MENARD ELECTRIC COOPERATIVE
A Touchstone Energy® Cooperative
ConnecT

Reliability Challenges as Power Supply Tightens

Alisha Anker
General Manager

Members may recall that prior to coming to Menard Electric, I worked for our power supplier Prairie Power, Inc. My role was key in managing many interactions they have with the regional wholesale energy market.

I am dating myself here, but the experience I have with these wholesale markets was spurred in the late 1990s when FERC approved a standard market design. Some enjoy reading cheesy romance novels in their spare time, I have instead for decades geeked out at reading FERC Orders and rulings concerning such markets.

In each wholesale energy market region, a complex network of electricity generators, multitude of loads, and thousands of miles of transmission lines operate in synch to try and ensure enough electricity is available every hour of every day of every year, when we need it. Each market has an objective to promote efficiencies in power delivery while maintaining system reliability. This objective is becoming harder and harder to accomplish as the nature of our grid evolves.

Electricity generation (supply) and the load (demand) must always match instantaneously in real time, while not overloading the network of electric transmission facilities which comprise the grid.

Any imbalance in load and generation whatsoever, may cause the grid to collapse. Accomplishing the mission is really a matter of electrical physics, sound engineering, and proactive action.

Regional transmission organizations (RTOs) coordinate, control and monitor the electric grid across several states in a region. Think of them as energy traffic managers on an interstate highway system, regulating the number of cars – in this case, units of electricity – to a destination. In our area, the regional transmission organization is the Midcontinent Independent System Operator (MISO) which covers 15 U.S. States and the province of Manitoba.

Each day, and days in advance of each day, the reliability coordinators at MISO assess the risk an imbalance may occur and take measures to mitigate that risk. Mitigation measures may include pre-committing generation assets that require extended start-up times or temporarily delaying a generator from entering a planned outage. Again, the goal of the RTO is to deliver reliable cost-effective electricity across the grid each hour of each day.

> ***"As we transition away from carbon, it will be very important to monitor and control the pace of change"***

Despite excellent planning and coordination, in rare cases the possibility of an imbalance condition becomes imminent. In such cases a call for rolling power interruptions or rolling blackouts, such as those experienced by Texas consumers during the February extreme cold weather event, may be made. These events are referred to as Energy Emergency Alerts, so-called "max-gen" events, when supply (electric generation) can fall short to the point of being on the verge of not keeping up with actual and future demand (load) forecasts. In the MISO region, there were six max-gen events called from 2006-2016. Since 2016, there have been 15, including three last July and August alone.

The factors underlying each of these events were unique, however with the move away from dispatchable carbon-based generation resources (coal and natural gas), much of the newer replacement generation has been and will be renewable-based (solar and wind). These types of electricity supply resources have been included in the energy profile for many decades, yet only in the past several years have they attributed to a noticeable share of the total supply.

Renewable resources are of course controlled by nature instead of people, which leads to a complication when it comes to dispatching their output in a balancing equation. As storage and other dynamic technologies develop, become more affordable, and accommodate large-scale needs, renewable resources must also be redesigned to fulfill the need to balance dynamically-changing loads on a day-to-day basis, not to mention during extreme weather events.

For many hours of the February coldsnap in our State, approximately 75% of the power supply mix was provided from carbon-based generation assets. As we transition away from carbon, it will be very important to monitor and control the pace of change, for the good of the grid and the continuance of a quality of life our member-consumers have come to enjoy. This transition will be a challenge. It will be complex. It will include new large-scale alternatives and advances in energy storage.

Until such enhancements are feasible, the resources of today's energy fleet - coal, natural gas, and nuclear energy facilities - must continue to operate. Diversity is key in any portfolio, especially an energy portfolio. Embracing this diversity and controlling the rate of change to a carbon-free energy portfolio to keep the grid reliable and available for all of us is crucial. Availability of the electricity we all desire is truly the most cost-effective option.

May is Electrical Safety Month

Family home electrical safety checklist

Get the whole family involved using this checklist to ensure everyone is safely using electricity in your home.

See www.esfi.org or www.safeelectricity.org for more

- ☐ No extension cords are used long-term
- ☐ Outlets & power strips are not overloaded
- ☐ Light switch & outlet covers are unbroken
- ☐ Outlets are tamper resistant; unused outlets have safety caps installed
- ☐ Non-working, unusually warm & buzzing outlets reported to an electrician
- ☐ Circuit breaker box is labeled correctly
- ☐ Washer/dryer do not move excessively & dryer lint is removed after each use
- ☐ Electronics/washer/dryer/refrigerator have room for air circulation
- ☐ Electrical cords are in good condition, are placed out of walking areas, & are not under rugs/furniture or hanging from tables/counters
- ☐ Countertop appliances are located away from sinks/tubs/showers
- ☐ GFCI outlets are installed in bathrooms, kitchens, garages & outdoors; are tested regularly
- ☐ Smoke & carbon monoxide detectors are in working order
- ☐ Small appliance cords are unplugged when not in use
- ☐ Phone/tablet chargers are original to devices, unplugged when not in use, not used on devices left in beds or under pillows & are never used with damp hands or near water

Election of Directors

Petitions will be available for pickup at the office Monday, May 3, 2021. The vote will be held at the Annual Meeting to elect one member to serve each district up for election.

