doing?

While there are challenges, Minnkota supports efforts to reimagine how electricity can be produced, delivered and consumed. But the implementation of these ideas must be met with caution and common sense. After all, there is a lot on the line. A resilient and reliable electric grid that affordably keeps the lights on is the cornerstone of the American economy and our national security. Any missteps in an energy transition of this magnitude can have irreversible consequences.

So, what can be done? Minnkota is only one of thousands of utilities

across the country, but it is taking its own steps to protect itself from power reliability challenges.

• Training and education

Minnkota's employees are trained to respond to emergency grid events and continuously work to shield members from the volatility of the grid and markets. The cooperative also invests significant time in helping member-consumers, lawmakers, business interests and other in the general public understand the challenges the industry faces and the complexity in providing reliable power to the region.

• Maintaining a diverse energy mix

Minnkota's energy portfolio consists of a diverse mix of coal, wind and hydro resources. Working together, these facilities help ensure 24/7 reliability on the Minnkota system. Coal-based facilities remain the workhorse of the system and are routinely available to produce power during the vast majority of each year.

• Upgrading our power delivery systems

Minnkota is building, upgrading and replacing the power delivery

resources that connect its communities. New technologies are being added to Minnkota's grid to provide enhanced data and communication capabilities – all in an effort to respond more quickly to issues and improve overall reliability.

• Continuous cybersecurity evolution

Minnkota continuously works to protect the electric grid from physical and cyber security threats. Energy experts in Minnkota's Control Center monitor the grid 24 hours a day to ensure the safety of the cooperative's employees, infrastructure and data.

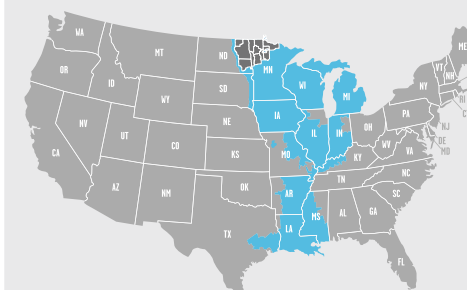
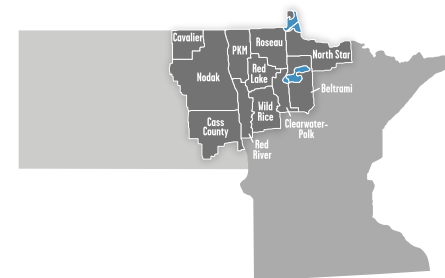
• Strategically utilizing demand response

Minnkota has one of the most robust and effective demand response (also called off-peak) programs in the country. Through the program, Minnkota and its members can temporarily control electric heating, water heating and vehicle charging loads – shifting electrical demand when economic resources are not available.

By Ben Fladhammer

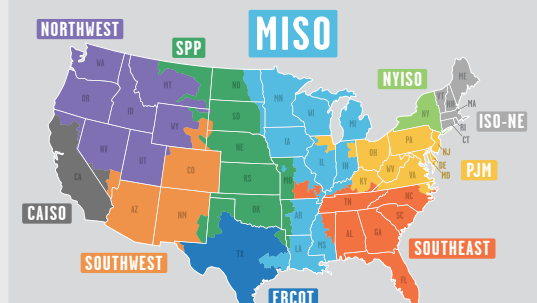
Understanding the grid

Minnkota Power Cooperative system



Where Minnkota Power Cooperative fits into MISO
(Midcontinent Independent System Operator)

Where MISO fits into the nation's grids



Answering the call

North Dakotans have always held their own against winter storms. However, no one could have prepared the western part of the state for the historic late-season heavy snow and frozen rain-fall experienced in the final days of April 2022. The blizzard left many members of Burke-Divide Electric Cooperative without power, taking out several miles of transmission line including around 1,900 poles.

