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Biwabik completes 17-year transition of drinking water source

Wellwater unsuitable as mining expansion forces move to former ore pit

by Steve Downer

The City of Biwabik has completed a nearly 17-year process to entirely replace the source of its municipal water supply. The city of approximately 1,000, located on the eastern end of the Iron Range, concluded the flawless water supply transition in November.

The saga started in May 2005, when Inland Steel, a taconite mining company with offices in nearby Virginia, announced it would expand its activity to an area west of Biwabik. This caught the attention of many in the area, but one item in particular struck Biwabik Public Utilities Commissioner Dave Sherek. The expansion would mine to an estimated elevation of 1,183 feet above sea level.

Biwabik's drinking water source at the time was the abandoned Canton iron mine pit, with an elevation of 1,425 feet, nearly 250 feet higher than the nearby area to be mined. When Inland dewatered its new mine pit, engineers estimated Biwabik's water source would drop to unusable levels.

Years ago, Biwabik was supplied by two



photo courtesy of Dave Sherek

The Biwabik municipal water system barge/pumphouse combination floats on the crystal clear water of an abandoned iron ore pit. The barge is tethered to shore through two 17,000-pound concrete blocks, one of which is visible in the foreground of this photo.

municipal wells. These were taken out of service when they were found to be contaminated with chemicals commonly used by dry cleaners. Biwabik started using the Canton pit as its drinking water source in 1983. The pit had been abandoned some 20 years earlier.

The water intake for the system was a floating barge, with a pump house. The pump house was accessible from a ramp anchored on shore. Large changes in water elevation made it necessary to re-tether the

Biwabik: see back page please

Are utilities better able to withstand winter's rigors than a year ago?

Are utilities better able to withstand widespread winter storms today than they were last February, when 216 people died as a result of the largest grid outage in U.S. history?

The answer seems to be 'yes' in some respects and less certain in others.

That is one take-away from the Midcontinent Independent System Operator (MISO) Quarterly Update meeting held at the Minnesota Public Utilities Commission (MPUC) Dec. 3. Along with updates from Midcontinent Independent System Operator (MISO) staff, the meeting included presentations from the state's largest electric suppliers, including the investor-owned utilities and

Great River Energy (GRE).

Two factors affecting reliability now that didn't exist in February 2021 are high natural gas prices and coal supply challenges. Those two issues were raised repeatedly over the course of the meeting.

MISO opened the meeting with its Winter Readiness report. In a typical winter situation, it expects to have ample electric generation capacity to meet electric load. However, with last February expressly in mind, MISO said an overall average does not preclude extreme events for a short period of time, which could present significant operational challenges.

This includes the risk of energy shortfalls

during extreme weather.

In a scenario similar to what we experienced in February, MISO estimated it could face 107.3 gigawatts (GW) of demand and generation availability of only 87.9 GW. This could lead to 7 Gigawatts of maximum load shed, MISO said, in a "perfect storm" scenario.

Such a scenario precludes MISO from carrying its own load, said its representatives and it would have to "rely on our neighbors to help us support the load we have." This would likely mean power imports from PJM, a regional transmission organization

Reliability: see page 5 please

Municipals again display exemplary reliability in winter storms

by Steve Downer

Municipal electric utilities are often quick to use the word "fortunate" when describing a good service record through severe weather, but a review of outage incidents also reveals good planning, diligent maintenance and a commitment to outstanding local service.

That was certainly the case following a spate of notable December weather.

The worst occurred the evening of Dec. 15, when 16 tornadoes were confirmed in southeast Minnesota. Tornadoes resulted in city-wide outages to several municipal utilities and scattered outages lingered in

the area for days.

Prior to the tornadoes and high winds, temperatures exceeded 60 degrees across southern Minnesota, melting much of the snowpack. After the storms, reported the National Weather Service, strong winds with gusts in excess of 50 miles-per-hour persisted for several hours. Several inches of snow fell as the temperatures dropped to more normal levels.

The weather came with plenty of warning.

Preston Public Utilities and City of Preston crews met the



Power plant operator Scott Wilson flawlessly performed black-start operation of the Preston power plant following the Dec. 15 tornado.

Weather: see page 6 please

Periodicals
Postage
PAID
at
Twin Cities, MN

Inside
Stories

MMUA 2022
Calendar
Revealed
page 9



MMUA Distributes
Bovitz Scholarship
materials
page 11



Municipal Plants
Ready for
Emergencies
page 12



DER rebuffs utility comments in setting parameters for EV charging and CIP

The Minnesota Department of Commerce, Department of Energy Resources (DER) released Technical Guidance to Determine Eligible Electric Vehicle Charging Sales to be Deducted from Utility Gross Annual Retail Energy Sales on Dec. 30.

Specifically, the Guidance includes the approved methodology and assumptions required for determining electric vehicle charging sales that are eligible to be included in a utility's gross annual retail energy sales. The guidance resulted from the ECO Act, signed into law by Governor Tim Walz in May, which modernizes Minnesota's Conservation Improvement Program (CIP).

Commenting on the issue were Fresh Energy, Southern Minnesota Municipal Power Agency (SMMPA), Great River Energy, Otter Tail Power Company (OTP), Minnesota Power, Minnesota Rural Electric Association (MREA), Dakota Electric Association, Willdan, Center for Energy and Environment, Xcel En-

ergy, MMUA and Connexus Energy.

In general, the environmental groups supported the DER staff proposal which was eventually adopted, while the utilities requested a simpler approach.

The DER said that in determining those electric sales not to be included in a utility's gross annual retail energy sales pursuant to 216B.2402 subdivision 10(3), a utility must demonstrate a connection between electric vehicle charging sales and that utility's program, rate, or tariff for electric vehicle charging.

Three methods were approved for demonstrating a connection between electric vehicle charging sales and a utility's program, rate or tariff for electric vehicle charging. These include:

- Provide the Department with metered data for electric vehicle charging sales associated with the utility's program, rate, or tariff for electric vehicle charging.

- If metered data is not available or is not complete,

provide the Department with a verifiable number of electric vehicles participating in the utility's program, rate or tariff for electric vehicle charging. This number would then be multiplied by a (to be established) deemed value to calculate sales to be removed from the utility's gross annual retail energy sales.

- If the utility does not have metered data or a specific electric vehicle charging program, rate, or tariff, provide the Department with a verifiable number of electric vehicles participating in a utility program, rate, or tariff that is designed to optimize the timing of electric vehicle charging. This number would then be multiplied by a (to be established) deemed value to calculate sales to be removed from the utility's gross annual retail energy sales.

The DER approved the following additional method for municipal or cooperative consumer-owned utilities (COUs) to determine eligible sales to be backed out of gross annual retail energy sales:

- COU offers a program, rate, or tariff that is designed to optimize the timing of electric vehicle charging;

- COU actively markets the program, rate, or tariff to electric vehicle owners;

- COU, using Minnesota Public Utility Commission data, multiplies the total number of vehicles in that utility's service territory by a (to be determined) deemed value.

DER staff was instructed to work with stakeholders in 2022 through the Technical Reference Manual (TRM) Advisory Committee process to create deemed value(s) for electric vehicle charging and detail the information that utilities will be required to submit to the Department for eligible electric vehicle charging sales to be backed out of a utility's gross annual retail energy sales.