Due to the cancellation of last year's annual meeting and election, Districts 3, 7 and 8 will be up for election for a two-year term. Seeking re-election are incumbents Jodine (Jodie) Tate, District 3; Michael (Mike) Patrick, District 7; and Warren Goetsch, District 8.

Districts 2, 5 and 9 will be up for election for a three-year term. Seeking re-election are incumbents Gary Martin, District 2; D. Jay Frye, District 5; and Donald (Chuck) McMillan, District 9.

For some additional information on the job duties of a Director and a map of District areas see our website www.menard.com or call the office at 800-872-1203.

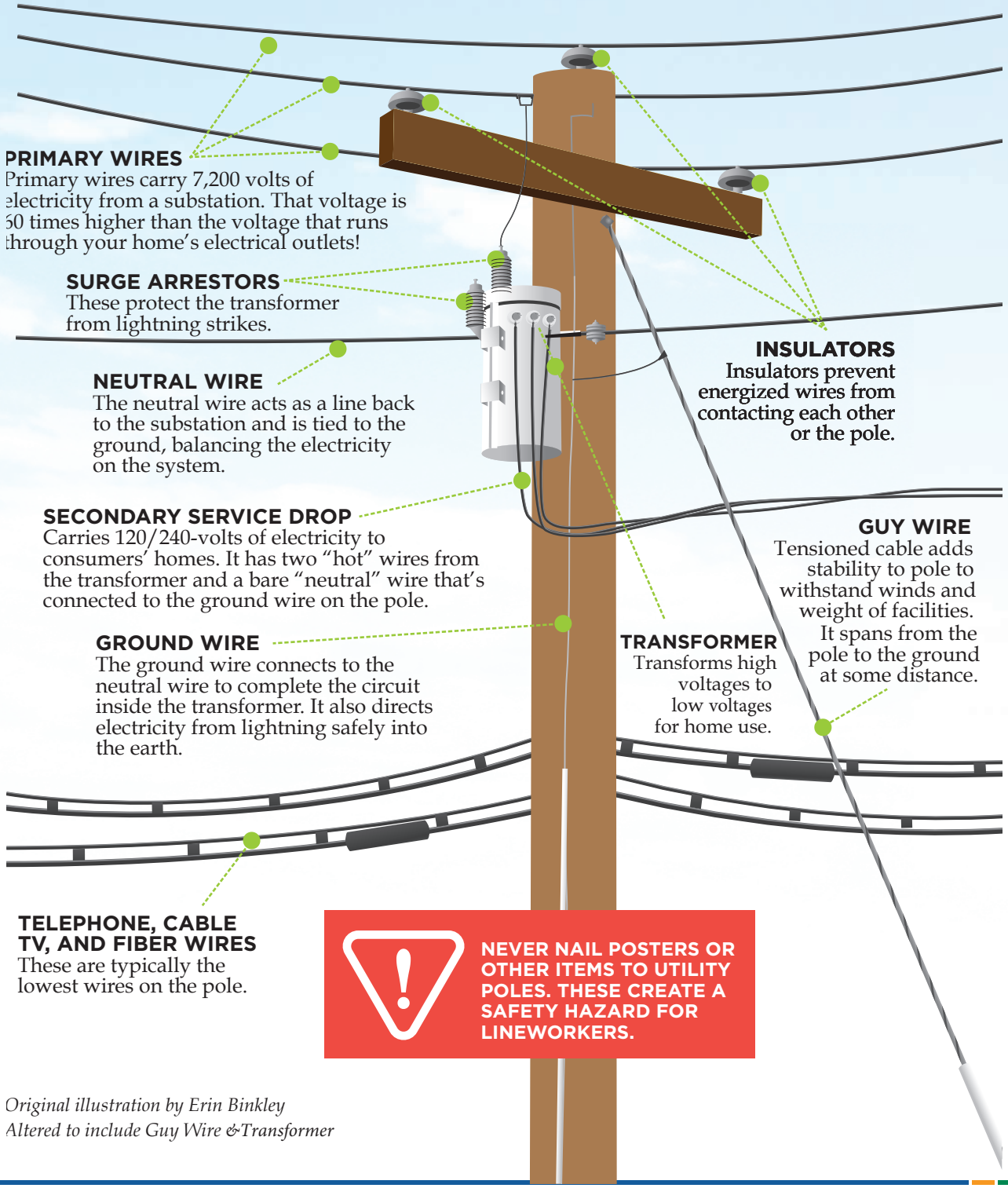
SAVE THE DATE

August 5, 2021

Annual Meeting of Members

WHAT'S ON THAT POLE?

