Line freeze expertise

Learn more on pages 4-7

Types of heat pumps - page 9

Apply now for a PKM scholarship - page 10
Mandates add cost

MIKE SCHMIDT
CEO
PKM Electric Cooperative

Gas emissions come from a variety of sources. The four largest are:
- Transportation - 26.09%
- Electrical generation - 26.01%
- Agriculture - 25.69%
- Industrial - 13.30%

Mandates add cost and drive up the energy mix, but mandates make renewable energy an important part of the mix to meet this standard. I believe cooperatives overall are on track to exceed this standard. The Minnkota system has already exceeded 25 percent renewable by 2025.

By 2030, the legislature passed a renewable energy standard of 50 percent renewable. In 2007, the legislature passed a renewable energy standard of 25 percent renewable by 2025. The Minnkota system has exceeded that mandate, and Minnesota cooperatives overall are on track to meet this standard. I believe renewables are an important part of the energy mix, but mandates make them more expensive.

In Minnesota, greenhouse gas emissions come from a variety of sources. The four largest are:

- Transportation - 26.09%
- Electrical generation - 26.01%
- Agriculture - 25.69%
- Industrial - 13.30%

My concern lies with where the legislature is going with the 26.01 percent of fossil fuel electrical generation. No matter what your feelings are on the issue, costs and system reliability are important factors. Electricity plays an important role in every sector of the economy.

Wind and solar are not firm power as the technology isn’t there to store the energy produced. There has to be a spinning shaft somewhere when the wind isn’t blowing or the sun isn’t shining, or the lights won’t stay on.

Currently Minnkota uses economical and abundant coal to produce this firm power.

What’s the future of coal? Minnkota is currently studying a project called Tundra, which involves injecting carbon dioxide produced from the coal plants into wells in the Bakken. This would permanently store the carbon underground with the added benefit of increasing the oil produced by the wells.

I believe the market will pave the way into a cleaner energy future as economically possible when the technology improves. Mandates are not needed and drive up costs. To live in our area of northwest Minnesota, we need abundant energy to heat our homes, travel the long distances in rural areas, and feed the nation. A common-sense approach is needed, and we have that representing us with Dan, Deb and Mark.
At its December meeting, the board of directors of PKM appointed a nominating committee to nominate candidates for the board of directors, to be voted on by the members at the annual meeting on April 2, 2019.

The nominating committee will meet on Feb. 26. Members who may have an interest in being a candidate for the board of directors should inform the committee.

The bylaws of the cooperative provide for an additional method to become a candidate for the board of directors. If it is felt a potential candidate was not given due consideration by the committee, or if the potential candidate did not contact the committee prior to its meeting, a member can become a candidate by having 15 or more members place his/her name in nomination by petition and delivering same to the cooperative 20 days prior to the annual meeting.

Members appointed to the committee are:
- Todd Johnston, Angus
- Ron Goodyke, Euclid
- Gary Jensen, Drayton
- Jason Sobolik, Drayton
- Carey Mortenson, Kennedy
- Brian Jensen, Stephen
- Alvin Nybladh, Stephen
- Stanley DeMeyere, Warren

PKM nominating committee APPOINTED

Laundry Tip: Dry towels and heavier cottons separately from lighter-weight clothing. You’ll spend less time running the dryer for lighter-weight items, which saves energy.

Source: energy.gov.

Electrical Inspectors

Marshall and Polk Counties
Bryan Holmes
218-686-1413
Wayne Bergstrom
701-520-9771

Kittson County
Wayne Bergstrom
701-520-9771

Electrical Safety Checklist

Nearly half of all home fires occur during winter months. Take a few minutes to identify and correct any potential electrical hazards to ensure the safety of your home.

SWITCHES AND OUTLETS

- Are any switches or outlets warm to the touch? Yes  No
  Warm switches or outlets indicate an unsafe wiring condition.

- Are any outlets or switches discolored? Yes  No
  Discoloration indicates dangerous heat buildup at these connections.

- Do plugs fit snugly into outlets? Yes  No
  Loose-fitting plugs can cause overheating and fires.

CORDS

- Are any cords cracked, frayed or damaged? Yes  No
  Damaged cords can expose wires, causing shock or fire hazard.

- Are any cords pinched by furniture or windows, or attached to anything with staples or nails? Yes  No
  Pinching and/or stapling cords can damage the insulation, causing shock or fire hazard.