Guidance remains to be developed for two issues:

- Guidelines for utilities to use to determine the eligibility of multifamily buildings to participate in CIP low-income programs;

- Efficient Fuel Switching – Technical guidelines for utilities to use to determine if a fuel-switching improvement meets the necessary criteria and to calculate the amount of energy saved.

MMUA participated in assorted DER working groups and addressed the draft technical guidelines.

MMUA said it believed the

Legislature intended to exclude EV charging sales from gross retail sales, to help protect a utility from being subject to an ever-increasing CIP goal, while also creating an incentive to help the transition to electric vehicles.

MMUA supported the recognition of the need to have more than one way to determine eligible sales.

SMMPA proposed a relatively simple calculation/methodology to determine EV charging energy sales, factoring in the Number of EVs in each utility's service territory; Annual Miles per Vehicle; EV Charger kWh per Mile; and EV Charging kWh Sales.

MREA supported an Otter Tail Proposal to develop an average annual EV energy usage within the Minnesota Technical Reference Manual that would be tiered based on type of EV. Combining the deemed EV usage number with the annual EV ownership report from the Minnesota Public Utilities Commission would allow each utility a simple and fairly accurate way of estimating annual EV usage from tariffs. Individual utilities could add to this number depending on non-registered EVs or other utility specific nuances. This approach would have allowed time for further EV metering development and formal verification approaches to advance.



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In St. Paul and Washington, we are at the table to keep you off the menu

You have probably heard the popular adage that goes something like, “Those who are not at the table are likely to be on the menu.” Nobody knows who said that first, but governments have been running things for a long time. It has always been true that those who are not advocating for their issues are the easiest to ignore by political decision-makers.

As the Minnesota Legislature returns to St. Paul later this month, there are plenty of issues important to municipal utilities that will need MMUA’s voice at the table. In December the MMUA Board studied more than a dozen areas of concern and provided the staff with guidance on preparing for the coming legislative session. Some of the issues uppermost on our minds are:

- Third party sales—Any legislation that would allow the direct sale of electricity to a customer by anyone other than the utility within whose service territory the customer exists;
- Clean fuels standard—Minnesota-specific legislation aimed at reducing greenhouse gas emissions and promoting the use of renewable fuels;
- Fuel neutrality—Efforts to ban the use of particular fuels or equipment using those fuels that could impact the provision of reliable utilities in Minnesota;
- Electric Vehicles—Laws or rules that impact the provision of the utility infrastructure necessary to support EVs;
- Cybersecurity—Provisions related to paying ransom, local security requirements, and the prevention of cyber-attacks.

These issues and many others discussed by the Board are possible topics in St. Paul this year.

This stuff is not merely theoretical. It has an impact

Public power responds to destructive winter storms

Public power utilities in several states are working to restore power in the wake of a string of deadly tornadoes that hit communities on the evening of Friday, Dec. 10.

Mayfield, Ky., is served by public power utility Mayfield Electric & Water Systems (MEWS).

A candle factory in Mayfield collapsed, killing nine. In Graves County, the death count was 22.

Mutual aid efforts were widespread in Kentucky and Tennessee.

on the day-to-day workings of utilities in Minnesota. As I write this, administrative departments of state government are at work creating guidance on ECO Act implementation which could significantly impact utilities’ bottom lines. Agencies are interpreting emissions rules in a manner that has adverse implications for utilities with older generation equipment. Decisions are being made regarding availability of funds from the Infrastructure Investment and Jobs Act passed in Washington in November.

Speaking of Washington, as the Biden administration enters 2022 its second highest priority includes the intent to “... reduce climate pollution in every sector of the economy ... deliver an equitable clean energy future, and put the United States on a path to achieve net-zero emissions, economy-wide, by no later than 2050.” (See <https://www.whitehouse.gov/priorities/>) The \$1.9 trillion bill formerly known as “Build Back Better” may be dead for now, but it is likely some version of it will pass in the months ahead. With these priorities, you can be sure there will be implications for utilities like yours.

As I have met with MMUA members since September, I find that many of you are very tuned into legislative issues. You offer a great deal of respect for MMUA’s advocacy on behalf of municipal utilities, and you engage to help us get things done. Thank you for your support.

On the other hand, I have

also met some folks who are not quite sure why MMUA puts so much emphasis on legislative and advocacy matters. I’ve heard things like, “What do [public policy employees] actually do around there anyway? Why am I paying their salaries? I don’t see the benefit.”

The answer to that question is found in the quote at the beginning of this article.

MMUA invests in government relations and public policy because we need to have municipal utilities represented at the tables both in St. Paul and Washington. If we don’t, we’ll be on the menu. That’s just how it works. A speaker at a webinar sponsored by the American Society of Association Executives (ASAE) recently put it this way, “Whether you’re in the room or not, policymakers are talking and making decisions about issues that might make or break your organization and its stakeholders. You must be there.”

Regardless of whether you are currently a big supporter of MMUA’s legislative efforts or a bit of a skeptic, I hope you will engage with the Association’s advocacy processes this year. Getting involved is the best way to make sure we know what matters to you, and to see that your legislators do too. There are two main ways to do this:

- Join us at the upcoming 2022 MMUA Legislative Conference February 8-9. This is an opportunity for municipal utilities to inform and influence state lawmakers. Any public official

From My Desk to Yours

Karleen Kos
MMUA CEO



will tell you having people in the room gets their attention. You may have a great relationship with your legislators back home and therefore think, “My representatives already know how I feel.” Perhaps you are right. But that doesn’t send the same kind of message as a show of force. When the legislators see a large group, they experience the message differently. A strong turnout ensures that our message is heard. Registration is open now.

- Participate in the frequent Zoom meetings held by MMUA’s Legislative Advisory Council. In these meetings

you will hear how issues are progressing and provide advice to the MMUA staff and Board on how to best represent your interests. Email Kent Sulem (ksulem@mmua.org) to be added to the list for these meetings.

Of course, you can always reach out to me or any member of MMUA’s government relations team with your feedback. Our goal is to represent you well at all the relevant tables, and to make sure that municipal utilities in Minnesota are neither on the menu nor unfairly picking up the check. Let us know how we are doing.



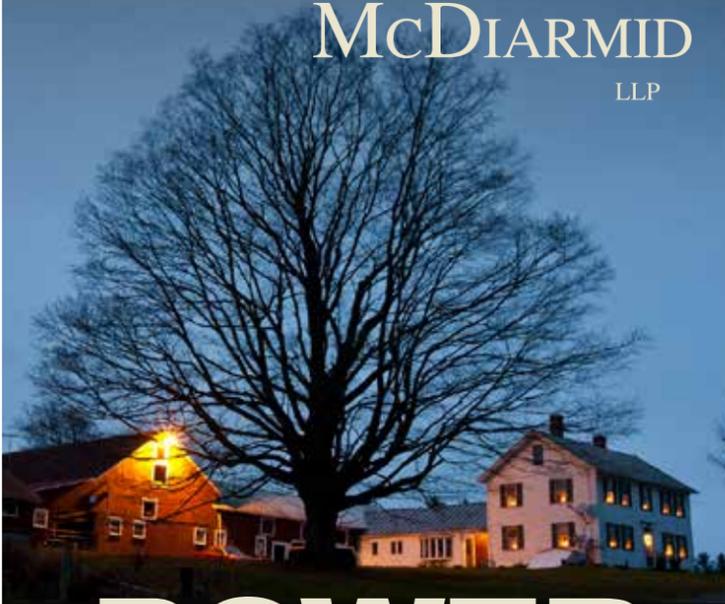
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NERC long-term reliability assessment identifies numerous risks, calls out MISO

Natural gas is the reliability “fuel that keeps the lights on.”