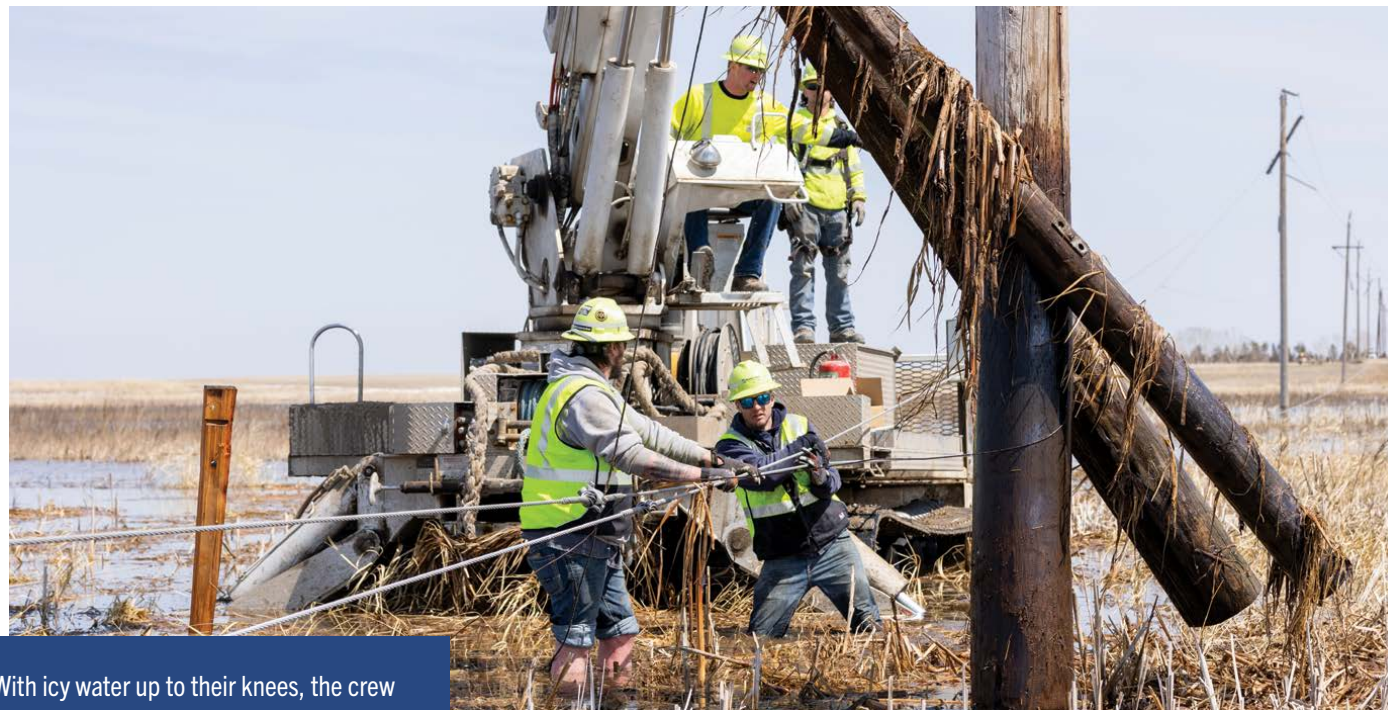
On April 27, 2022, Minnkota got the call for help.

Six lineworkers, three crew trucks and several other pieces of heavy equipment were sent west from April 29 to May 5 to restore a 14-mile stretch of downed 60-kV transmission line. This isn't the first time Minnkota has lent a hand to a fellow electric cooperative, but it was the first time a crew traveled to Crosby, N.D. "It's the cooperative

way," said David Lagge, Minnkota's line superintendent.

The job seemed daunting, but the crew was up for the task. Working 13- to 14-hour days, lineworkers removed broken poles, set new poles, strung transmission wire, repaired cross arms, and more. Minnkota's team came prepared with the basics for restoration but faced some unexpected and challenging conditions on their six-day service call.

By Emily Windjue / Photography Michael Hoeft



With icy water up to their knees, the crew spent hours replacing and restoring downed lines. "We were told we weren't going to need waders," said crew foreman Nick Bye with a laugh. But the freezing water did not dampen the spirits of Minnkota's phenomenal team.



"When I asked for volunteers, every one of them wanted to go," said Lagge. In order to choose the lucky line crew sent to Crosby, N.D., names were drawn from a hat. Even Lagge's daughter got to participate and pull the final crew member's name.

Wind and 40-degree temperatures could have turned spirits sour, but the crew remained upbeat and smiling. Both Lagge and Bye spoke about the line crew's incredible work culture. "They know how to make a job enjoyable," said Lagge.



