

# *Minnkota Messenger*

March-April 2018

Building for  
the Future

*Story page 2*





(Top left) Collin Jensen, Minnkota board chairman, addresses the membership.

(Top right) U.S. Sen. John Hoeven visits with members and guests following the annual meetings.

(Bottom left) Delegates and guests listen to a presentation at the annual meetings.

(Bottom right) Mac McLennan, Minnkota president & CEO, closes the meeting with his report.



# Building for the Future



## *Minnkota, Square Butte hold annual meetings*

Collin Jensen opened the Minnkota Power Cooperative 78<sup>th</sup> annual meeting by taking note of the cooperative spirit.

"Years back our predecessors thought it was a good idea to work together because

we get more done together than we do alone, and I hope that feeling prevails today and that's why we're here among friends," said Jensen, chairman of the Minnkota board of directors.

For the first time, the Minnkota and Square Butte Electric Coopera-

tive meetings were held at the cooperatives' new headquarters building in Grand Forks. About 200 member delegates and guests attended the meetings held on April 6. U.S. Sen. John Hoeven and U.S. Rep. Kevin Cra-

mer were in attendance and addressed the crowd on federal issues important to the cooperatives.

"Building for the Future" was the theme for the meetings, which was appropriate considering the decisions the board faced in 2017 and opportunities on the horizon.

"The decisions we make today are actually commitments to people 10, 20 or even 50 years down the road," Jensen said.

Both Minnkota and Square Butte had highly successful years in 2017, according to Mac McLennan, who serves as Minnkota's president & CEO and Square Butte's general manager.

"We had a great year in 2017," McLennan said. "The plants ran really well and our power delivery crews completed a significant number of projects, which helped us end the year in excellent financial condition."



(Left to right) Roseau Electric Cooperative delegates Wes McFarlane, Dale Moser, James Hallan and Roger Amundson listen to a report during the annual meetings.

**“We had a great year in 2017. The plants ran really well and our power delivery crews completed a significant number of projects, which helped us end the year in excellent financial condition.”**

– MAC McLENNAN, Minnkota president & CEO

## Young Station excels

The reliable operation of the Milton R. Young Station in 2017 was one of the key achievements highlighted during the meetings. The two-unit coal-based facility had its best annual availability rating and second-highest net generation level ever. In addition to the outstanding production totals, employees at the plant recorded one of their best years of safety and continued to meet all compliance requirements for land, water and air quality.

Mark Habedank, Square Butte board president, credited the employees at the Young Station for the great year. Square Butte owns Unit 2 at the plant.

“The successes of 2017 are a direct result of working proactively to operate and maintain the facility,” Habedank said. “We hope that our performance will serve as a foundation for future successes.”



**Mark Habedank**  
Square Butte board president

One of the most significant risks at the Young Station is the potential of adverse regulations. In 2017, Minnkota and Square Butte were supportive of the Environmental Protection Agency’s decision to reconsider and rewrite the Clean Power Plan – an effort to regulate carbon dioxide (CO<sub>2</sub>) emissions from existing coal-based facilities. The rule, finalized in 2015, had stringent targets and aggressive timelines that put many of North Dakota’s facilities at risk. When the new version of the Clean Power Plan is proposed in 2018, it will likely go through another round of legal and technical challenges.

In the meantime, Minnkota has taken a leadership role in evaluating breakthrough technologies to capture and utilize CO<sub>2</sub>



Member delegates sign in and register for the annual meetings.

emissions. In 2017, research efforts were pursued related to Project Tundra – a potential CO<sub>2</sub> capture project at the Young Station. Early indications are that the project would pair well with either enhanced oil recovery or safe, permanent geologic storage. Project Tundra continues to receive robust support at the state and federal levels. At year-end, the project partners were in the process of securing grant funding to begin the initial design, engineering, testing and economic analysis.

“Project Tundra represents a significant opportunity,” McLennan said. “It is modeled after a project in Texas that is operating right now and delivering on the potential of enhanced oil recovery using CO<sub>2</sub>.”