So said the North American Electric Reliability Corporation (NERC) in its December 2021 Long-Term Reliability Assessment (LTRA). While all areas of the nation face challenges, the assessment calls out the Midcontinent Independent System Operator (MISO) and U.S. Western Interconnection areas for resource adequacy and energy sufficiency concerns.

The 2021 LTRA identifies numerous risks that stakeholders and policymakers need to focus on over the next 10 years.

“An increased focus on coordination between the electric power system and the

systems that supply it with natural gas,” said the report, “must occur.”

Prioritizing reliability during the grid’s transformation to increased use of intermittent, renewable resources, said the report, will support a transition that assures electric reliability in an efficient, effective and environmentally sensitive manner.

Capacity shortfalls, where they are projected, are the result of future generator retirements that have yet to be replaced with new resource capacity. Capacity-based estimates can also give a false indication of resource adequacy.

In many areas, including that served by our own Midcontinent Independent System Operator (MISO), vari-



The Electric Reliability Organization (ERO) is comprised of NERC and the six Regional Entities, shown in this NERC graphic. MRO stands for Midwest Reliability Organization.



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able energy resources (VERs) are increasingly important to meet electricity demand. Energy risks emerge when VERs like wind and solar are not supported by flexible resources that include sufficient dispatchable, fuel-assured, and weatherized generation. Grid operators must have flexible resources, including adequate dispatchable, fuel-assured, and weatherized generation, at their disposal. This is especially true in areas with high levels of variable generation to avoid shortfalls when VER output is insufficient to meet demand

Of most concern to Minnesota, in the MISO area a reserve margin shortfall is due in 2024. MISO is projected to face the retirement of over 13 gigawatts (GW) of resource capacity over the 2021–2024 period, including 10.5 GW of coal-fired and 2.4 GW of natural-gas-fired generation. A capacity shortfall of over 560 MW in 2024 would result if all of these unconfirmed retirements were to occur without additional new generation resources (on top

of the 8 GW already in development for interconnection by 2024). The retirement of these traditional resources also accelerates the change in resource mix and punctuates the urgency for implementing area resource adequacy and energy sufficiency initiatives.

Inadequate winterization of thermal and wind generation in (southern) parts of MISO, Southwest Power Pool, and Texas that do not typically experience extreme cold temperatures remains a significant risk in winter reliability.

The bulk power system (BPS) has already seen great change and more is underway, said the report. Managing this pace of change presents the greatest challenge to reliability.

The recent FERC-NERC report on the February 2021 Cold Weather Outages in Texas and South Central United States highlighted the deadly impacts if reliability is not prioritized in resource planning and policy considerations.

Recognition of the challenges that the system faces during this transition requires action on key matters. Chief among these:

- Sufficient flexible resources are needed to support increasing levels of variable generation uncertainty. Natural-gas-fired generation will remain a necessary balancing resource to provide increasing flexibility needs.

- More transmission is needed to get renewable power to load centers, but it takes time to build high-voltage transmission, and extraordinary siting challenges can be encountered.

Without a collective focus, system reliability faces risk that is inconsistent with the essential role played by electric power’s in the continent’s economy and health and safety of its population.

Energy risks in wide-area

and long-duration extreme weather events driven by climate change, said the report, threaten reliability when electricity demand is driven above forecasts and supplies are reduced. Diminished levels of flexible fuel-assured, weatherized, and dispatchable resources create vulnerabilities when extremely hot or cold weather settles over a wide area for extended duration or when weather-dependent generation is impacted by abnormal atmospheric conditions, such as smoke or “wind drought.”

The shift to inverter-based resources (IBR) brings unique opportunities but also integration challenges. IBRs respond to disturbances and dynamic conditions based on programmed logic and inverter controls, not mechanical characteristics. IBR performance issues have resulted in grid disturbances that affect the reliability of the BPS. Furthermore, heightened cyber security awareness and risk-reduction engineering should be pursued to reduce attack surfaces and mitigate reliability and security concerns as IBRs proliferate.

Distributed energy resources (DER) promise both opportunity and risks for reliability. Increased DER penetrations can improve local resilience and offset peak electric demand on the BPS. However, DER can also increase variability and uncertainty in demand. DERs increase complexity.

In the California-Mexico part of the Western Electric Coordinating Council (WECC), energy risks are present today as electricity resources are insufficient to manage the risk of load loss when wide-area heat events occur. Risk is most acute in late afternoon since there are energy limitations as solar photovoltaic (PV) resource

NERC: continued on facing page

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Reliability:

continued from front page

to the east of MISO that coordinates the movement of wholesale electricity in all or parts of 13 states and the District of Columbia.

The coal industry is under pressure, said MISO, with a supply chain that is very different from the past. Finding coal on the spot market, it reported, is a challenge.

With high natural gas prices there is an economic incentive to burn coal, but MISO cautioned about burning through coal stockpiles too quickly heading into winter. To slow an early reduction in coal stockpiles, said MISO, a discussion is underway about adjusting market offer prices.

MISO said financing coal was also an issue. Recognizing an increased risk to coal and even gas supplies, MISO said it was conducting weekly coal/fuel oil surveys and estimated generating unit run times.

Dual-fueled generators, which can run on either natural gas or fuel oil, are “very important assets at a time like this,” said MISO.

In summary, MISO estimated 90 percent of the generating fleet was winterized and capable of working in extreme weather. MISO North

is more capable of withstanding extreme cold temperatures, it said, than is MISO South.

Utility outlooks

Xcel noted challenges this fall with its coal inventory but said it is taking steps to remedy those concerns. Its coal stockpile is increasing and it doesn’t expect any problems.

Winter prices appear significantly higher with loads increasing from depressed pandemic levels. Natural gas prices are causing concerns along with the coal inventory issues. “A lot of (coal) mines shut down,” Xcel said, and “rail sets taken off-line.” Diversity of fuel supply and generating resources “is definitely key,” Xcel said. It expects to have “plenty of surplus” generating capacity, “assuming wind is in place.”

Thermal (fossil-fueled units) will be available, said Xcel. Wind generation “starts to see cutouts” at 22 below zero Fahrenheit.

GRE said its 1,400 megawatts (MW) of gas/dual fuel peaking units were an “incredibly valuable” resource during February’s extreme cold. GRE said historically it has seen wind generation drop offline at 22 below, which is “something to keep in mind.”

GRE said it expects much higher prices. It is “as prepared as ever” for cold weather events but did mention a national shortage of fuel truck drivers. It was taking steps to ensure deliveries. Coal Creek Station, its largest resource, is valuable, GRE said, and can generate to 60 degrees below zero.

Minnesota Power noted it could call on demand response (removing the load from its system demand) from 15 percent of its load. The cold weather packages on its wind

turbines allow them to operate to -22. It expects adequate coal reserves over the winter and market prices 50 to 75 percent higher.