Jerry King, general manager of Burke-Divide, said that without Minnkota's help the cooperative would have had a very difficult time restoring power to its membership in a timely manner. "Their work ethic and positive attitude were a godsend for us," said King. "The conditions these gentlemen had to work in were as bad as I've seen in my career. We are so thankful for Minnkota and the mutual aid they were able to help us with."



The team was able to repair and restore over 60 transmission poles while out west. Minnkota's crew was asked to extend its stay in Crosby to help repair some underbuild cross arms. What Burke-Divide thought would take several days, the crew completed in roughly four hours.

To show their appreciation for all the support Crosby received, the hotel that hosted Minnkota's team would serve only lineworkers from 7-8 p.m. to ensure that all crews had hot meals after their long days. This small, yet powerful gesture proves that the job of a lineworker makes a big impact on any community.



"Lineworkers have pride. When the power is out, that's when linemen usually get their adrenaline and they want to go out," said Lagge. "There is pride in doing line work and these guys are the epitome of it."

Cooperation Among Cooperatives

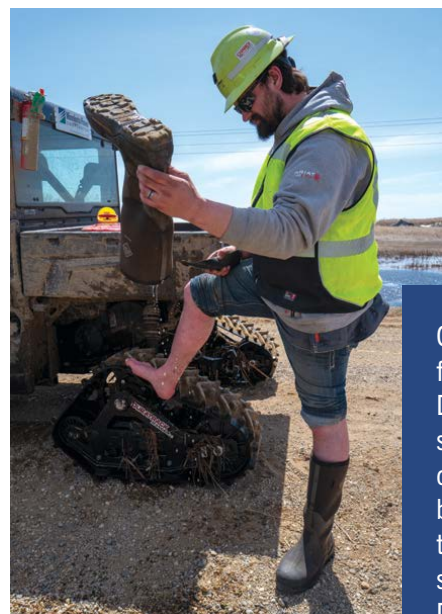
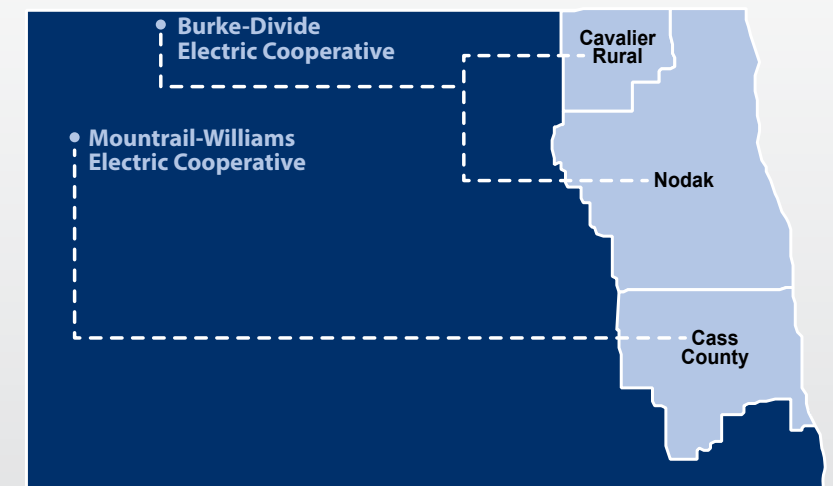
Minnkota wasn't the only cooperative answering the call for help in western North Dakota. The three Minnkota member cooperatives in North Dakota also sent support to Burke-Divide Electric Cooperative and Mountrail-Williams Electric Cooperative.

Nodak Electric Cooperative sent two crews over two weeks to help restore power to Burke-Divide members. The first crew of eight lineworkers departed on April 28, while the second crew left on May 5.