This illustration shows the basic equipment found on electric utility poles. The equipment varies according to the location and the service they provide.



PRIMARY WIRES
Primary wires carry 7,200 volts of electricity from a substation. That voltage is 60 times higher than the voltage that runs through your home's electrical outlets!

SURGE ARRESTORS
These protect the transformer from lightning strikes.

NEUTRAL WIRE
The neutral wire acts as a line back to the substation and is tied to the ground, balancing the electricity on the system.

SECONDARY SERVICE DROP
Carries 120/240-volts of electricity to consumers' homes. It has two "hot" wires from the transformer and a bare "neutral" wire that's connected to the ground wire on the pole.

GROUND WIRE
The ground wire connects to the neutral wire to complete the circuit inside the transformer. It also directs electricity from lightning safely into the earth.

TELEPHONE, CABLE TV, AND FIBER WIRES
These are typically the lowest wires on the pole.

INSULATORS
Insulators prevent energized wires from contacting each other or the pole.

GUY WIRE
Tensioned cable adds stability to pole to withstand winds and weight of facilities. It spans from the pole to the ground at some distance.

TRANSFORMER
Transforms high voltages to low voltages for home use.

NEVER NAIL POSTERS OR OTHER ITEMS TO UTILITY POLES. THESE CREATE A SAFETY HAZARD FOR LINEWORKERS.

Original illustration by Erin Binkley
Altered to include Guy Wire &Transformer

Board highlights

For full minutes visit www.menard.com or
February 24, 2021

- All Directors, exception Jodine Tate, present in person or remotely; also General Manager Anker & Attorney Smith.
- Appointed Director Ryan active secretary as Director Patrick present remotely.
- Approved Petefish Skiles Corporate Authorization Resolution.
- Approved Electric System Construction Summary & Contract with L. E. Myers.
- Reviewed Power Line Right of Way Clearance & Vegetation Management Plan & approved Contract with Wright Tree Service.
- Anker reviewed monthly & YTD financial operating report, balance sheet & financial trends. Operating margins YTD as of 1/31 were $790,853 compared to $838,782 last year; equity at 41.85%; 12-mo TIER 2.35 & DSC 1.57.
- Reviewed Member Svs report; operations report w/224 incidents, longest outage 445 minutes, largest # affected was 543.
- Presented Alternative Energy Report with a summary of members who installed alternative energy & advised total of alternative energy received from members in 2020 on the co-op system.
- Goetsch discussed ByLaw Policy Committee Mtg. Possible late fee changes discussed. Possible new policy concerning Net Billing of Excess Member-Generated Electric Energy; discussed several examples and interconnection sizes. Committee will meet again to discuss before recommending options to the Board next month.
- Next Mtg 3/23/21.

Sharing Success Grant Opportunity

Deadline June 1st

Do you represent a 501(c)(3) charity or organization serving a public purpose in the local communities within the Menard Electric service territory? As a co-op, one of our core values is Commitment to Community. We partner with CoBank's Sharing Success Program each year to provide funding to local projects sponsored by eligible organizations in need. These might include schools, government agencies, service/civic organizations, fairgrounds and many more. Have a project? Contact us for details before June 1 at 800-872-1203 or info@menard.com

Memorial Day
Monday, May 31st
Office Closed

Today and every day we celebrate the extraordinary service, commitment and courage of those heroes who gave the ultimate sacrifice.

Employee Favorite RECIPES

Alycia Clifton, Receptionist

Easy Spring Chicken

- 1 boneless/skinless chicken breast
- Cooking oil
- 3 pieces of asparagus
- 2 small pieces of tomato
- 1 slice mozzarella cheese
- 1 slice bacon, cooked until crisp
- Salt & pepper, or favorite seasonings as desired

Cut chicken breast lengthwise to create a pocket; be careful not to cut all the way through. Roll asparagus and tomato up in the slice of mozzarella and stuff inside the chicken breast. Season with salt and pepper or add favorite seasonings as desired. Close the pocket with a toothpick. Heat oil in a skillet and add chicken to sear, 3-5 minutes per side. Place in an oven-safe dish and bake at 350 degrees for 15-20 minutes or until chicken is fully cooked. Add bacon. Make as many or as few as you need.

Alycia says, "Some people use Pinterest or Google to find recipes; I ask my stepdad Donnie. This recipe is simple to make and looks classy too if you have friends over for dinner."

MENARD ELECTRIC COOPERATIVE
1-800-872-1203
info@menard.com
14300 State Hwy 97
PO Box 200, Petersburg, IL 62675
www.menard.com
facebook.com/MenardElectric