Otter Tail Power said it had 50 days of coal at its Big Stone plant. The lignite-fired Coyote is a mine mouth facility and has no fuel supply issues. Otter Tail said it expects market pricing three times higher than two years ago and 50-70 percent higher than last year. There are no cold weather limits with its coal plants. Its wind genera-

tion drops offline from -20 to -30.

Manitoba Hydro said drought has been a concern in recent months but it would meet its contractual obligations. November precipitation was more normal.

ITC and Xcel both noted that the Huntley-Wilmarth 345-kV line, from the Huntley substation near Winnebago to the Wilmarth substation in the city of Mankato, was recently energized and improves reliability.

NERC: Consideration of temperature affects urged

continued from facing page

output diminishes. The U.S. Northwest and Southwest parts of WECC have increasingly variable resource profiles, raising the risk of energy shortfalls.

NERC said regulators and policymakers in should coordinate with electric industry planning and operating entities to develop policies that prioritize reliability.

Recommendations include:

- Review resource adequacy requirements to ensure that they address both energy and capacity shortfalls and consider both peak and non-peak demand hours. They should also consider limita-

tions from neighboring systems during wide-area, long-duration extreme weather events and potential generator fuel supply limitations.

- The Electric Reliability Organization (ERO) and industry should develop processes and techniques to assess the adequacy of energy supplies and ensure that the changing resource mix can meet operational needs.

- ERO and industry should strengthen winterization and cold weather preparedness, coordination and enhance reliability standards.

- Generator operators and owners as well as Grid Balancing Authorities (BAs) should increase coordination

on seasonal operating plans. BAs must be aware of the performance expectations of all generators at forecast ambient conditions, and plans should depend upon generators that have a reasonable expectation of performing during forecast conditions.

- Industry planners should update interconnection agreements to address performance specifications for inverter-based resources (IBRs).

- The ERO should continue advancing the efforts to modernize NERC Reliability Standards to account for IBR performance characteristics, improve modeling and studies for reliably integrating IBRs into the BPS.



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Weather:

continued from front page

morning of Dec. 15 to discuss the incoming storm threat. Among the preparations: an errand to buy new chains for chain saws and a review of black-start procedures at the municipal power plant.

The city shared information with the public, including on a community Facebook page, on how to report power outages.

The preparation paid off as an after-dark tornado cut a two- to three-block swath through the city. The National Weather Service classified the tornado as an F0 with 80 miles-per-hour winds that strengthened to F1 as it exited Preston.

The storm damaged a transmission line serving Preston. Electric supply was cut off. Then the tornado moved through town, from south to north. It announced its arrival by toppling a large pine tree onto the house of Mayor Kurt Reicks.

A lot of trees were downed, said City Administrator/Utility General Manager Joe Hoffman. Some landed on houses

or garages but no injuries were reported.

Preston benefitted from its power plant.

After the storm passed, staff reported to the office and took calls while the electric crew isolated damage on the distribution system. Ninety percent of Preston Public Utilities customers had power restored within an hour, with electricity from the local power plant. Damage on four homes prevented the restoration of electric service until the next day.

Transmission service was restored approximately three hours after the local power plant picked up the load.

Power plant personnel used flashlights to go through black-start procedures. Compressed air was used to turn over a Fairbanks Morse opposed-piston engine, which fired and ran smoothly. With station power established, a larger Fairbanks Morse engine was put into service and used to send power out on the lines.

A Preston community Facebook page said, "We want to extend our sincere gratitude to the City and Preston Pub-



It was a busy evening in Spring Valley Dec. 15, as Public Utilities staff responded to outages and fired up the power plant. Electric Superintendent Chris Rolli and Office Manager Kristin Howard are pictured in this 2019 MMUA photo.

lic Utility crews for working hard to get out community put back together. Thank you to Preston Fire for their assistance as well!"

Spring Valley is 17 miles due west of Preston.

Spring Valley Public Utilities also lost a transmission feed and suffered a city-wide outage. After a quick check of its overhead feeders, utility staff also used compressed air to turn over and start a Fairbanks Morse opposed-piston engine to power its generating plant, before starting a larger engine to provide power to its system.

Spring Valley restored electric service to its custom-

ers on underground distribution feeders quickly after losing transmission. Utility staff made quick work of the overhead distribution system check and had power restored to the entire system within 45 minutes.

Further checks showed no damage to overhead secondary lines, despite some tree damage in the city.

Superintendent Chris Rolli credited the underground system and a "pretty aggressive" tree trimming program in the overhead areas for the lack of distribution system damage.

A broken transmission pole caused an entire city outage in Austin.

As planning and work to replace the transmission pole proceeded, AU patrolled and cleared downed trees from distribution lines. Service was restored to AU customers within three hours.

The 69KV pole that was broken was a redundant line that had 13.8KV under-build on it, and AU was able to switch both of these circuits out. RPU supplied the class 1, 70-foot pole that was needed and AU crews had that back in service 11:30 a.m. Friday, Dec. 17. The AU Gas & Water construction department helped with the change-out, using their tractor backhoe to dig the hole and a 70' crane that typically sets pre-cast manholes and water main to raise davit arms, insulators and conductors.

There were just a couple small, isolated outages after AU restored the transmission feed. These were speedily repaired.

Rochester saw wind gusts of 78 mph and reported wind damage at 7:53 p.m., Dec. 15. Rochester Public Utilities (RPU) reported widespread, small patches of outages. Most of the outages were caused by tree branches, blown fuses or other causes. RPU crews worked through the night. RPU said there were approximately 100 customers out the morning of Dec. 16 and crews continued to mop up into Dec. 17.

Farther west, the Redwood Falls airport measured a gust of 78 mph at 11:30 p.m. Redwood Falls Public Utilities, despite high winds and an electric distribution system that is approximately 50 percent overhead, reported no outages.

Weather: see facing page



Chad Hindt (left) and Chris Rolli of Spring Valley Public Utilities awaited delivery of a new engine/generator set in February 2009.

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Weather:

continued from front page

MiEnergy electric cooperative, headquartered near Rushford, reported 35 broken poles and more than 7,000 customers without power.

Well over 2,000 homes and businesses in the City

of Stewartville lost electrical service in the storm. Power was restored to everybody, according to local reports, by the afternoon of Dec. 17.

People's Cooperative Power Association, which serves Stewartville, reported extensive and severe damage and outages to 15 percent of its



It was all hands on deck in Austin Dec. 15-16 as city and utility staff responded to power outages, including a major disruption caused by a broken transmission pole. The Austin Utilities Gas & Water construction department helped the electric crew make repairs and RPU quickly sourced the pole.

customers. Crews from neighboring utilities called in to assist and power restored to all except for a small number of members by Dec. 18.

Xcel lost 86,000 customers from the Twin Cities southward. Outages persisted into

Dec. 17, according to its online outage map.

As part of the storm system, a derecho moved at 60-70 mph across Kansas to Wisconsin, resulting in over 400 reports of damaging wind and tornadoes.

Further south, intense thunderstorms and tornadoes sprouted across parts of Arkansas, Illinois, Tennessee, Missouri and Kentucky. Two supercell thunderstorms each traveled more than 100 miles, producing tornadoes along the way, before dissipating well after dark.