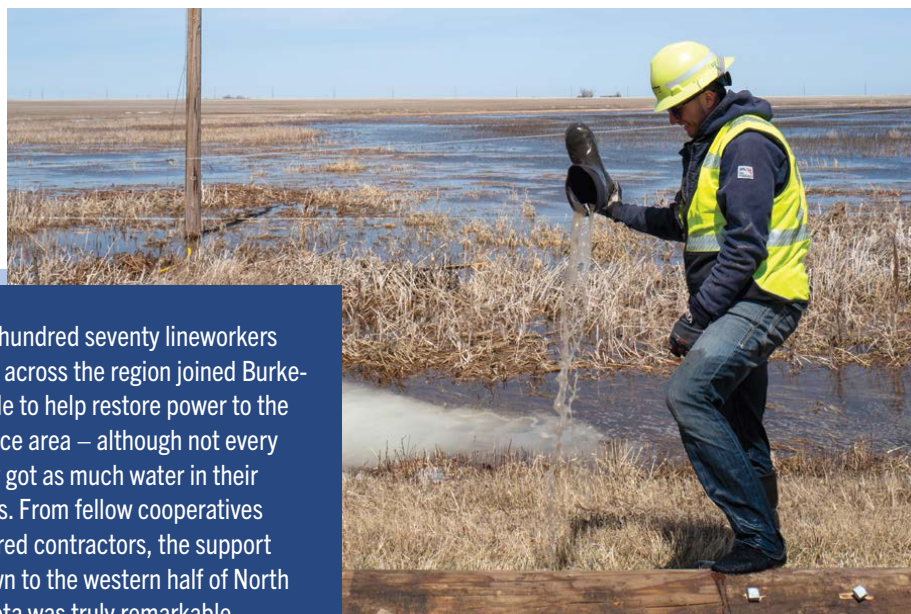
Cass County Electric Cooperative was able to send 23 lineworkers and 12 pieces of equipment to Williston, N.D, from April 25 to May 14. Cass

County assisted Mountrail-Williams Electric Cooperative by setting poles and stringing wire throughout the rural areas.

Cavalier Rural Electric Cooperative also sent a crew to help repair downed transmission lines throughout rural western North Dakota.



One hundred seventy lineworkers from across the region joined Burke-Divide to help restore power to the service area – although not every crew got as much water in their boots. From fellow cooperatives to hired contractors, the support shown to the western half of North Dakota was truly remarkable.



Minnkota's Andy Fuhrman (left) and Theresa Allard have worked over several audit cycles to develop the cooperative's strong, proactive reliability standards compliance program.



'A culture of compliance'

MINNKOTA LOGS ANOTHER SUCCESSFUL NERC AUDIT THANKS TO STRONG LEADERSHIP AND PROACTIVE PLANNING

After a solid four months of collecting, sorting and submitting documents and data from dozens of departments, May 25 offered some relief to Minnkota's Compliance team. That relief came in the form of another document – sent by the Midwest Reliability Organization (MRO).

"We just received our audit briefing this morning," said Minnkota Compliance Manager Theresa Allard, unable to hide her excited energy. "It was fantastic. We are feeling very happy with how it all turned out."

Allard and Andy Fuhrman, Minnkota's North American Electric Reliability Corporation (NERC) compliance coordinator, had just guided the co-op through its latest audit of NERC electric reliability standards. The audit is performed every three years at NERC-registered entities that contribute to the bulk electric system.

The Minnkota processes subject to review are vast, with nearly 1,100 requirements falling under the umbrella of approximately 70 NERC standards. Those standards cover several aspects of electricity reliability, including cybersecurity, physical security, information security, operations and planning.

For the latest audit, Minnkota was asked to prove compliance with 19 requirements. Not a single point of noncompliance was discovered and there were no areas of concern. Allard said it's rare for the MRO to formally comment on above-and-

beyond findings – but sometimes perfection needs to be applauded.

"We were thrilled when we had not one, but two 'Positive Observations' in our final report," Allard said. One of those kudos referred to Minnkota's strong supply chain risk management program, which allowed the cooperative to avoid several pitfalls many of the other audited agencies experienced. "The other 'Positive Observation' was something that Andy and I are very proud of: our culture of compliance."

Allard explained that compliance culture is not specific to a requirement or standard, but rather the framework of the compliance program and "story" of how it successfully functions among more than 60 Minnkota subject-matter experts (SMEs).

"During one of the interviews of the audit, they pointed out that when they interview SMEs, they expect almost an adversarial tone," Fuhrman said. "They really appreciated that our SMEs would politely answer their questions, and there was even a little laughter at times. It's a pleasant interview for them."