## Power delivery

From a power delivery perspective, 2017 was one of the most productive project years in recent memory. An accelerated effort to address blink outages on the cooperative’s 69-kilovolt (kV) transmission system reached full stride during the year.

About 420 miles of this 2,100-mile system was equipped with technologies in 2017 to reduce the impacts of these brief outages. It is anticipated that by 2019, nearly 800 miles of the most impacted areas of our system will have been addressed. Early indications are that the projects have significantly improved the reliability of the system.

Minnkota is also in the midst of a \$30 million effort to improve reliability and support load growth in the Fargo region. Over the last decade, demand for energy in that area has increased by almost 50 percent. To meet these demands and foster continued economic viability, Minnkota is upgrading its area substations and power line infrastructure from 69-kV to 115-kV. These projects began in 2015 and will continue through 2019.

McLennan sees the security of the electric grid as a growing challenge for utilities across the nation.

"I think security is an area where we will continue to see exponential growth in requirements, both on the physical and cyber side of our business," McLennan said. "That was a major driver for our move to this new facility."



**Lorraine Nygaard**  
*North Star Electric Cooperative*

## Red Lantern award

Just as the lantern was the friendly symbol of light in rural neighborhoods in bygone days, so is rural electrification the symbol of this era of abundant light, progress and better living. The Red Lantern Award is presented to delegates who have served 10 years on their distribution cooperative board.

## Aakre newly elected to Square Butte board

During the business session and reorganization meetings, new delegates and officers were elected to the Minnkota and Square Butte boards.

The Minnkota board re-elected Jensen, Roseau Electric Cooperative, as its chairman and Russell Okeson, Wild Rice Electric Cooperative, as vice chairman. Colette Kujava, Red Lake Electric Cooperative, was elected as secretary-treasurer.

Other directors who were re-elected to the board for one-year terms were Rick Coe, Beltrami Electric Cooperative; Sid Berg, Cass County Electric Cooperative; Donald Skjervheim, Cavalier Rural Electric Cooperative; Leroy Riewer, Clearwater-Polk Electric Cooperative; Les Windjue, Nodak Electric Cooperative; Steve Arnesen, North Star Electric Cooperative; Jeff Folland, PKM Electric Cooperative; and Roger Krostue, Red River Valley Cooperative Power Association.

At the Square Butte annual meeting, Habedank, Wild Rice Electric, was re-elected as president of the Square Butte board of directors and Paul Sigurdson, Nodak Electric, was re-elected vice president. Roger Amundson, Roseau Electric, was re-elected secretary-treasurer and Marcy Svenningsen, Cass County Electric, was re-elected assistant secretary-treasurer. Newly elected to the Square Butte board was Paul Aakre, PKM Electric Cooperative, who replaced the retiring Gordon Bernstrom.

Delegates re-elected the following directors to one-year terms on the board of directors: Murl Nord, Beltrami Electric; Anthony Ottem, Cavalier Rural Electric; Gary Mathis, Clearwater-Polk Electric; Mike Hanson, North Star Electric; Steve Linder, Red Lake Electric; and Marvis Thompson, Red River Valley Co-op Power. □



**Paul Aakre**  
*new Square Butte director*





A ribbon-cutting ceremony was held Feb. 21 for Minnkota's new campus.

# A new home

## *Leaders, members gather at new Corporate Campus*



Grand Forks Mayor Mike Brown addresses the crowd during the ribbon-cutting ceremony on Feb. 21.

**M**innkota celebrated its new Corporate Campus with the Minnkota/Northern Municipal Power Agency Joint System membership, contractors and community leaders during a ribbon-cutting event on Feb. 21.

Among the speakers was Grand Forks Mayor Mike Brown.

"I hope this building signals, and I know it does, that you will be here for a long, long time," Brown said. "Minnkota's investment in this facility is much larger than bricks and mortar."

Brown added that Minnkota is also investing in the region – with about 150,000 Joint System consumers and its more than 200 employees based in Grand Forks.