Earlier in the month, on Sunday, Dec. 5 heavy snow fell across much of Minnesota's Arrowhead region. Four miles east of Grand Marais, 17.2 inches were reported. From Chisholm to Silver Bay a foot fell, with Grand Rapids picking up nine inches and Duluth nearly seven. Winds gusts of 66 miles per hour were reported in the Duluth-Superior with wind chills well below zero.

On Dec. 10, a strong winter storm brought a narrow band of heavy snow to the southern and eastern Metro area. The National Weather Service received snowfall reports of 21 inches on the east side of St. Paul. Snow emergencies were called in several other cities across southern Minnesota.

There were no widespread outages reported from these storms.

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The City of Shakopee approved a new payment-in-lieu-of-taxes (PILOT) agreement with Shakopee Public Utilities (SPU) on Dec. 21.

Under the agreement, SPU will pay the city 5.5 percent of its annual gross sales, as defined, for electricity and water. The utility will also pay an additional 0.5 percent of its gross sales to the local Economic Development Authority to support economic development in the municipal service territory.

According to local news reports, each half-percent of the PILOT equals approxi-

Around the State



mately \$250,000. The previous PILOT agreement had been in effect since 2001.

On Dec. 23, the **North Branch Water and Light Commission** announced a 26 percent decrease in water usage rates. Increased efficiencies and reductions in operating costs and more users on the system were given as reasons for the decrease. With more users on

the system, sewer rates were decreased 10 percent.

Water and Light Commission staff now office in North Branch city hall.

The **Rushford** city council approved a recommendation from its Electrical Commission to use American Rescue Plan Act funding to replace three of five circuit breakers in the substation. Total replacement cost is estimated at \$70,000. Rushford is working with Dairyland Power and MiEnergy on the reliability-enhancing project.

The **City of Le Sueur** is offering free energy-saving kits to residents. Kits include a bag, dimmable LED light bulbs, LED nightlight, energy-efficient Christmas lights, water-saving devices and other items.

Utility Capital Improvement Plan projects figured prominently in the budget adopted Dec. 6 by the **Rochester City Council**. They include: \$22.4 million for the District Energy System and \$20.3 million for the Marion Road Substation.

Rochester Public Utilities (RPU) will transition all eligible residential water service customers into RPU's Service Assured® Water Service Repair Coverage Program starting on Jan. 1. All eligible RPU residential water customers that are not already enrolled in the program will automatically be added and billed \$1.99 per month. Any customers wishing to not receive the Service Assured® Water protection may opt out of the program with a phone call or completion of an on-line form.

Service Assured® Electric coverage will continue to be an opt-in coverage for underground residential electric service protection.

The **Austin Utilities Board of Commissioners** approved the 2022 Austin Utilities budget and related rate adjustments in December. The annual budget is used to set rates along with cost-of-service and rate studies performed every three years.

The electric rate is unchanged. Water rates will increase by 2 percent for residential and commercial customers. Austin Utilities will not make changes to the natural gas rate but will use its Purchased Gas Adjustment mechanism (PGA) to address anticipated winter gas increases on a month-by-month basis. During the winter months gas prices could

be 30-35 percent higher.

To minimize the impact of commodity price spikes to its customers, Austin Utilities will use several tools, including: a hedge program that locks in cost for 65-75 percent of anticipated usage; a plan to increase winter hedge by up to 90 percent on a month-by-month basis; a propane air plant to displace natural gas load; a commercial gas interruptible program; and peak alerts to warn customers when costs are high.

Hibbing had a holiday decorating contest. The Hibbing Area Chamber of Commerce and Hibbing

Public Utilities Department sponsored the holiday "Lighting the Town that Moved" contest. Both commercial and residential winners were selected.

Willmar Municipal Utilities and the University of Minnesota extension service recently combined on an energy efficiency outreach and assistance event at a mobile home park. Basic weatherization kits—window caulk, plastic film, and pipe wraps—were handed out along with energy efficiency tips to residents.

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Meeting & Training Center Calendar 2022

**Electrical Distribution
Design Workshop**
January 11-13
MMUA Office, Plymouth

T&O Conference
January 18-20
Best Western Plus Kelly Inn,
St. Cloud

**Emergency Preparedness &
Restoration Conference**
January 25-26
Holiday Inn, St. Cloud

Legislative Conference
February 8-9
DoubleTree Hotel, St. Paul

Meter School & Pre-Conference
February 22-25
MMUA Training Center, Marshall

**Electrical Skills Training for
Water/Wastewater Operators**
February 16-17
MMUA Training Center, Marshall

Substation School
April 5-7
MMUA Training Center, Marshall

Generation School
April 19-21
Hutchinson

Underground School
May 10-13
MMUA Training Center, Marshall

**Competent Person/
Excavation Safety**
May 24-25
MMUA Training Center, Marshall



**Minnesota Public Power
Walleye Tournament**
June 4
Rush Lake, Otter Tail

Annual Summer Conference
August 22-24
Madden's Resort, Brainerd

Minnesota Lineworkers Rodeo
September 13
MMUA Training Center, Marshall

Overhead School
September 13-16
MMUA Training Center, Marshall

Cross Training School
October 11-13
MMUA Training Center, Marshall

Tree Trimming Workshop
October 18-20
Brainerd Public Utilities, Brainerd

**Technical & Operations
Conference**
December 6-8
Best Western Plus Kelly Inn,
St. Cloud

**Transformer School &
Pre-Conference**
December 13-16
MMUA Training Center, Marshall

Note: calendar subject to change



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May 18-19
September 21-22
November 16-17

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National Events to Note:

APPA Legislative Rally
February 28 - March 2
Mayflower Hotel, Washington, D.C.

**Public Power
Lineworkers Rodeo**
March 26
Austin, Texas

APPA E&O Conference
March 27-30
Austin, Texas

APPA National Conference
June 10-15
Nashville, Tennessee

State regulators grant series of interim electric and natural gas rate increases

Editor's note: The following information was largely provided by the Minnesota Public Utilities Commission (MPUC).

The Minnesota Public Utilities Commission (MPUC) in early December granted a series of interim rate increases for Xcel Energy, Minnesota Power and CenterPoint Energy (CPE).

The MPUC took action on Dec. 9 to reduce interim rate increases for Xcel electric and natural gas customers and started the public review process for the proposed rate increases. The Commission approved an interim rate in-

crease of 6.4 percent for Xcel residential electric customers, and a 3.9 percent interim rate increase for residential natural gas customers, down from proposed increases of 9.4 percent and 4.9 percent, respectively.

The Commission referred Xcel's electric and natural gas matters to an administrative law judge. Final decisions are expected this summer (electric) and spring of 2023 (natural gas).

Xcel's electric residential customers will see an interim rate increase of \$79.85 million, or about \$5.54 a month for the average residential

customer. For natural gas service, the Commission approved a \$24.9 million interim rate increase. The interim rate increase combined with the Commission decision to extend the recovery of the extraordinary February gas costs from 27 to 63 months for residential customers, reduced the monthly impact to \$0.60 for the typical residential ratepayer.

Minnesota law authorizes public utilities to recover an interim rate while the Commission evaluates the full rate request. Interim rates for both proposals will start in January 2022 and will be in effect until the final rates are established by the Commission. If the final rates are lower than the interim rates, customers will see refunds.