Proactively programmed

This isn't the first time Minnkota has earned a clean audit. Audits run smoothly due to Allard and Fuhrman's hard work over four audit cycles to develop a proactive compliance program. Every SME is trained to thoroughly document internal controls so they can be called

upon in an instant.

"We try to operate in a state of audit readiness, for every single requirement, every single day," Fuhrman explained. "We think through the evidence up front, so when audit time comes, we are already prepared."

The Compliance team won't rest on its laurels – it simply can't. Every year, NERC develops new requirements to ensure the reliability and security of the bulk electric system. The power grid is under stress, currently navigating a period of rapid change and several emergent risks in the areas of cybersecurity and operations. NERC is trying to get ahead of those risks before they're realized.

Minnkota's Compliance department will remain adaptable as the team begins preparations for the next audit cycle in 2025. But for just a moment, they're allowing the satisfaction of a clean review to settle in.

"I was proud. I felt pride not only for the Compliance department but for the whole team – we have 60 SMEs who are continuously doing compliance work for us. Whether they were directly involved in the audit or not, they are still a part of that culture," Allard said. "Our leadership is very supportive of Compliance, and that tone that we hear from the top is really making its way all the way down. I think that, as a company, we all get to take a little bit of credit for that compliance. And it's a big compliment – it really is."

By Kaylee Cusack / Photography Michael Hoeft

A sheet of glass travels through the process of being meticulously scored, cut and tempered at Fargo's Cardinal IG plant.

Bringing the heat in the glass industry

FARGO'S CARDINAL IG GLASS PLANT FINDS GROWING POWER IN PARTNERSHIP WITH CASS COUNTY ELECTRIC COOPERATIVE

Breanna Raile is one of the newer teammates at Fargo's Cardinal Insulating Glass (IG) plant. She's still referring to the duration of her time there in months, not years. But to hear plant manager Mike Arntson speak about her journey – she's packed a lot of growth into fewer than 365 days.

"This is Breanna and Ben, team leaders on Line Six and Line Five," Arntson said of the duo hard at work on the production floor. "Soon after Breanna started, Ben recognized that she had leadership potential.

So he started preparing her to be a team leader."

"We call ourselves the Dream Team," Raile said with a nudge to her mentor, Ben.

The Dream Team is two of 360 teammates at the Fargo glass manufacturer, which nested in the community in 1998 through a partnership agreement with Marvin Windows. The Fargo site is one of 10 Cardinal IG plants in the country, which collectively sold 22.6 million IG units in 2021 (2.2 million from Fargo alone).

Although the Fargo plant sells 80% of its product directly to Marvin Windows next door, Arntson says Cardinal Glass Industries, as a whole, supplies 95% of the branded window business in America. Cardinal's five subsidiaries (Float Glass, Custom Tempered Glass, Laminated Glass, Coated Glass and Insulating Glass) span 21 states to produce glass for Andersen Windows, Pella Windows and several other prominent window and door companies.

That amount of glass takes company-wide investment in the best – leaders like Brianna, expanded facilities, and top-of-the-market robotics and equipment.

"Our philosophy is longevity, performance, aesthetics. We want to have the longest-lasting, best-performing, best-looking glass in the industry, and in that order," Arntson said. "We believe in innovation. Wherever you live, we have a product that will help keep your heat in better, keep the sunlight out better, and a mix in between."

A clear difference

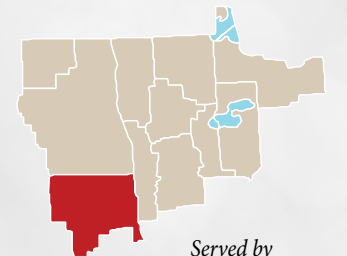
In 2020, it was time to expand production with more space and a new glass-tempering furnace. Cardinal IG Plant Engineer Mark Buisker traveled with teammates to another Cardinal site to get a look at its electric furnace. Arntson was skeptical to make a switch from natural gas to kilowatts. But not for long.



Glass rolls into Cardinal's new electric Glaston tempering furnace, an investment that is already producing higher-quality sheets.

