

Planning for your electrical needs

BY PATRICIA STOCKDILL

Planning a new home, farm shop or outbuilding is all about details, details, details – design, windows, doors, materials and the list goes on and on.

It involves numerous decisions, working and coordinating with an array of people – everyone from the local lumberyard to electricians, plumbers, perhaps a contractor and designer, and, yes, the list goes on and on.

Close to the top of that list should be a visit with folks at McLean Electric Cooperative (MEC) to help coordinate one's electrical needs, whether it's new construction or simply adding another building, constructing an extra room or remodeling. Each one could likely change a member's electric needs and usage.

Working early with McLean Electric also helps the cooperative plan for its

needs in the coming year.

"We have to order materials," MEC General Manager/CEO Marty Dahl described. "We order materials in February ... to get the best prices. We always do upgrades in people's yards as they grow."

For example, a 50-amp electric service used to be a common service a few years ago. Today, most people use at least 200 amps, and 400 amps is likely to be the most common service.

New McLean Electric members will first visit with Member Services Communicator Sonja Moe, getting an application for McLean Electric to provide their service and information regarding the cooperative's policies, programs such as water heater off-peak and electric heat rate programs and water heater and heat pump rebates, for example.

"So they know all of the things we

can do for them," Dahl explained.

Moe will also discuss different heating and cooling options with new members. The electric heat rate offers excellent savings opportunities. "I think that is our top-of-the-line program," Moe added.

Members with electric heat pay 5.5 cents per kilowatt-hour (KWH) through the heat rate program from Oct. 1 through April 30, compared to McLean Electric's standard rate of 11.24 cents per KWH.

All of McLean Electric's programs and services, along with an application for membership, are available on the website, www.mcleanelectric.com, Moe added.

New members also receive a packet of information detailing a brief history of McLean Electric, payment options, electric safety and energy-savings tips, and other information.

Once signed up as a new member, the member visits with MEC Billing Supervisor Tonya Graeber, who explains the cooperative's billing program and components of a statement so the member knows how to read and interpret the array of information, including usage, on a monthly statement.

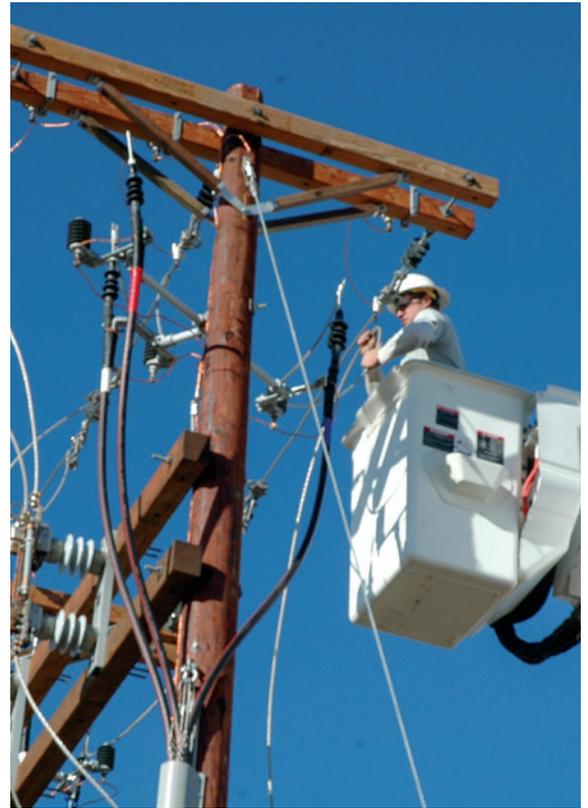
From there, McLean Electric's engineering and staking department comes in to design the system bringing in a new service.

"And then McLean Electric Operations Manager Keith Thelen gets involved after engineering to build it," Dahl concluded.

It's a good idea for existing members to also visit with McLean Electric when planning expansions or additions so they – and the cooperative – can stay abreast of everyone's electric needs. ■



PHOTOS BY PATRICIA STOOKILL



The construction of this transmission line going to northwestern North Dakota enabled McLean Electric Cooperative, Central Power Electric Cooperative and Basin Electric Power Cooperative to make plans to upgrade a transmission line in the Washburn area in 2018.

Part of McLean Electric Cooperative's work plan involves Central Power Electric Cooperative's upgrade to a transmission line between Max and Benedict, along with three-phase upgrades on McLean Electric's line. Power line upgrades on the transmission and distribution end alike help McLean Electric Cooperative continually strive to improve service and reliability.

