

Words on the wire

New substations ensure a continuing strong source of power



Alisha Anker
General Manager

Development of new substations for service to the Menard Electric system is not a common occurrence. Matter of fact, for those who like to draw correlations to the frequency of events, this one may rank right up there with the last time the state had a balanced budget! Yet, I'm pleased to announce the time has come. The new delivery point will be our 18th distribution substation, and to make the point very clear, it's been over 25 years since #17 was constructed in a corner of Manito Township to accommodate growing load in that area.

Electric system planners consider many variables when choosing to build new versus upgrading existing substations. In this case, the decision to build is primarily driven by aggressive three-phase irrigation load growth and the loss of nearby electric generation sources leading to the need for increased voltage support in our northern region during peak load conditions. Such support can come from only a few solutions. The new substation and its power source, which I will also briefly discuss here, is the most feasible long-term solution.

The new substation will be located just west of Kilbourne on a 1.1-acre greenfield farmland site. As is the case with all Menard substations, our power supplier (Prairie Power) is responsible for purchase of the land, design, procurement and construction as they ultimately own the substation. Operational jurisdiction transitions to the cooperative at what we call the "low bay," where delivery to the members originates.

Design features include modern, state-of-the-art equipment, a

safety-oriented configuration, under-voltage protection and ample capacity for growth. The automatic under-voltage protection scheme is of particular interest because it will help mitigate member equipment damage from a partial power event at the source.

Once complete, Menard will reconfigure the nearby distribution system, effectively transferring some members

now served from our existing Saidora and Poplar City substations to the new Kilbourne Sub. Coincidentally, the site selection is positioned between these existing substations and will decrease miles of line exposure for each circuit. For members served from these circuits, this means less interruptions and fewer annoying blinks.

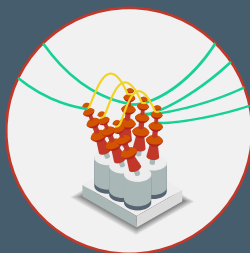
The project schedule is of course fluid;

A Field Guide to Power Delivery



High-Voltage Transmission Lines

High-voltage transmission lines are used to deliver electricity from generation plants to distributors such as Menard Electric. As the G&T, Prairie Power is responsible for the transmission function. They own transmission lines energized at 69kV and 138kV, and they also purchase transmission services from other transmission owners for energy delivery to our co-op.



Substations

Transformers at distribution substations reduce the voltage from transmission levels to distribution levels, typically 12,500 volts for the Menard system. Prairie Power owns and maintains these substations. Menard Electric takes responsibility at the low-voltage side of the transformer.

The Menard Electric system has 17 distribution substations and 1 sub-transmission substation for an industrial site member.



Distribution Lines

The lines typically seen along rural roads and next to homes are distribution lines consisting of one, two, or three phases, each energized 7,200 volts phase-to-ground. Transformers on the power poles at member locations lower the voltage to a safe level, between 120 and 480 volts, to serve residential homes and small businesses.

The Menard Electric system consists of 2,600 miles of overhead and underground distribution lines.

however, Menard staff expects release of the preliminary designs this summer, with procurement and construction to follow later this year. Acquisition of right-of-way corridors for the transmission line feeding Kilbourne Sub have been on-going for some time and more corridors are being acquired.

Prairie Power will be responsible for the construction, commissioning and transmission integration. Menard's Engineering Manager Brady Smith will lead the team here to design circuit loading, integrate meter-reading communications and more. "We will install equipment and software using the latest technology so that we can incorporate more advanced protection and coordination schemes as well as bring back more detailed loading data quicker," says Smith.

In addition, several miles of existing line will be rebuilt with larger conductor by Menard crews to accommodate the interconnection of the new sub with our system.

As for the transmission source to Kilbourne Sub, members in Mason County may recall the Zoning Commission's public hearing in

mid-February to discuss an application filed by Prairie Power to site a new interconnection substation. On 11.1 acres of pasture ground just west of Poplar City, Prairie Power is now approved to build a substation which will interconnect to

"We are long overdue for another feed into the northwestern side of our territory."

- Brady Smith

the existing 138,000-volt line owned by Ameren Illinois in that area.

This substation will be named Grand Island, which I realize is not in the vicinity of Grand Island, the island. There's something to be said about how engineers set their sights on land and a name – sometimes the name sticks, but the site does not. Nevertheless, and names aside, Grand Island will effectively serve the Kilbourne Sub approximately 12 miles away in addition to the existing Poplar City and Topeka substations in that region.

Speaking of infrequent events, it was over 35 years ago the Menard Electric system last gained a dedicated interconnection to a 138kV transmission source. The existing distribution substations in

this area are now weakly sourced from Ameren Illinois 69kV facilities.

"We are long overdue for another feed into the northwestern side of our territory. Over the last several years, we have experienced increased problems with the incoming voltage to several of our distribution substations in this area, as well as the reliability of the feeds. Recently, transmission system reconfigurations made by Ameren have resulted in our inability to perform line switching when we need to back-feed circuits. The addition of a new, dedicated power source as well as another distribution substation will provide us with a level of redundancy that will allow us to more safely restore power to members affected by a substation outage," says Smith.

It goes without saying that when this project is complete, the northern region will have a stronger source, better operational flexibility, higher available load capacity and greater reliability.