"They came back and they said, 'Mike, if we bought the latest-and-greatest gas furnace, we'd be replacing a 1998 Toyota Corolla with a 2020 Toyota Corolla. But if we go with an electric furnace, it's like going from a Toyota Corolla to a Tesla. The quality of glass that we can produce on this electric furnace is far and beyond the quality we're capable of seeing with a gas furnace,'" Arntson recalled. "That's all I really needed to know."

Before sealing the deal on the \$4.6 million furnace with manufacturer Glaston, Buisker contacted Cardinal's power provider, Cass County Electric Cooperative (CCEC), to talk through the economics of the investment. In 2020, natural gas prices were low, but the plant wanted the electric benefits of control and glass quality.



Served by
**Cass County
Electric Cooperative**
Fargo, N.D.

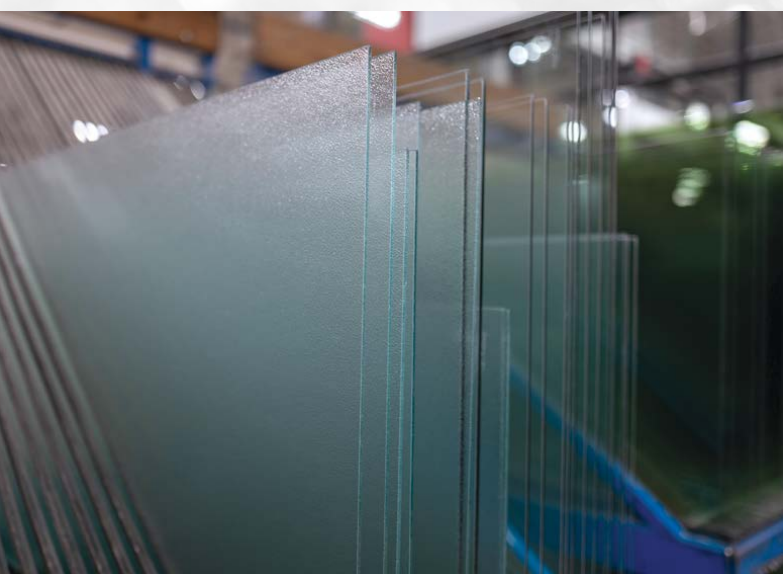
- Incorporated – March 27, 1937
- Board members – 9
- General manager – Marshal Albright
- Members – 53,421
- Miles of line – 5,748

Cardinal Glass Plant Engineer Mark Buisker explains the size and power of the facility's massive air rotation systems.





Tempering Team Leader Zobon Blackie prepares another set of glass for the furnace.



Panels of glass await packaging and shipping to regional window manufacturers.

CCEC accounts executive Chad Brousseau knew the cooperative family could help.

“We worked with Cardinal Glass, our wholesale provider Minnkota Power Cooperative and our board of directors, and we came up with a temporary economic development rate to help offset the operating costs of their expansion project for the first few years,” Brousseau said.

“Yes, and that was a game changer. When Mark came back and said that we would be getting a better initial rate,” Arntson punctuated the point with a snap, “that was it. And thank goodness. The difference is evident.”

In 2021 and 2022, natural gas prices rose dramatically as the co-op’s electric rate remained stable, which saved the company even more, combined with the thermal efficiency of the modern unit. The savings were essential as the plant invested more than \$50 million into enhancing the facility over the past five years. Recent upgrades include eight 140-ton air rotation systems that filter nuisance dust and viruses and control the climate of the entire plant. Add that to a facility already using electricity for eight robots, six production lines and countless other equipment – and there’s a lot of power on the line.

“Cass County Electric and Minnkota had to make similar investments to our infrastructure out here, too, to serve that growing load and make sure we maintain that reliability,” Brousseau said. “We know that’s crucial for Cardinal Glass.”

“I’m glad we built here in the industrial park on Cass County’s system,” Arntson replied. “Even a small outage or momentary blink will put us down for at least an hour.”

Taking flight

The nation’s hunger for high-quality tempered glass innovations isn’t fading. Cardinal Glass Industries has tripled annual sales from \$1 billion in 2012 to more than \$3 billion today. As demand increases, so does the likelihood the Fargo site will continue to grow.

“We’ve expanded the plant a number of times, most recently in 2020. That expansion is almost done, and we’re just putting some finishing touches on it,” Arntson explained. “I’m sure we will expand to the fullest extent of our property.”