Minnkota President & CEO Mac McLennan gave the guests an overview of the building, thanked the contractors for their work and acknowledged the dignitaries and the ambassadors from The Chamber of Grand Forks and East Grand Forks who attended.

The 252,000-square-foot Corporate Campus officially opened in December at 5301 32nd Avenue South in Grand Forks.

"It's a double win for our region when a facility of this quality can be built and added to our community and is constructed by local contractors," said Keith Lund, president & CEO of the Grand Forks Region Economic Development Corporation. "But I think the biggest impact of this project is Minnko-



The Minnkota board of directors and representatives from the Greater Grand Forks Chamber of Commerce join Collin Jensen (center), Minnkota board chairman, in cutting the ribbon on Minnkota's new facilities.

ta's commitment to its nearly 400 employees, over half of whom call this facility home."

Collin Jensen, chairman of the Minnkota board, said it was the right time for the cooperative to build a new campus in Grand Forks. He also said the approach was to get local and regional companies involved.

"I'd like to say thank you to all those involved," Jensen said. "I want to thank our members for being so supportive and I want to thank the board. I haven't heard one comment of buyer's remorse since we got the building up.

"It was a very unified decision and a very positive decision. You could see with the building we built and the effort we put into it, we are in Grand Forks for the long haul."

Joining the speakers in the actual ribbon cutting were all Minnkota board members, Jon Kearns of ICS, Wayne Dietrich of EAPC Architects Engineers and chamber ambassadors.

"I can only imagine the tremendous pride that your staff feels when they drive into this campus on a daily basis," Lund said.

The Minnkota board began discussing

long-term infrastructure needs in 2012. Among the options considered during the process were:

- Renovations to existing buildings;
- A new master plan at the cooperative's existing site on Mill Road;
- A secure, modern campus with efficient layout of site and buildings.

Following approval from the board of directors, construction began in September 2015. The project was completed on schedule and under the \$65 million budget. The campus addresses Minnkota's wide-ranging needs in the areas of workplace efficiency, physical and cyber security and large equipment storage.

The new complex is only slightly larger in overall square footage compared to the old buildings, yet it uses the space much more efficiently. Energy efficiency was a key focus during the design and construction of the facility. The entire campus is heated and cooled using a geothermal system, which includes 646 wells each drilled approximately 285 feet deep. The system performed well through one of the coldest North Dakota



Terry Peoples, power system operator, monitors the region's electric grid inside Minnkota's new control center.



The warehouse has many safety and efficiency features, including LED lighting and a guided electric forklift.



A 50-ton overhead crane is used to lift and maneuver large equipment inside Minnkota's shop area.





A large conference center space will allow Minnkota to host employee meetings and annual meetings on site.

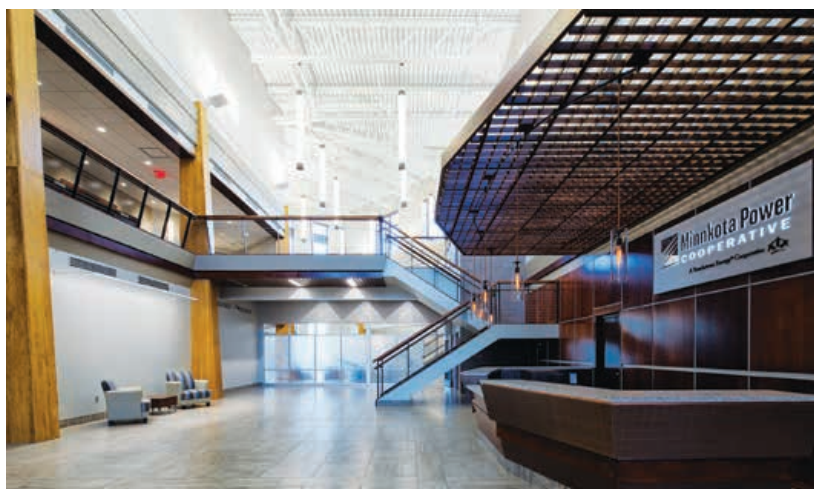
winters in several years. Also included in the design were numerous windows and glass to utilize natural light, LED lighting, variable frequency drives, motion sensors and other efficient technologies.