Xcel's overall electric request sought an increase in electricity rates of 21.2 percent, or about \$677 million over three years. Under this proposal, the typical residential customer would see a 24.3 percent increase, or approximately \$12 to \$21 a month. Xcel's natural gas proposal would increase rates by 6.6 percent, or about \$35.6 million. The average natural gas residential customer would see a monthly increase of about \$5.12.

Final decisions are expected in fall (CPE) and winter (MP) 2022.

MP originally proposed a 14.2 percent interim rate increase but proposed to cut it in half for residential customers after reaching an agreement with consumer advocates. The average MP residential customer will see an interim rate increase of approximately \$5.89 a month.

CPE initially requested a 5.1 percent interim rate increase, but it was reduced. Interim rates for both proposals will start in January 2022 and will be in effect until the

final rates are established by the Commission. If the final rates are lower than the interim rates, customers will see refunds.

Minnesota Power's overall request asked to increase electricity rates by 17.58 percent, or \$108.3 million. Under this proposal, the typical residential customer would see an increase of approximately \$15.08 a month. CPE's proposal would increase natural gas rates by 6.5 percent, or about \$67.1 million. The average CPE residential customer would see a monthly increase of about \$4.05.

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MP, CenterPoint interim increases approved Dec. 2

The Minnesota Public Utilities Commission (MPUC) approved reduced interim rate increases for Minnesota Power (MP) and CenterPoint Energy (CPE) customers Dec. 2 and started the public review process for the proposed rate increases. Both utilities filed formal requests for general increases in rates in early November 2021.

Minnesota law authorizes public utilities to recover an interim rate while the Commission evaluates the full rate request. The Commission approved an interim rate increase of 7.1 percent for MP residential electric customers and a 3.9 percent interim rate increase for CPE's residential natural gas customers, down from proposed increases of 14.2 percent and 5.1 percent, respectively.

The Commission referred the MP and CPE matters to the Office of Administrative Hearings to continue the public review of the proposals.

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MMUA distributes Bovitz Scholarship award materials

MMUA recently distributed to its members materials on the Tom Bovitz Memorial Scholarship Award program.

This program was created as a public relations tool to increase the awareness of public power and create goodwill in your city for your utility.

The \$5,000 MMUA fund is split into four prizes and awarded to essay contest winners who plan to attend a post-secondary educational institution.

Materials sent to MMUA members included a letter reintroducing the program to your local schools. The asso-

ciation relies on its members to forward this information to all their local high schools—public and private. Also distributed were scholarship program guidelines and an entry form for members to forward to schools for their use.

The local governing body of the utility picks a local winner. Every MMUA member may then enter the one local essay contest winner to the state contest.

The deadline for having utilities forward local winners to MMUA is April 20, 2022. Local deadlines will

need to be set earlier, to allow the local governing board (or its designee) time to review the entries.

Many members, with necessary local political support, award their own scholarships locally to encourage participation. A group of MMUA members will select the first, second, third and fourth place winners statewide.

MMUA will announce the winners by mid-May.

Students can find resource materials on the MMUA and American Public Power Association websites and the local utility.

Please contact Steve Downer at sdowner@mmua.org if you have any questions or comments. Thank you for helping make this program a success.

Coal stockpiles drop, DOE studies energy supply chain issues

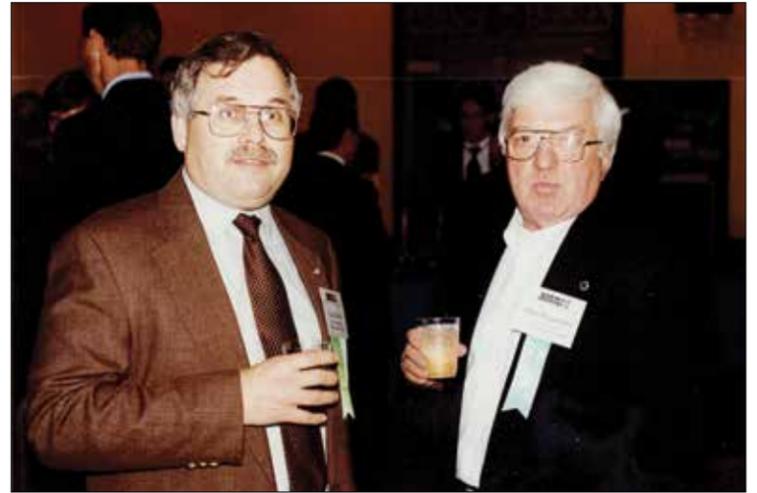
Coal stockpiles at electric power plants are at their lowest levels since 1978, according to the Energy Information Administration (EIA). Stockpiled coal dropped to 80 million metric tons in September, their lowest level since March 1978 when stockpiles hit 77 million metric tons, according to EIA data.

The EIA noted the long-term trend of declining coal consumption and said many U.S. coal mines have begun to close. That trend, combined with supply chain disruptions, has created some concerns about the ability of coal-fired generators to replenish stockpiles to last through the winter.

Meanwhile, the federal Department of Energy (DOE) issued a Request for Information on “approaches and actions needed to build resilient supply chains for the energy sector.”

Technology sectors selected by DOE for comment included: solar photovoltaic; wind; electric grid including transformers and high-voltage direct current (HVDC); storage; hydropower, including pumped storage hydropower (PSH); nuclear energy; fuel cells and electrolyzers; semiconductors; neodymium magnets; platinum group metals and other catalysts; and carbon capture materials.

The American Public Power Association reported that it focused comments on electric grid transformers and HVDC; carbon capture, storage and transportation materials; and cybersecurity and digital components.



Tom Bovitz, left, was an MMUA president and general manager of Hibbing Public Utilities. Here, Bovitz relaxed at an early 1990s MMUA meeting along with Dan Hestetune, who was general manager of the Virginia Department of Public Utilities.

Hibbing manager, MMUA president Bovitz father of scholarship program

The MMUA scholarship contest is named after Tom Bovitz, former general manager of Hibbing Public Utilities. Awarding a scholarship to a high school senior was an idea that association members discussed for a number of years before Bovitz was elected to the MMUA Board in 1992.

He was MMUA president in 1994-95. The Board of Directors established the program on June 18, 1995. Details were developed by the Communications/Member Services Committee. The program was implemented and \$2,000 was included in the 1996 budget.

Bovitz was a firm believer in the value of an education.

He was born in 1944 in Chisholm. He was a 1962 graduate of Hibbing High School. He received his associate of science degree in engineering from Hibbing Junior

College in 1964, his Bachelor of Science degree in electrical engineering from the University of Minnesota in 1966.

He was named Hibbing Public Utilities general manager in 1985, and then earned a Master of Arts in management from the College of St. Scholastica in 1995.

Bovitz was stricken with cancer and passed away Thursday, March 26, 1998. He was 53 years old.

To remember his contributions to the municipal utility industry, MMUA renamed the contest in honor of the Hibbing native.

Bovitz said the scholarship program was a good way for the association, and its members, to “give something back to the people in their cities,” said MMUA’s Steve Downer. “Re-naming the award in his honor will help us remember Tom, and his reasons for creating the scholarship award.”



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Municipal electric generation stands ready to be called on by grid operators

While the state's largest utilities often answer to state regulators, municipal utilities are generally scrutinized by a much closer audience: their own policymakers and local citizens.