As it builds upon its production, Cardinal IG Fargo will continue to elevate its focus on the glass handlers themselves. The Fargo plant is one of only 11 eligible facilities in North Dakota that is recognized as an

OSHA Voluntary Protection Program Star Worksite, a recognition of world-class safety practices. With a workforce hailing from five of the seven continents, Cardinal IG won the first ChamberChoice Award for Diversity and Inclusion in 2021. Those 360 unique teammates are supported with annual profit sharing, internal and external leadership training, and opportunities to grow with the company – as experienced by team leader Raile.

Towering robot arms and red-hot electric furnaces are important for high-quality glass, but the powers of personal connection and professional fulfillment can be stronger tools for industry success.

“We have a great team,” Arntson said from the plant floor. “We’re very fortunate.”

By Kaylee Cusack / Photography Michael Hoeft

The tempering process

- The Glaston electric furnace heats glass to 690° C (between 1,200-1,300° F).
- The sheet is red hot and turns to the consistency of taffy.
- The glass is conveyed to a “quench,” which blows air onto the surface.
- The outside of the glass is cooled rapidly, placing it in a state of compression.
- The inside cools more slowly, placing it in a state of tension.
- The compression/tension creates tempered glass that is four times stronger than normal glass.

Community and cooperative connector

MARTY TETRAULT TAKES ANOTHER STEP INTO SERVICE AS CAVALIER RURAL ELECTRIC'S NEWEST GENERAL MANAGER



Back in 2017, the North Dakota Association of Rural Electric Cooperatives (NDAREC) recognized Marty Tetrault with its annual Community Service Award. Tetrault was serving as the assistant operations manager at Cavalier Rural Electric Cooperative (CREC) at the time, and a colleague told the NDAREC that Tetrault was “CREC’s Michael Jordan” – a go-to talent who made everyone else want to be better.

On May 1, 2022, Tetrault was passed the ball of leadership, becoming the new general manager of the cooperative following the retirement of Charles Riesen. The former CREC operations manager, line foreman and journeyman lineworker has been with the co-op full time for 25 years. However, he was a part of the team as a teen growing up in Langdon, N.D.

“I actually started out in high school, part-time, on the pole-treating crew,” Tetrault recalled. “It was a summer job. I did that for about three years, and then I graduated and had other plans to go to auto

body school. Two weeks before I went, I decided to sign up for lineman school.”

Tetrault’s experience with the line crew had revealed his true professional passion. “I liked the atmosphere, and I liked the co-op and what’s behind the co-op. I grew up with that, and I wanted to be in that type of work.”

From day one as an apprentice lineworker to the present day as general manager, Tetrault has found pride in his co-op’s commitment to its member-owners. He speaks of career highlights that have enhanced lives in Langdon and the surrounding service area, like having electricians on staff to assist members and maintaining a public stock room of wire, breakers, water heaters and more. Three years ago, Tetrault helped guide CREC through the acquisition of Glenn’s Appliance, a local appliance center that was looking for a buyer to keep it a Langdon-based resource.

“It’s things like that, that we’ve done for the community – the community has really supported us with

it. We have a really great following,” he said. “For us, customer service is our biggest goal. We try to do our best, with minimal people some days.”

Tetrault leads a tight-knit crew of four lineworkers, two electricians and a small handful of office employees. In several cases, he has watched them grow up, and has even watched their families grow up. It’s one of the things he finds special about his rural corner of northern North Dakota, and one of the reasons he’s adamant about giving back to the region that has given so much to him.

Tetrault’s co-op resume is impressive, and it’s backed up by a list of roles he has held in the community. He served 20 years on the Langdon City Council and has been active with the volunteer fire department for 26 years – three of those years as chief. He coached youth baseball for around 10 years as a member of the baseball board and continues to coach varsity football as an assistant. Tetrault helped build a fourth-, fifth- and sixth-grade football program with a previous coach, which is still flourishing.

There’s a reason CREC’s new general manager was recognized with a Community Service Award, and a reason he’s been likened to an NBA great: He always wants to see the home team succeed.

“I just enjoy the aspect of small community, people helping people,” he said. “I like the community, I like where I live, I like being involved.”