Key design elements include having everything located on one campus, a collaborative work environment, efficient layout of employees and resources, clean, bright work areas, heated garage space and temperature-controlled work areas. A large conference center, an adequate number of meeting rooms and an employee wellness center were also incorporated into the design.

The first few months at the new building have been busy. In addition to the ribbon cutting, Minnkota hosted The Chamber of Grand Forks and East Grand Forks' Business After Hours in March and the Minnkota and Square Butte annual meetings in early April.

Mayor Brown was at a couple of those events.

"Thank you for your commitment to Grand Forks and we will continue to reciprocate that commitment," Brown said during the ribbon-cutting event. "Congratulations on this day and all the work that got us here, and we will see you in 78 years for the next expansion." □



The front entrance area welcomes visitors into the facility.



The workspaces at the facility were designed to encourage collaboration.





# Preparing for influx

## *Cass County Electric partners with LEC, Sanford to install electric charging stations*

**C**ass County Electric Cooperative (CCEC) continues to place itself on the cutting edge of emerging energy trends and technology.

The latest advancement is an expansion of the number of electric vehicle charging stations it has partnered to install.

Representatives of Cass County Electric, the Lignite Energy Council, Sanford Health and local media gathered earlier this month at Sanford Medical Center Fargo to celebrate the installation of two electric vehicle charging towers.

The towers, which have a combined four plug-ins, are the result of an ongoing cost-sharing initiative by CCEC and Lignite Energy Council, in partnership with local leaders, to get ahead of the expected influx of electric vehicles.

"We see electric vehicles (EV) as an area where we can grow kWh sales and these charger sites are not only a little bit of additional load, but EV billboards/marketing sites, which will hopefully encourage more people to feel comfortable purchasing an EV," said Chad Brousseau, CCEC manager of energy services. "Our slogan around these chargers is 'Charge up with Homegrown ND Energy' and

you can see that prominently displayed on the charger signage."

Electric vehicle owners do not pay to charge vehicles at Sanford. The chargers are on Sanford's general service from CCEC and usage is included on Sanford's electric statement. With the 7.7-kilowatt (kW) chargers, Sanford pays about \$1 for an EV to charge for a couple of hours.

CCEC also partnered with West Acres in 2016 to install electric car chargers in the mall's parking lot.

Since EV models are becoming increasingly affordable, they represent a growing segment of both the transportation and energy industries. That's why EV charging stations are starting to surface in the Fargo-Moorhead area.

In addition, CCEC offers members a special rate and a one-time rebate for at-home EV charging. Those who put in a charger at their home receive \$50/kW (\$500 max per charger). They must be Level 2 (240-volt) chargers. The average EV charger is 6.6 kW, which would qualify for a \$330 rebate.

The Minneapolis area has seen a big increase in electric vehicles. Officials believe it won't be long before there's an electrified corridor between Minneapolis and Fargo.

"We think that it's a growing trend and infrastructure is being put in place in different venues," said Steve Van Dyke, vice president of communications for the Lignite Energy Council. "We wanted to help out, and we just thought it was the right thing to do." □

Helping dedicate the charging stations at Sanford Medical Center Fargo were Luke Hellier, Lignite Energy Council; Chad Brousseau, Cass County Electric; Bob Miller, Cass County Electric; Susan Jarvis, Sanford; Mike Erickson, Sanford; and Jim Durben, Sanford.





# IDEA competition turns 10

**W**orld-class businesses have grown from the garages, basements and backyards of northwest Minnesota.

Companies such as Polaris, Arctic Cat, Digi-Key and Marvin Windows and Doors got their start in the sparsely-populated area and have developed into international leaders in their respective industries. The IDEA competition, organized and administered by the Northwest Minnesota Foundation (NMF), aims to keep that spirit of ingenuity and entrepreneurship alive in the region.