Upcoming work plans

McLean Electric Cooperative (MEC) also plans ahead when it comes to construction, with four-year and annual work plans. In recent years, McLean Electric has averaged about \$3 million annually in work plans, which is what is slated again for 2018.

Several line upgrade projects are scheduled for 2018 involving MEC and one of its wholesale transmission suppliers, Central Power Electric Cooperative, MEC General Manager/CEO Marty Dahl described. "It has to do with growth and people's usage," he added.

What's on tap:

Upgrades to Central Power's transmission line from the Washburn substation to the Blue Flint Ethanol plant, which also carries the electric load for Great River Energy's pumps and used to pump cooling water for Coal Creek Power Plant. The project is in conjunction with McLean Electric's main wholesale generation and transmission provider, Basin Electric Power Cooperative (BEPC).

The project's first priority is to improve power quality, Dahl explained. BEPC is assisting because it helps lower fees paid for a transmission line in the MISO, Midwest Independent System Operator, area. The new line eliminates what is called a pancake rate, Dahl described. Ottertail Power Company is in MISO and McLean Electric currently uses their line to feed that area.

Central Power is also upgrading its 115-kilovolt transmission line from Max to Benedict. A transmission line going to Parshall built to service the energy industry opened up an opportunity for Central Power and McLean Electric to improve reliability in the Max and Benedict area and provide cost savings.

In addition, the upgrade provides opportunities for future benefits and growth, Dahl continued. The current line from Max to Benedict is on the end of an Otter Tail Power Company's transmission line.

Both transmission projects spell big news for McLean Electric and its members in those areas for improved reliability.

Other smaller scale construction plans include replacing six miles of three-phase line near Crooked Lake, costing approximately \$500,000, another \$345,000 for an additional four miles of three-phase, and \$300,000 in pole change-outs. ■

Determining your needs

McLean Electric Cooperative Master Electrician and Metering and Technical Services Representative Anne Brawley provides some tips on what to consider when determining electric needs in new construction or remodeling:

As people use an increasing amount of electricity for everything from smart televisions to plugging in an array of electronic devices, nowadays it's almost as cheap to put in a 200-amp service as a smaller one.

"Two-hundred (amp) should be a minimum," Brawley suggested. It's the most common service in today's residential construction industry and for that reason, material costs are similar to smaller services.

Take a hard look at the variety of heating and cooling options, Brawley continued. While ground-source heat pumps are a quality, efficient heating and cooling source, they tend to work less effectively as a stand-alone heating or cooling source given North Dakota's climate. Consider a secondary source to boost a ground-source system, Brawley advised.

On-demand or inline water heaters take up significantly less space than a common 80- or 100-gallon water heater, but homeowners need to consider their electric demand when it kicks in to heat water.

"Sometimes they're (on-demand water heater) like a 24-kilowatt boiler," Brawley described, for the amount of electricity required to start the unit.

They use a significant amount of electricity instantly, she



PHOTO COURTESY RINNAI

On-demand or tankless water heaters have a space savings advantage. However, because they heat water in the short time the water travels through the unit, the heaters require a large amount of electricity in an extreme short time. Depending on the size of the unit, McLean Electric Cooperative Master Electrician and Metering and Technical Service Representative Anne Brawley said some units require a 200-amp service.

continued, and depending on the system, could require a 200-amp service just for the on-demand system. Keep in mind that the water is heating to twice the temperature in the fraction of time it's passing through the heating unit, Brawley added.

There are also propane or electric on-demand water heaters, but either kind takes a huge burst of electricity to start heating water.

It's also important to plan ahead, Brawley recommended. Admittedly, a 200-amp service may seem too large and costly for one's current needs. However, think back to what a person's electric use was just 5 or 10 years ago and the amount it may have increased in today's time.

Think about what a person may want to do in the coming years – especially if planning new construction. Is there a hot tub in the future? How about an outdoor living center?

"If you're trenching now, throw in an extra set of wire conductors," Brawley offered. Then the wire is in place to meet a potential growing electric

demand in the future.

Ask yourself what you hope to have in the coming years. It's cheaper now to plan for it than it would be to retrench a few years down the road.

In addition, Brawley said people should consider whether or not they will add a backup heat source in the event of extended outages. While propane is a good backup, fans still require electricity to operate.

What appliances will be installed are another consideration when determining electric needs.

From a safety standpoint, homeowners need to pay attention to North Dakota State Electrical Board regulations and state laws regarding home wiring, Brawley emphasized. For example, any work costing more than \$500, all mobile homes and any service alterations require wiring certificate from an electrician.