Maybe that is one reason municipals place so much emphasis on reliability.

Many standby municipal power plants have remained economically viable. With diminishing grid reliability, the local plants increasingly respond to alerts from grid operators calling for regional, maximum generation output.

While economics and physics support municipal plants, additional regulatory restrictions on all small diesel generation threaten operation.

Last winter, Minnesota's electric utilities reported little or no cold-weather operational or financial difficulties. One reason for this resilience, according to utility testimony to the Minnesota Public Utilities Commission March 5, was the availability of numerous oil-fueled electric generation peaking units.

Here is a quick look at



Dave Meyer, general manager of Glencoe Light & Power Commission, in the municipal power plant.

some, but certainly not all, of the municipal generation resources available this winter.

Central Minnesota Municipal Power Agency/Services has 12 members, 11 of which have dispatchable generation

resources. Member units in Glencoe and Windom racked up significant hours of operation during last winter's emergency, particularly on Feb. 17. Units in Kenyon and Granite Falls also generated.

The energy resource mix of the Southern Minnesota Mu-

nicipal Power Agency (SMM-PA) includes 142-megawatts (MW) of member-owned diesel and dual-fuel (natural gas and diesel) units owned and operated by members and contracted for by the Agency.

In recent years, numerous SMMPA member units have been called on by MISO to

run during regional energy emergencies.

SMMPA's largest resources located in member cities include:

Fairmont Energy Station (FES) was constructed as a 25 MW addition to the existing Fairmont 12 MW diesel power plant, and commenced commercial operation in 2013.

Run by four SMMPA operators, FES is crucial in supporting wind and solar generation by responding quickly to the frequent changes in output of those intermittent resources.

The Owatonna Energy Station (OES) is a 38.8 MW natural gas facility constructed on the western edge of Owatonna that began commercial operation in March 2018.

OES, similar to its counterpart in Fairmont, utilizes four reciprocating, internal combustion engines.

Power plants like OES and FES, with quick-starting, flexible reciprocating engines, are perfectly suited to support and compliment intermittent generation.

Four operators oversee operations at OES, as well as a neighboring 16.5-megawatt gas turbine owned by OPU that is under contract to the Agency.

For decades, SMMPA and its 18 members have relied on its main source of electricity, Sherco Unit 3. Today, SMMPA is developing a diverse mix of generation resources that reduces its dependence on coal and provides a reliable, cost-effective and sustainable power supply.

Missouri River Energy Services (MRES) spans different grid regimes. It does have baseload nuclear and hydro-power resources in MISO that provide reliable generation despite the weather conditions. MRES also has energy and capacity bilateral agreements to support its members' power supply needs on a day-to-day basis.

In addition, MRES has reserved capacity agreements for the operation of local diesel generation owned by 13 MRES members which provides over 120 MWs of capacity for MRES and which can also act as an energy market hedge during extreme events.

The City of Luverne and Moorhead Public Service (MPS) are the only two MRES Minnesota members in the Southwest Power Pool (SPP) footprint. When grid operators commenced rolling outages last winter, they both generated from midnight

Generation: see facing page

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Generation:

continued from facing page

Sunday, Feb. 14 through the mid-morning of Thursday, Feb. 18.

MRES relies heavily on this municipal generation for reliability in the MISO region during energy emergency alerts. While the electric industry is continuing to transition to a cleaner energy

future with variable and less reliable daily energy production, it is critical that municipal diesel generation remain available to provide reliability for the region, especially during events like a polar vortex when natural gas is often not available.

It should be noted that, in 2020, MRES members achieved an 84 percent carbon-free energy mix through

the addition of renewable and carbon-free resources, along with the reduced operation of our coal-fired power plant.

Other MRES peaking resources include the Exira Station, located near Brayton, Iowa—a natural gas combustion turbine that provides 140 megawatts (MW) of peaking power. The Watertown Power Plant, located in Watertown, S.D., operates on fuel oil and

can generate up to 65 MW of electrical power.

The Minnesota Municipal Power Agency (MMPA) operates a variety of fossil-fueled and renewable resources, including biogas, wind and solar. Dispatchable resources include:

Faribault Energy Park is a 300-MW combined-cycle facility which runs during periods of higher demand for electricity.

MMPA also operates the 46-MW Shakopee Energy Park, located near Canterbury Park. The plant uses fuel-efficient reciprocating engines to

generate local, reliable power for Shakopee as well as contributing to the overall power supply for all MMPA member communities. Liquefied natural gas (LNG) is kept on site at Shakopee Energy Park for use as a back-up fuel. SEP provides the Agency with peaking power during times of high energy use. The facility provides additional benefits to the Agency, including local interconnection to avoid high voltage transmission costs and increased local reliability.

Wisconsin court rules on request to slow proposed transmission line

Despite challenges, American Transmission Co., ITC Midwest and Dairyland Power Cooperative, the co-owners of the Cardinal-Hickory Creek Transmission Line

Project, said construction of the 102-mile, 345,000-volt electric transmission line has started in Wisconsin.

The project will “provide a vital link to the future of our

region’s renewable energy developments,” said the companies.

Vegetation removal reportedly commenced in Dane County on Nov. 1. Pre-construction activities have been ongoing since the Public Service Commission of Wisconsin (PSCW) approved the project in September 2019. Construction of the project in Iowa began in April 2021.

On Nov. 2, the companies said they were disappointed with a Nov. 1 ruling by the Federal District Court for the Western District of Wisconsin to issue a preliminary injunction on the transmission line project, but noted that the ruling only applies 15.56 acres of federal jurisdictional waters along the 87-mile Wisconsin project segment. The utilities can continue project construction in Wisconsin in areas not affected by the preliminary injunction.

The Wisconsin Supreme Court Nov. 8 denied a request to block a lower court order that could allow opponents to temporarily stop construction of the line from Iowa across southwest Wisconsin.

A Dane County Circuit Judge in October granted an injunction that paused construction while challenges to the \$492 million project’s permit were considered. The high court said the utilities can follow traditional procedure and ask the court of appeals to review the injunction.

The order is unlikely to affect work on the line between Middleton and Dubuque, Iowa, because opponents have been unable to put up \$32 million to cover the potential costs of a delay, which would ultimately be passed on to consumers if the legal challenge fails.

Currently, said the companies, there are 114 generation projects, including 108 with more than 17 gigawatts of renewable generation, dependent upon Cardinal-Hickory Creek project construction—enough to power millions of homes with clean energy. This includes nearly 1.5 gigawatts of renewable generation from Wisconsin.

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The federal Energy Information Administration (EIA) in November said it predicts a 6 percent increase in natural gas-fueled electric generation from 2022-25. The federal agency said the 27.3 megawatts (MW) of new generation will mostly be built in the Appalachia region, with its abundant gas supply.

Dairyland Power Cooperative has bought the RockGen Energy Center natural gas generator in Cambridge.

Dairyland serves about 500,000 customers in Wisconsin, Minnesota, Iowa and Illinois. The purchase follows the closure of Dairyland's 345-megawatt coal-fired plant in Genoa.

The Lancaster County (Nebraska) Board gave approval Dec. 16 to a special permit that would allow construction of the Salt Creek solar project, the largest solar installation in Nebraska, on the east side of Lincoln.