Until next time, best wishes for a joyous Easter holiday and pleasant spring season. Stay safe in the fields while planting, and most of all be aware of those overhead power lines.

Planting safety for farmers

- **Look up! Take notice of our lines running along rural roads and field edges.**
- **Maintain a 10-foot minimum distance between equipment and lines. That's below, to the side, and above lines.**
- **Inspect entrances to fields to ensure adequate clearance.**
- **Always use a spotter to help verify clearance from a better vantage point.**
- **Visit www.safeelectricity.org for more.**



Board of Directors

9 Directors
w/over
148 yrs
experience serving

3 year terms
elected by & from
members at our
Annual Meeting.



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This institution is an equal opportunity provider and employer.



Lineman Appreciation Day April 9

The men in our operations department endure long hours in cold, hot, rainy, stormy and flooded environments to provide you safe, reliable power.

Want to thank a lineman? Send a note to info@menard.com, comment on our Facebook post April 9, or send to P.O. Box 200, Petersburg, IL 62675.

Co-op Corner

Communicate, plan ahead, be observant, and more tips from Operations

When the Operations Department was asked to provide an article for Co-op Corner, I couldn't think of a better group of guys to interview, myself included. We wanted to offer some tips on how members can stay safe, help keep employees safe, and help us provide reliable service.

- Safety for our employees and members is always our foremost concern. Please drive slowly and cautiously around all utility workers. We have signs and flashing strobe lights on each truck throughout our work zones.
- Please do not touch or allow children to play on or near our facilities on or around your property.
- Call our office if you see or hear something strange on our lines or equipment.

- We strive to provide reliable service; however, outages do occur. Do not hesitate to use our new mobile app or pick up the phone to report an outage. If you have power but have seen a broken pole or other damaged facilities, please contact us. Do not assume a problem has been reported and/or fixed; too many calls are better than no call at all.

Now, here are some additional tips from each of our Area Servicemen:

Dwaine Heyen

Be observant of your surroundings; please report outages and anything that can cause problems. Also watch out for line clearance when working with large equipment.

By Dalton Whitley, Operations Manager

Seth Parker

During storm damage situations please be mindful of utility workers and downed equipment.

Troy Shafer

Even though we strive for no outages, sometimes mother nature wins. I suggest having a backup plan and a generator. When the time comes that there is an extended outage a generator will more than pay for itself.

Robb Hanner

Let us know before the day you need a new service put in and call JULIE before digging. Also keep your phone number, address, etc. up to date with the office.

Matt Wassell

Accurate communication from members is key to quickly and properly fixing outages or other problems.

Board highlights

For full minutes visit www.menard.com or contact the office.

January 23, 2018

- Present were Directors Jay Frye, Warren Goetsch, Gary Martin, Donald McMillan, Michael Patrick, Dennis Ryan, Roy Seaney, Jodine Tate & Steven Worner, Manager Alisha Anker, Attorney Charles Smith & Prairie Power Inc. Chief Technology Officer Joe Smith.
- Smith: Gave presentation on Menard's use of technology services from Prairie Power, Inc.
- Anker: Reviewed balance sheet, budget, rebate, outage, safety, operations, security, capital credit estates, irrigations, OMS training & synopsis of co-op's accomplishments in 2017.
- Anker: Gave December financial report.
- Year to date margins \$1,947,306 compared to \$2,150,678 last year. End of December equity 39.81%. Served 10,894 member accounts. Net utility plant \$47,596,138 compared to \$45,725,534 last year. Co-op meets requirements of RUS, FFB, NRCFC & CoBank.
- Anker: Reviewed NRECA Employee Benefit Audit Engagement Letter. Motion carried to hire current Auditor Kevin Kelso & authorize President to execute letter.
- Goetsch: Reported on AIEC activities.
- Martin: Gave Prairie Power, Inc. report.
- Board approved ByLaw Policy Committee recommendations to change late fee minimum fee to \$3.00 or 3% of the bill to start with the 7/1/18 billing. Board tabled proposed changes to Bylaws Section 4.02 regarding qualifications of directors & recommended no changes be made to Section 4.05 regarding district boundaries.
- Motion carried to retire \$640,000 in Capital Credits in 2018; \$470,000 as a general retirement & \$170,000 as estate retirements.
- Anker: Discussed Co-Bank No Barrier USA Program.
- Patrick named CFC Annual Meeting Delegate; Ryan named Alternate.
- Board entered into executive session; reconvened.

Annual Meeting is Thursday, June 14th

PORTA High School,
Petersburg

**Dinner • Friends • Attendance Gift
Prizes • Director Election**

Petitions for Districts 2, 5 & 9 due April 30.

Information was printed in last month's issue. See www.menard.com for details or stop in our office to pick up a petition.



Trivia Night



**Thursday,
April 19th**

**6 p.m. – Doors Open
7 p.m. – Trivia Begins**

**New Salem Roots
14305 State Hwy 97
Petersburg, IL**

Brought to you by



Proceeds benefit the Co-op's
2018 Children's Holiday
Wishes Angel Tree

PRIZES



1st - \$320



2nd - \$160



3rd - \$80



Teams up to 8 per table
\$10/person
Individuals welcome



Walk-ins welcome as space allows
Bring your own snacks



To reserve a table

- email info@menard.com
- or call (217) 632-7746

Highest scoring team representing a
co-op business member wins
a free full-page color ad on this page in a
2018 Menard Electric edition (limitations apply).