Go to the Electrical Board website link, www.ndseb.com/laws-rules/, and click "2017 Laws, Rules and Wiring Standards" for a

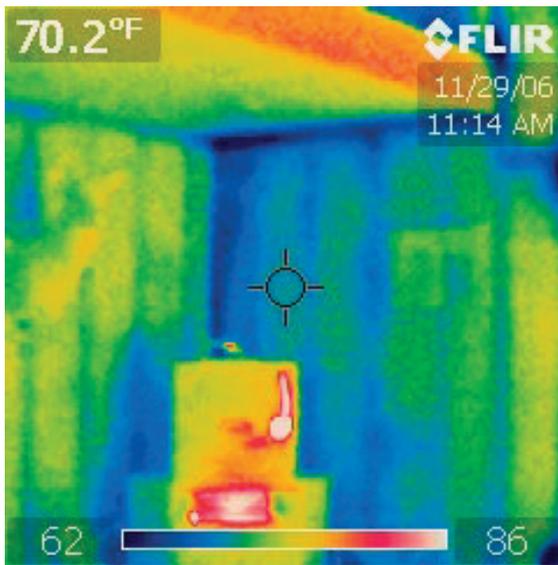
downloadable file of requirements that went into effect July 1, 2017. Two areas are of particular importance, she said: Under Section 24.1-05-01-01, Item 2 lists requirements before work commences and Item 6 details self-wiring requirements. ■



PHOTO COURTESY OF HOME DEPOT

McLean Electric Cooperative offers a water heater rebate program and \$7 monthly bill credit for members participating in the off-peak water heater program. Go to McLean Electric's website, www.mcleanelectric.com, and click "Products and Services" to learn more about the array of cost-saving programs available to members.





The imagery may appear as if it came from a children's coloring book, but homeowners who have an energy audit can identify, based on colors, where they may or may not have energy heat loss. The interior image of the southwest side of this home shows the degree any heat is escaping, which allows the homeowner to know where to add more insulation, for example, to reduce heating costs. McLean Electric Cooperative (MEC), in conjunction with Basin Electric Power Cooperative, can arrange for a free energy audit for MEC members.

Energy audit points to savings

Audits don't usually conjure up pleasant images, but this audit can bring pleasing results: An energy audit, that is.

McLean Electric Cooperative (MEC), in conjunction with Basin Electric Power Cooperative, provides free energy audits for homeowners. An energy audit can help determine areas where energy escapes through a building, such as poorly insulated attics or around windows.

This is an audit that can save a person some money.

Basin Electric Power Cooperative has trained technicians and provides a special infrared camera with heat sensors for McLean Electric members who are interested in having an energy audit. It identifies areas where energy is escaping by color variations.

"Corners, windows, peaks. We can definitely scurry up into your attic and take a look at it (for energy loss)," described MEC Master Electrician and Metering and Technical Services Representative Anne Brawley.

The best time for an energy audit is a day with extreme hot or cold temperatures because the camera shows energy loss better. "People will be able to see it (energy loss) with that camera," Brawley. "And it doesn't hurt to do it on new construction."

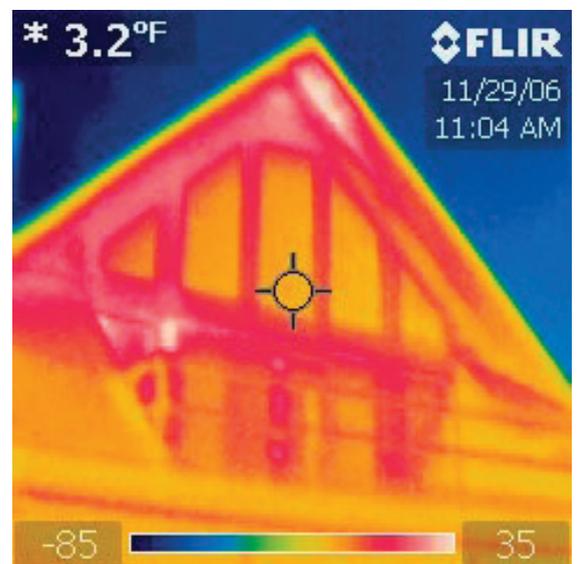
The energy audit is free. "We do it as a service. We want people to know where their power is going," MEC General Manager/CEO Marty Dahl explained. "When your bills are high, sometimes we can show you what you can do to lower the bills," he added.