"The competition is really meant to help get those early ideas off the ground and help them through the difficult start-up phase," said Karen White, NMF vice president for programs. "We're trying to build out this ecosystem that supports these emerging entrepreneurs and small businesses."

The annual competition provides thousands of dollars in cash awards to winners, as well as access to low-interest micro-lending programs. More importantly, White said training, business coaching and expertise from other professionals in the area helps to bring these ideas to fruition.

"I've heard from many winners who view the process and the structure as more valuable than the cash awards," White said.

Throughout the competition, NMF provides professional guidance for entrants to develop or refine a business plan. The culmination of the competition is a presentation format, similar to the popular TV show Shark Tank. Minnkota is a judge and sponsor of the competition.

Philip Knutson, NMF economic development specialist, said the competition is open to entrants ranging from established businesses with innovative ideas to new entrepreneurs with only a concept in mind.

"We have entrants who may have been thinking about an idea for years and didn't really know what to do," Knutson said. "In a few short months, they're up and running

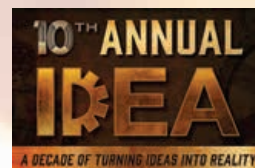
and looking at the next steps.

"They're getting technical assistance from Day 1. We have a lot of entrants say they never knew there were so many people out there who want to help their business succeed."

In the last decade, 144 applications have been submitted for the competition and more than \$350,000 has been awarded to the winners. Prominent businesses that have participated in the competition include Air Corps Aviation and LaValley Industries of Bemidji and Far North Spirits of Hallock.

After 10 years, NMF isn't worried about running out of ideas. They've dubbed the area as the "Ingenuity Frontier."

"I think a lot of time ingenuity is born out of necessity," White said. "With the remoteness of where we live and the agricultural background, we have the mindset that if a problem needs to be solved, we're going to solve it ourselves." □



Far North Spirits (top) of Hallock and LaValley Industries of Bemidji are two businesses in Minnkota's service area that have participated in the Northwest Minnesota Foundation's IDEA competition. Far North is a micro-distillery and LaValley manufactures large pipe handling attachments.



# Bolstering our system



Minnkota crews complete substation maintenance work in 2017.

## *Big year planned for Power Delivery*

**A** slow, cold start to spring has not dampened spirits in Minnkota Power Cooperative's Power Delivery Division.

The group of engineers, electricians, line workers, utility workers and others remain optimistic about an ambitious construction schedule. With support from contracted personnel, they hope to make significant progress on \$51.5 million of capital projects included in the 2018 budget.

"We have a very ambitious project schedule this year," said Brendan Kennelly, senior manager of power delivery operations. "The projects are needed to improve system reliability, support load growth and ensure the future viability of the cooperative's demand response system."

Following 2018, Minnkota forecasts power delivery budgets in the \$25-30 million

range during the remainder of its five-year construction expenditures forecast.

### **Beating blinks**

An effort to address blink outages on the cooperative's 69-kilovolt (kV) transmission system will continue on an accelerated basis. A significant portion of this 2,100-mile system has aged beyond its 50<sup>th</sup> year of service and was not built to meet the heightened expectations of today's consumers. While it is not practical or cost-effective to reconstruct all of these lines in the near term, modifications can be made to help limit their exposure to blinks caused by lightning strikes or other line contacts.

In 2018, about 250 miles will be equipped with technologies to reduce the impacts of these brief outages. It is anticipated that by



the end of the year, nearly 800 miles, or 40 percent, of the system will be completed since the start of the project a few years ago.

“We’ve been pleased with the results so far of our blink outage mitigation efforts,” Kennelly said. “The blink mitigated circuits are showing 50 percent improvement over non-blink mitigated circuits.”

Structures are being fitted with the following equipment to help reduce blink outages: a hanging lightning arrester, a polymer post-top insulator, a raptor deterrent (pole-top helmet) and a climbing animal deterrent (pole wrap). The installation of these devices will continue on an accelerated schedule in impacted areas of the system.