By Kaylee Cusack / Photography Michael Hoeft

Minnkota’s Brendan Kennelly (left) presents the 2022 Andrew Freeman Design Innovation Competition award to the winning project, WoundAssure, team members.



WoundAssure wins 2022 Freeman Design Awards

WoundAssure was awarded first place at this year’s Andrew Freeman Senior Design Innovation Awards. The winners were a collaborative team of University of North Dakota (UND) Electrical Engineering and Computer Science seniors Adam Laasko, Gabe Carlson, Matthew Kuznia and Zachary Wenzel. They created a portable device that allows diabetic wounds to be assessed by using thermal mapping technology and a UV camera.

“Our project was pure innovation,” Kuznia said. The team engineered a device that was not only functional but also provided accessible results from a tablet or smartphone. Filling a need in the diabetic community was a driving factor in this project, which aims to more accurately assess wound severity and healing prognosis. Team member Gabe Carlson is a Type 1 diabetic himself.

“It has a lot of practicality in the medical field,” added Laasko. “There are a lot of senior design projects that are hard to apply, but seeing ours get results and have an effect on people makes it really interesting.”

For the past 22 years, this award has been bestowed to students who have embodied the core values of Andrew “Andy” Freeman – innovation, communication and teamwork. Freeman was a UND engineering graduate and the general manager of Minnkota for 42 years. His legacy also includes inventing the headbolt heater – a plug-in heating device to help a car or tractor start on cold days.

WoundAssure was awarded \$2,000 from the endowment established in 1996 in honor of Andy.

“Keeping Andy’s legacy alive is really the key mission,” said Brendan Kennelly, Minnkota senior manager for power delivery en-

gineering. Kennelly represented Minnkota while presenting the awards on May 10 in the Collaborative Energy Complex at UND.

“We are all very thankful for the support of Minnkota,” said Brian Tande, Dean of the College of Engineering and Mines. “This is always a fun event every year and as I’m sure you realize, a lot of work goes into these projects, not only by the students but by the faculty. Your recognition of that is very much appreciated.”

The second-place winners reverse engineered a Digital Media Vending International (DMVI) slushie machine to increase the efficiency of the machine and improve product capacity. Team members were Mechanical Engineering seniors Jacob Hatfield, Elijah Riesgraf, Daniel Vallejos and Jorge Florencia, and they were awarded \$1,500.

The third-place winners focused on a method to convert fuel-grade ethanol into aromatic hydrocarbons. The project evaluated how various high-value chemicals could be created through this process. Team members were Chemical Engineering seniors Abbie Radermacher, William Moe and Josiah Burkman, and they were awarded \$500.

By Emily Windjue / Photography Michael Hoeft

Minnkota Communications team collects national awards

Minnkota's Communications department has earned national recognition for the fourth-straight year, winning two first-place Gold awards from the National Rural Electric Cooperative Association's (NRECA) Spotlight on Excellence Awards. The program recognizes outstanding work produced by electric co-op communication and marketing professionals across the country.

Minnkota won a first-place Gold award for Most Innovative Use of Digital Communication for its new Minnkota.com website that was launched in 2021. To better align with the new Minnkota logo and branding developed several years ago, the Communications team reimaged the look, messaging and tone of the website for the new generation. The site was made more user-friendly, focusing on the aspects of Minnkota that are most important to visitors. The site was also made mobile-friendly for easy use on smartphones and tablets. The submission was judged against other G&Ts and statewide organizations.

A first-place Gold award for Best Feature Story was presented to Minnkota for the piece "The line-worker treatment." The story follows 6-year-old Lakai Rivera through his afternoon spent with the line crew of Clearwater-Polk Electric Cooperative. Lakai, who was completing cancer treatments at the time, grew up with a fascination for power poles and lines. When the cooperative found

out, they made his electric dreams come true. The story was an at-large submission and competed against cooperatives of all sizes nationwide.

The Spotlight on Excellence Awards consist of 18 categories that reflect the scope of cooperative communications, including writing, graphic design, marketing campaigns, etc. Entries are judged by industry peers.



Minnkota Communications team pictured left to right: Ben Fladhammer, Jennifer Erickson, Emily Windjue, Jenna Chase, Michael Hoeft and Kaylee Cusack.