Not using a plug-in space heater in a room can be a huge energy saver, because the heaters aren't on the cheaper winter heat rate. An audit can show where heat loss occurs around windows and doors, for example.

However, because Brawley coordinates with Basin Electric Power Cooperative for camera and technician availability, she suggested that anyone interested contact her. MEC and Basin will work to arrange a day and time that works for everyone, including the homeowner. Brawley can be reached at McLean Electric, 701-463-6700, 800-263-4922, or by email at annemawley@mcleanelectric.com. ■



From the exterior, the upper level of this house looks toasty warm on a cold November day. However, an infrared camera can help homeowners determine if there is any energy loss through the massive windows, doors and glass during an energy audit.



An exterior infrared view of areas of potential heat loss in a home. Varying colors of the color spectrum indicate the degree of heat loss, although an exterior photo such as this has additional factors such as the heat from the sun reflecting on the balcony and siding on the south-facing wall.

Employee spotlight:

Sonja Moe

BY PATRICIA STOCKDILL

McLean Electric Cooperative's newest employee may be a familiar face to some McLean Country agriculture producers – Sonja Moe.

Moe worked with the U.S. Department of Agriculture Farm Services Agency in Garrison prior to joining McLean Electric (MEC) in August 2017 as the cooperative's new member services communicator.

New McLean Electric members will work with Moe as she introduces them to the cooperative, explains its various electric programs and services, and helps address questions they may have when first becoming an MEC consumer-member.

Moe also works with existing members. For example, she can also explain the various rebate and energy saving programs when consumers replace or upgrade appliances such as water heaters or the discounted electric heat rate during winter months when installing electric heating systems.

In addition, she is the face behind McLean Electric's social media presence on Facebook and Twitter and updates its website, www.mcleanelectric.com.

In many instances, Moe will be the face of McLean Electric representing the cooperative and meeting people at area ag shows and attending chamber of commerce and business organizations' meetings in communities throughout McLean County.



PHOTO BY PATRICIA STOCKDILL

Sonja Moe joined McLean Electric Cooperative in August 2017 as the cooperative's member services communicator.

She will also help coordinate McLean Electric's annual meeting, work with Operation Round Up and organize the cooperative's Youth Tour essay contest and scholarship program for high school students. Basin Electric Power Cooperative partners with rural electric cooperatives in North Dakota in the scholarship program.

"I'm a liaison for members with various McLean Electric departments," she summarized.

Originally from Hazen, Moe and her husband, Curtiss, lived in Bozeman, Mont. for 18 years before returning to their home state of North Dakota to be closer to family. They also liked the idea of having their children attend a smaller school district.

"Garrison has been great and we love the lake," she exclaimed. They have lived along Lake Sakakawea for nine years.

Curtiss owns Garrison Furnace and Stove, a full-service heating, cooling,

fireplace and ground-source heat pump installation and service company, in addition to duct cleaning.

Their son, Conner, joined the company as its service technician. Their daughter, Madeline, is a senior at Garrison High School.

Sonja brings more than 20 years of experience of a strong business background to her role as member services communicator, working as an executive assistant for the vice president at Montana State University prior to returning to North Dakota, as well as having business manager and business ownership backgrounds.

Already, Sonja enjoys working with the consumers she has had the opportunity to meet in her new duties and appreciates the cooperative "family" of co-workers and support throughout the cooperative system as she settles in as member service communicator. ■



GROUND-FAULT CIRCUIT INTERRUPTERS

PREVENTING ELECTROCUTIONS SINCE 1973



Ground-fault circuit interrupters (GFCIs) are special outlets that have saved thousands of people from electrocution over the last three decades. If GFCIs were installed in older homes, experts suggest that 70 percent of the electrocutions that occur each year in the home could be prevented.

GFCIs are electrical safety devices that trip electrical circuits when they detect ground faults or leakage currents. A person who becomes part of a path for leakage current will be severely shocked or electrocuted. These outlets prevent deadly shock by quickly shutting off power to the circuit if the electricity flowing into the circuit differs by even a slight amount from that returning.

A GFCI should be used in any indoor or outdoor area where water may come into contact with electrical products.

Since the first introduction of GFCIs in homes, there has been an:

83%

DROP in electrocutions



95%

DROP in electrocutions from consumer products



The Consumer Product Safety Commission estimates that:



47%

of current electrocutions could be prevented with proper GFCI protection



50%

of American homes were built before the introduction of GFCIs



There are potentially **43 MILLION** American homes without GFCI protection

WAS YOUR HOME BUILT BEFORE 1976?