- Do you use extension cords on a permanent basis? Yes  No
  Extension cords should only be used temporarily.

ELECTRIC PANEL

- Do you have recurring tripped circuit breakers or blown fuses? Yes  No
  If yes, this could indicate you’re exceeding a safe level of electrical current.

- Do you have arc fault circuit interrupters (AFCIs)? Yes  No
  AFCIs provide greater fire protection. Check your circuit breakers for the AFCI label.
During the Christmas of 2014, line workers with Cavalier Rural Electric Cooperative (CREC) were pulled away from holiday festivities to clear the power lines after a major ice event. This lineman is using a special rolling device to remove the ice – often a grueling process.

Photo courtesy of Ron Hanson.
The timing is never right. A strange freezing event blows through during Christmas, or Easter, or the linchpin football game of the season – and Mother Nature wears no team’s jersey.

“It’s the game-winning field goal and the power goes out. It’s happened,” Minnkota Transmission Superintendent Pat Helling said, recalling just one instance of the frustration that can stem from ice or frost collecting on the power lines.

In Minnkota’s corner of the world, ice buildup is a common problem that affects the lines at least a few times every winter. The cooperative’s service area, comprising eastern North Dakota and northwestern Minnesota, is home to a climate that boasts wild seasonal swings, especially around December and April.

“It’s that perfect mix of temperature and fog and rain and whatever else is going to happen,” Helling said. “The line could be basically freezing, and then the air is warm enough to rain. It just sticks.”

When the ice thickens enough, destruction swings in.

The heavy load on the wires leads to excessive sagging or a much more damaging situation – galloping wires. Minnkota Civil Engineering Manager Wayne Lembke explained that if there is a wind, it will create an ellipse-like ice shape around a normally round conductor, changing its profile.

“It tends to act like an airplane wing,” Lembke said. “You get uplift forces because of that, with the wind going over and under the conductor. It will cause it to start lifting.”

Once the lines get lift, which may only take a 5-mph perpendicular wind, they can
begin whipping and sailing in all directions. Galloping wires may slap together and induce a fault on the line, or an arc can cause a line break and a subsequent blink outage. In severe cases, the violent motions cause forces on the structures themselves that can break off post tops or crossarms.

“It’s intense, and there’s nothing you can do about it when it happens,” Helling said. “That’s the hardest part to watch – knowing you’re pretty helpless.”

Speed of destruction

Helling remembered back to Good Friday 2010, when Minnkota experienced one of its worst ice event fallouts on a transmission line north of Bismarck, N.D. He was working as a contractor at the time, but was called to support Minnkota when a semi caught a sagging conductor over the highway.

“It actually tore down the structures on both sides of the road, and then it cascaded both ways,” Helling said, pulling up digital photos of the mangled aftermath – three miles of demolished 345-kV line. “We had to take down all of the structures that were damaged and rebuild them new. I think we were out there about two weeks, straight through, until it was done.”
Sometimes the damage isn’t so instant. Galloping and vibrations over time can fatigue the conductors and the connecting hardware, shaving years off of the transmission lines and causing premature failures and outages.

“It’s weather, and we can’t control the weather,” Lembke said. “We can only design for what normally happens.”

**Beating the ice**

Lembke’s engineering team has taken steps to minimize the effects that ice has on the lines. To battle long-term vibrations, the lines are equipped with dampers that either hang from the conductor or spiral around it, absorbing the vibration.

When it comes time to build new, the design element of prevention goes deeper. Minnkota has moved to decreased line spans, increased vertical spacing and wider crossarms to keep the conductors farther apart.

“The older lines were built with 10-foot crossarms – our new standard is 12 foot,” Lembke said. “With our design software, we can actually look at the estimated ellipses of the conductor movement and make sure that, when we’re designing, those won’t be able to come in contact. They didn’t have that back in the 1940s and 1950s when we started building our system.”

Today, Minnkota follows National Electrical Safety Code guidelines to assure any new line will withstand up to a half-inch of radial ice in a 40-mph wind. If it appears the ice may push the limit without melting away naturally, it’s time for Helling to wrangle his team.

Line workers first try to hit the poles with sledgehammers to vibrate the line enough for the ice to break up. If that doesn’t work, they harness up for the bucket truck. With an insulated hot stick in hand, they hit the line until the ice falls, moving span-to-span until the problem area is clear.