### Supporting Fargo growth

Minnkota continues to make prudent investments in growing areas of its service territory. The cooperative is in the midst of a multiyear, \$30 million investment in the Fargo area to improve service and support load growth. Over the last decade, demand for energy in that area has increased by almost 50 percent. To meet these demands and foster continued economic viability, Minnkota is upgrading its area substations and power line infrastructure from 69-kV to 115-kV. These projects began in 2015 and will continue through 2019.

“The upgrade of existing transmission infrastructure from 69-kV to 115-kV is essential to meeting increased electrical demand, as well as maintaining a safe and reliable grid,” Kennelly said.

In 2018, the focus is on projects at the Frontier, Maple River, Grager and Stanley substations to accommodate the new 115-kV power line infrastructure. The Frontier substation will be expanded to provide a 115-kV connection for the growing south Fargo area. At the Maple River substation, a 115-kV interconnection will be developed, which includes the addition of three circuit breakers and associated equipment. The Grager substation will be reconstructed to accommodate larger transformers, 115-kV transmission line interconnection equipment, a new distribution bay design and a new control house.

The Stanley substation is serving the growth area south of 52nd Avenue South in Fargo and will require an additional transformer to serve the load. The Stanley substation has experienced a 10 percent growth rate in less than five years and is forecasted to continue to grow with new housing developments in the area.

Outside of the Fargo area, Minnkota will rebuild the Cooperstown (N.D.) substation, including improving the condition of the fencing, foundations, structural steel and bus arrangement.

### Demand response

After several years of research and engagement with the membership, Minnkota began replacing much of the original equipment in 2017. The ripple injector system, originally installed in the 1970s, includes electronic equipment that can produce ripple signals at the substations and inject these signals into the power transmission and distribution lines.

Receivers at homes and businesses can “read” the signals, and when the appropriate message is sent, the receiver interrupts the electric power flowing to a water heater, electric heating system or other controlled loads. In exchange for allowing Minnkota to temporarily control these systems, the consumer receives a discounted retail electric rate. Using demand response helps Minnkota limit its exposure to the volatility of the MISO energy market.

In 2018, Minnkota will focus on demand response project upgrades at the Littlefork substation, near Littlefork, Minn.; Moranville substation, near Warroad, Minn.; Pickert substation, near Finley, N.D.; and Northwest Angle, in Minnesota’s Lake of the Woods area.

“The demand response has been such an invaluable resource for Minnkota and its members over the last 40 years,” Kennelly said. “We are committed to ensuring that, from an equipment and infrastructure perspective, we are well-positioned for the future.” □



Minnkota has been upgrading its 69-kV transmission line to 115-kV in the Fargo area. Work will continue on the project through 2018.



Milton R. Young Station employees and their families helped clean up Nelson Lake April 22 as part of Earth Day 2018.

## Minnkota employees celebrate Earth Day

To help celebrate Earth Day 2018, several Minnkota employees at the Milton R. Young Station and their families participated in a spring cleanup of the Nelson Lake area April 22 near Center, N.D. The theme of Earth Day this year was “to end plastic pollution.”

Organizer Scott Hopfauf and others spent time on the shores of Nelson Lake and elsewhere picking up trash and other debris.

“Given the amount of trash recovered, I would say it was a great success,” Hopfauf said. “Pretty much a full pickup load in two hours. Unbelievable the items people discard.”

The Young Station is adjacent to the lake, which was built to provide cooling water at the power plant. It is a popular recreational area for fishing, swimming, boating and water skiing enthusiasts. It is home to some of the state’s largest crappies and largemouth bass, including record-size catches. The lake also has many bluegills, sunfish, bullheads, northern pike and perch. □

## Minnkota Messenger

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Minnkota is a generation and transmission cooperative supplying 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 150,000 customers.

Visit Minnkota’s website at [www.minnkota.com](http://www.minnkota.com).



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**On the cover:** Minnkota crews worked on the Ulrich substation in 2017. Located near Audubon, Minn., the substation was equipped with new ripple injectors as part of upgrades to Minnkota’s demand response system. *Story on pages 10-11.*