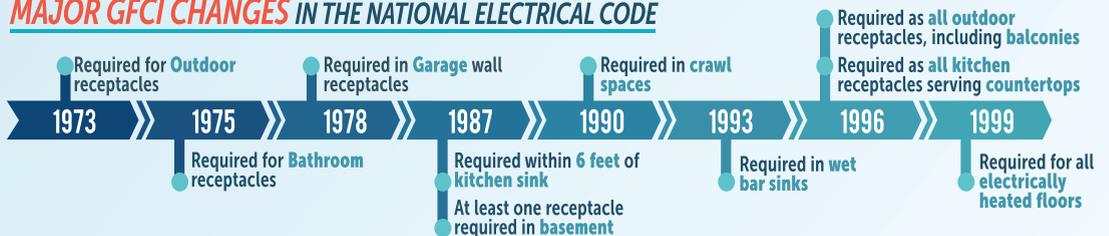
Have a qualified electrician inspect your electrical system to ensure it's up to code.

THE IMPORTANCE OF A QUALIFIED ELECTRICIAN

Call a qualified electrician if you have:

- Frequent problems with blowing fuses or tripping circuit breakers
- A tingling feeling when you touch an electrical appliance
- Discolored or warm wall outlets
- A burning or rubbery smell coming from an appliance
- Flickering or dimming lights
- Sparks from an outlet

MAJOR GFCI CHANGES IN THE NATIONAL ELECTRICAL CODE



CURRENT REQUIREMENTS IN THE 2017 NATIONAL ELECTRICAL CODE



Power down your energy bill

You may have finished working, but your laptops and PCs in the home office are contributing to your electric bill.



On or off?

Ensure power management features are enabled so your computer monitor will automatically go into sleep mode after a period of inactivity. Of course, a desktop or laptop computer can still suck 15-21 watts when idle. Turn it off instead and save even more electricity. Here are some general guidelines when deciding to turn off your personal computer:

- Turn off the monitor if you aren't going to use your computer for more than 20 minutes. Many computers available today come with a sleep mode or power management feature. Using these features will save you up to \$30 each year on your electricity bills. Enable the power management features when a computer is purchased. *Note that screen savers are not energy savers.*
- Turn off the computer if you're not going to use your PC for more than two hours. Most PCs reach the end of their "useful" life due to advances in technology long before the effects of being switched on and off multiple times have a negative impact on their service life. The less time a PC is on, the longer it will "last."

Use a power strip

Make sure your monitors, printers and other accessories are on a power strip/surge protector. When this equipment is not in use for extended periods, turn off the switch on the power strip to prevent them from drawing power even when shut off.

Many appliances continue to draw a small amount of power when they are switched off. These vampire loads occur in most appliances that use electricity, such as DVD players, TVs, stereos, computers and kitchen appliances. Unplug battery chargers when the batteries are fully charged or the chargers are not in use.

BE PREPARED FOR WINTER'S WRATH

McLean Electric Cooperative strives to provide you with reliable, uninterrupted service every day of the year, but sometimes Mother Nature creates unavoidable power outages. McLean Electric Cooperative wants you to remain safe during severe winter weather, so consider preparing now for the possibility of power outages this winter.

STAY AWAY FROM DOWNED POWER LINES

Mother Nature isn't always kind to power lines. Winter winds, snow and ice often prove to be too much for utility poles and power lines. If you see a downed power line or utility pole, contact McLean Electric Cooperative immediately. Do not go near the line or the pole. Just because it's on the ground doesn't mean it's safe to approach.

TO REPORT AN OUTAGE

Because power outages can't be totally eliminated, McLean Electric Cooperative offers these steps to follow if an outage occurs:

- Confirm the outage. Check your own fuses and circuit breakers first.
 - Check with a neighbor to confirm if he or she is also experiencing an outage before you call the cooperative. This will help your cooperative determine the extent of the outage.
 - Call the cooperative. If the outage is widespread, the phone lines may be busy, but keep trying. Your cooperative will send a line crew to find the problem and restore power as quickly as possible.
- If you have additional questions about outages, please call McLean Electric Cooperative.

DURING AN OUTAGE

To prevent an overload on the system while power is being restored, take these steps:

- Turn off every inside light except one.
- Turn down your thermostat.
- If the outage lasts more than 60 minutes, turn off your electric water heater.
- Make sure your kitchen range is off, both the surface and the oven.
- Turn off all unnecessary appliances and unplug sensitive electronic equipment.
- When power comes back on, slowly switch your appliances and lights back on and gradually return your thermostat to its normal setting.

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