If a line is deenergized, they can hang a material over the line, connect it to a four-wheeler or snowmobile and drive down the spans, pulling off the ice.

“It’s really hard work, and very time consuming,” Helling said, adding that he never hears a complaint. “The guys know it needs to be done. We’re out there for our members and we’re working for the most reliable power we can provide, so it’s just part of the job.”

Sometimes one crew is not enough. Helling said that on especially tough jobs, Minnkota’s member co-ops offer their resources and personnel to assist in clearing ice or repairing damaged lines. Even member-consumers jump in to help the team in any way possible, from providing pickups and ATVs to baking bars for the exhausted linemen.

“Our member co-ops have been hugely supportive of us, and we try to do the same for them with anything they need,” he said. “We’re out there to support them. It’s a pretty cool community all together.”

By Kaylee Cusack / Photography Submitted Photos
Those annoying blinking clocks

Don’t you just hate those blinking “12:00” clocks? Manufacturers could build in a backup system to avoid this, but that would increase the cost and you may not want to pay the extra amount for the device.

The blinking is often set into motion by the cooperative’s line safety devices used to avoid frequent and prolonged outages. The devices are called oil circuit reclosers. They operate by opening the circuit for an instant when the line is contacted by an object such as a squirrel, raccoon, tree limb blowing in the breeze, etc. The object usually frees the line on the first blink. If not, the recloser will operate two more times. If the line is still not clear, the device will shut down the power until a serviceman clears the line and closes the oil reclosers.

Thus, the safety devices either avoid outages or shorten the outage time and decrease the area affected. They also prevent damage to the line, which is another way of keeping electricity at the lowest possible cost. When the clocks blink 12:00, keep in mind the manufacturer is trying to save you money, and we are trying to provide you dependable service at the lowest possible cost.

Congratulations on your years of service at PKM Electric Cooperative!

10 years – Nolan Buchner (Journeyman Lineman)
15 years – Blake Owens (Director)
25 years – Scott Slusar (Line Foreman)
25 years – Tom Woinarowicz (Director)
30 years – Karen Olson (Administrative Manager)
35 years – Mike Schmidt (CEO)

ACH & SmartHub promotion winners

Amazon Echo: Brady Stevenson – East Grand Forks, Minn. $100 Energy Credit: Steele Bertils – Warren, Minn.

AUTHORIZATION FOR ACH (AUTOMATED DIRECT PAYMENT)

I authorize _______________________________ and the financial institution named _______________________________

below to initiate electronic entries from my checking/savings account. This authority will remain in effect until I notify you in writing to cancel it in such time as to afford the financial institution a reasonable opportunity to act on it. I can stop payment of any entry by notifying my financial institution 3 days before my account is charged.

(NAME OF FINANCIAL INSTITUTION) _______________________________ (BRANCH) _______________________________

(CITY) _______________________________ (STATE) _______________________________ (ZIP CODE) _______________________________

(SIGNATURE) _______________________________ (DATE) _______________________________

(NAME: PLEASE PRINT) _______________________________ (ADDRESS: PLEASE PRINT) _______________________________

Account Number _______________________________ Checking [ ] Savings [ ]

Financial Institution Routing Number _______________________________ _______________________________
Types of Heat Pumps
There are three main types of heat pump systems. Use the information below to determine the system that’s best suited for your climate and home.

**Air-Source Heat Pumps**
- Most commonly used heat pumps
- Moves heat rather than converting it from a fuel like combustion heating systems do
- Can reduce heating costs by about 50 percent when compared to baseboard heaters or electric furnaces
- Newer, more efficient systems now represent a legitimate space heating alternative in colder regions like the Northeast and Midwest.
*Note: If temperatures in your area drop below 10 to 25 F, you will need an auxiliary heating system (depending on the size of the system).*

**Geothermal Heat Pumps**
- More expensive to install but provide more energy savings for heating and cooling
- Move heat through pipes buried underground
- When compared to a conventional heating system, can reduce energy use by 25 to 50 percent
- Effective in extreme climates
- Not ideal for smaller lots and certain soil conditions

**Ductless Mini-Split Heat Pumps**
- Easier to install, quiet, small in size
- Flexible for heating and cooling individual rooms and smaller spaces
- No energy loss through ductwork, which accounts for more than 30 percent of a home’s energy use for space heating/cooling.
- Installation can be pricey, but federal incentives may be available

Heat pump systems should be installed by a licensed professional. Contact your local electric cooperative for more information about options and potential incentives.

Sources: Dept. of Energy and Consumer Reports

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**BE FIRE PREVENTION SMART**

**DON’T GET BURNED!**

Electricity usually makes life easier by powering kitchen appliances, gadgets and electronics we use for entertainment. However, that same electricity contains the potential to destroy homes and take lives. Electric fires are more destructive than any other type of fire, and they are twice as deadly. Safe Electricity has the following information to help you keep your electric system safe.

- Consider getting an electric inspection of your home, especially if it is an older home or you have never had an inspection.
- If an electrical fire starts in your home, do not use water to extinguish it. Water conducts electricity, and you could get an electric shock. Use an extinguisher that is approved for use on electrical fires.
- Flickering lights, warm, cracked or sparking outlets all indicate electrical problems.
- If circuits trip, fuses blow or someone gets a shock, your home has an electrical problem. Get an electric inspection.
- Do not overload outlets, use an extension cord as a permanent wiring solution, or use light bulbs that are not rated for the socket.
- Contact an electrician about installing an Arc Fault Circuit Interrupter (AFCI). An AFCI monitors the flow of electricity in your home. If the flow of electricity is irregular and could cause a fire, the AFCI shuts off electricity.
- Inspect electrical plugs and cords annually. If they are frayed or cracked, repair or replace them. Do not place cords under rugs or staple or nail them to the wall.

*Source: safeelectricity.org*
A regular meeting of the board was held Tuesday, Nov. 27, 2018.

Tom Woinarowicz, president who presided, asked for roll call. Upon calling the roll, the secretary reported that all directors were present, with the exception of Director Goodwin and Directors Aakre and Mortenson as they were attending NRECA Credentialed Cooperative Director training in Maple Grove, Minn. Director Owens participated via video conferencing.

Upon motion duly made by Director Beaudry, seconded by Director Hatton and unanimously carried, an executive session was called.

The president returned the meeting to regular order concluding the executive session at 8:48 a.m. He provided a briefing on the CEO performance discussion. The executive assistant will mail out the CEO and director performance assessments to each director for completion prior to the next board meeting with discussion to follow.

Proposed topics and dates were discussed for an upcoming planning meeting. The planning meeting will be held at the Minnoka Power Cooperative campus on Jan. 29-30, 2019, with directors and staff to attend. An agenda draft will be provided at the December board meeting.

The president reported on recent MREA activities. Government Affairs is currently meeting with legislative officials to discuss upcoming topics impacting Minnesota.

The CEO informed the directors that the next Minnoka Power Cooperative board meeting will be held on Thursday, Nov. 29.

Director Aakre emailed the Square Butte update prior to the meeting due to his attendance at the NRECA Credentialed Cooperative Director courses.

The manager of operations presented the monthly safety report, indicating no accidents and no lost time. MN Safety performed crew visits on Nov. 1, 2018, MREA will be on-site to complete the 2018 scheduled safety trainings on Nov. 28, 2018. The 2019 safety training schedule will soon be drafted with MREA and MN Safety. Director Malm recapped the Safety Committee meeting that was held immediately following the October board meeting. He acknowledged the invaluable safety training programs in place and their direct impact on the cooperative.

The manager of operations continued his monthly report on activities in the line department. EIR, PKM’s OCR maintenance contractor, arrived on Nov. 5 to begin construction practices continue to mitigate outages. The donation request from the Alvarado Fire Department was discussed and the donation and a meeting with Mark Doyle held earlier this month regarding capital credits.

The administrative manager continued with the presentation of the Operating and Financial report for the cooperative. She provided comparisons from the current and previous year, noting the impact of the recent storm in October.

The CEO reported on a recent meeting with the member services manager and a member regarding proposed construction of a housing development near Crookston. He also provided a recap of the MREA Legislative Summit conference call he participated in and a meeting with Mark Doyle held earlier this month regarding capital credits.

The donation request from the Alvarado Fire Department was discussed and the donation and setting services of a 45-foot pole for the installation of a new siren was approved.

**Apply now for a PKM Scholarship**

Individuals in PKM’s service area who are members of the cooperative, their spouses or children.

- Applicants planning to attend an accredited postsecondary educational institution in pursuit of their initial postsecondary degree. These institutions could include technical colleges, universities or colleges.
- Eligible applicants include high school seniors, active college students enrolled in an accredited institution in pursuit of their initial degree and nontraditional students who are initiating or resuming their initial postsecondary degree. Nontraditional students include “older than average students” or individuals who did not begin a program after high school. This could also include students whose first postsecondary degree was interrupted.

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Where your power comes from

### Statistical and financial report

**Year-to-date: December 2018**

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<th>Last Year</th>
<th>This Year</th>
<th>Budget</th>
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<td>Total income</td>
<td>$14,266,149</td>
<td>$14,611,795</td>
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<tr>
<td>Total expense</td>
<td>$13,970,901</td>
<td>$12,706,442</td>
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<td>Net operating margins</td>
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<tr>
<td>Total kWh sold</td>
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<td>Avg. kWh sold per member</td>
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<td>Average sale price per kWh</td>
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<td>Percent kWh sales increase</td>
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<td>Members billed</td>
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<td>11%</td>
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<td>Coal</td>
<td>67%</td>
<td>55%</td>
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<tr>
<td>Wind</td>
<td>19%</td>
<td>34%</td>
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<tr>
<td>Other</td>
<td>3%</td>
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Meet prior to the annual meeting for the purpose of nominating candidates to the board of directors. The board of directors caucus and with completion of their caucus, selected members.

The board selected the following members to act as the committee on nominations prior to the 2019 annual meeting procribed by the bylaws: Todd Johnston, Angus; Merle Stinar, Warren; Ronald Goodyke, Euclid; Gary Jensen, Drayton; Jason Sobolik, Drayton; Carey Mortensen, Kennedy; Brian Jensen, Stephen; Alvin Nybladh, Stephen; Stanley DeMeyer, Warren. The nominating committee will be reimbursed a $25 fee and mileage for their attendance.

Board resolution is required to approve the administrative manager, Karen Olson, as an authorized signatory for CoBank business.

The board certified administrative manager Karen Olson as an authorized signatory for CoBank agreements, notes, instruments and other documents required for transacting business on behalf of PKM Electric Cooperative, Inc.

The topics for the upcoming planning meeting were confirmed. The CEO reminded the Directors with ACRE moving to a calendar year, that membership dues for ACRE and REPAC can be accepted at this time. Finally, the meeting concluded with presentation of subsidiary financials.
If your electric blanket has seen its better days, especially if it’s a decade old or more, it’s time to replace it. Throw it out and don’t donate it, as it could be a fire hazard. Older electric blankets are more apt to be worn through or damaged, and they and their 100 feet of wiring account for thousands of worldwide injuries and deaths each year.

Fans of toasty and warm beds should inspect their electric blanket frequently, regardless of its age. Occasionally, a newer blanket or even one that’s fresh out of the bag, could have a wiring issue, so always test your blanket before using it for the first time, and once you start using it, inspect it often.

When inspecting your plug-in blanket or throw, the U.S. Consumer Product Safety Division recommends looking for cracks or breaks in wiring, plugs and connectors. Also look for dark, charred or frayed spots on either side of the blanket. If your electric blanket has any of these characteristics, throw it away, as it may be a potential fire hazard.

When purchasing a new one, make sure it has been tested by a reputable testing laboratory such as Underwriters Laboratories (UL). Also be sure to read and follow the manufacturer’s instructions. When using, it’s better to warm your bed with the blanket before going to bed (don’t leave it unattended, though), and turn it off before climbing in.

Safe Electricity reminds you even if your electric blanket is in good shape, it still requires a little extra care compared to a traditional blanket:

- Don’t allow anything on top of the blanket when in use, like a comforter, bedspread or even pets, which may cause the blanket to overheat. In addition, pet claws can cause rips and tears, which may expose the wiring and create shock and fire hazards.
- Do not use an electric blanket that is wet, soiled or wrinkled.
- Do not tuck in an electric blanket, which can cause excessive heat build-up.
- Don’t store the blanket folded; instead, roll it for storage, which puts less stress on the internal wires. A better option is to store flat if you can, such as on a spare bed.
- Do not leave any heating appliance unattended.
- Don’t wash it often. Repeated washings can damage the electrical circuitry. (Follow proper instructions when washing; usually the spin cycle is not recommended.)
- Do not sleep or lounge on top of the electric blanket.

Learn more about heated appliance safety and other safety tips at www.safeelectricity.org.