The nearly 3,000-acre project passed with an amendment that solar panels be at least 450 feet away from homes and that the operators participate in annual training with local fire departments.

On Dec. 15, the North Dakota Public Service Commission granted Basin Electric Power Cooperative's request for a waiver from the state's light mitigation law for its PrairieWinds ND1 wind farm south of Minot, near intercontinental ballistic missile silos in central North Dakota. The waiver for PrairieWinds stems from the Air Force's concern that installing such a system could pose safety and security risks.

The waiver means lights can continue to blink at night, but that could change in the future if new technology becomes available that satisfies the Air Force, which flies helicopter missions in the vicinity.

North Dakota law addresses light mitigation systems. Wind farms can seek a waiver or extension of requirements based on economic or technical feasibility reasons.

On Dec. 14, the Johnson County (Missouri) Planning Commission approved regulations that reduce the permit life for solar farms from 25 years to 20, the maximum area for such projects from

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2,000 acres to 1,000 and lengthens the distance a solar farm could get to a city limits to two miles, up from one and a half.

Commissioners also approved rules that would require additional setbacks if an adjacent property not in the solar project was surrounded on two or more sides, or more than half of the exterior property line.

The proposed regulations now go to the county commission for its consideration.

On Dec. 14, the Reno (Kansas) County Commission voted unanimously to ban commercial wind development in all zoned areas of the county. A plan to create a new zoning overlay district that would regulate wind for un-zoned areas of the county was tabled.

Meanwhile, WEC Energy Group's 190-MW Jayhawk Wind Farm in Bourbon and Crawford counties, Kansas, has gone into commercial operation. The facility is generating energy that is being sold under a long-term contract to Meta, formerly the Facebook company.

Nebraska Public Power District's (NPPD) Board of Directors on Dec. 13 approved a goal to achieve net-zero carbon emissions from generation resources by 2050. NPPD currently serves its Nebraska customers with roughly 65 percent carbon free energy resources, due in large part to the Cooper Nuclear Station, in addition to hydro, wind and solar generation.

President Biden on Dec. 8 signed an executive order that directs the federal government to procure 100 percent carbon free electricity on a net annual basis by 2030.

The order directs the federal government to make only zero-emission vehicle purchases by 2035, including 100 percent zero-emission cars and other light-duty vehicles by 2027. The order also directs the government to achieve a net-zero emissions building portfolio by 2045 and net-zero emissions from federal procurement no later than 2050.

Other interim goals include cutting greenhouse gas emissions from federal buildings in half by 2032 and from all federal operations by 65 percent by 2030.

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The Pennsylvania Supreme Court heard oral arguments Dec. 7 urging the court to reject a smart meter mandate promoted by the state's Public Utility Commission (PaPUC) and PECO, a local utility company. The smart meters in this case use wireless technology transmitting antennas that continuously communicate the electric usage to the utility company.

Arguing that the meters are a cause of ill health effects were 81 organizations, 57 doctors, and 19 scientists.

The Build Back Better bill approved by the U.S. House and (formerly) under Senate consideration reportedly included nearly \$12.6 billion to

help electric cooperatives retire coal plants and invest in carbon-free and low-carbon electric generation.

Colorado cooperative Delta-Montrose Electric Association (DMEA) said in a Nov. 29 update to its customers that, as a result of a malicious cyberware attack, it had "lost 90 percent of internal network functions and a much data, while other work was corrupted and phones and emails were affected.

Fortunately, DEA completely separated its information and operational technology networks, so there was no clear path for the infected IT system to affect the utility's electric distribution system.

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3 www.bls.gov/oes/2017/may/oes472152.htm

Biwabik:

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barge, complicating operations.

Over the years, the multinational mining company now known as ArcelorMittal, “was very diligent in observing the Canton raft and recommending the move when necessary,” Sherek said. “With the dewatering, we knew the raft would have to be moved back down, at great expense.”

The issue of mining activity threatening a municipal water supply was bigger than either the mining company or the city. The Minnesota Department of Natural Resources (DNR) and Minnesota Department of Health (MDH), which share the state’s water regulatory duties, were soon involved. Public hearings were held.

Sherek recalls at least three meetings with superintendents and engineers of the to discuss the issue. A significant move early in the process was the company’s placement of a significant amount of money in escrow toward an eventual solution of the problem.

There was a real sense of urgency. At one point, water in the Canton pit was dropping by a half-foot a month. The problem was obvious, but not the solution.

Trace pollutant levels were still present in the old municipal wells. Nearby Em-

barass Lake was considered as a source but found to suffer contamination from a more benign source: tannic acid from pine trees.

ArcelorMittal then drilled a 680-foot test well. The shaft went through 425 feet of bedrock. Sherek watched the test well drilling. “It was throwing up tailings like a taconite mine,” he said. The effort was futile: the well pumped 128 gallons of water per minute; the city needed 400.

Attention turned to the abandoned Embarass Mine pit. Like the Canton pit, the Embarass pit is spring fed and also collects precipitation. Biwabik had positive experience with pit water, which was found to be very pure and needed minimal treatment. Water in the Embarass pit was also found to be very pure.

With a suitable source identified, a two-year project was undertaken to design and build the infrastructure to move water to the municipal water treatment facility.

Many people and contractors contributed to project success. Mining engineer Steve Mekkes was instrumental in acquiring land access to the pit. Barr Engineering designed the project. In 2017, ArcelorMittal engaged Ulland Bros. to lay 22,000 feet of pipe from the pit to the treatment plant. Work was finished in 2019. Minnesota Power laid new electric lines.



Dave Sherek is pictured here with the Biwabik water system barge. While it might look like a pontoon boat out on the water, this view reveals the heavy-duty buoyancy of the unit.

A new barge was delivered by GPM of Duluth in September. A cantilevered ramp was attached to the barge and anchored by two 17,000-pound blocks of concrete attached to cables. Ulland installed the 17- by 10- by 3-foot cement anchor base in July. Hunt Electric connected the pump motors to the electric house GPM provided.

Sherek credited final project success to the work of Biwabik’s PeopleService operator, David Levelwind (who catches lake trout in the pit), Barr and SEH engineering and the ArcelorMittal environmental engineers.

Several Biwabik city administrators were involved, as were numerous city policymakers. Sherek, who has

served on the Commission for more than 17 years and is its current chair, was a constant.

The city charter used to mandate term limits for commissioners. As the water issue evolved a change to the charter—eliminating the term limits provision—was approved by the voters. That allowed Sherek to officially stay on the job.

He isn’t going to resign now, he said, though he “might coast for a while.” With a good operator on the job, now is the time to “make sure everything is running smoothly.”

Other improvements made

Biwabik has also recently rebuilt its streets, alleys, sidewalks, sanitary sewer collection and storm water drain-

age systems. Funding came through with a 40-year, \$5.8 million United States Department of Agriculture (USDA) loan and grant, Iron Range Resources and Rehabilitation Board public infrastructure grant and other sources.

The majority of Biwabik’s water and wastewater infrastructure had dated to the early 1900s. Deterioration allowed system infiltration and inflow. Rates went up to repay the 40-year loan but people saw the need for the improvements and have been supportive. A plus for city workers is that frozen water lines and the need to repair broken lines are no longer a common occurrence.

Upcoming Events

Legislative Conference

February 8-9, DoubleTree Hotel, St. Paul

The 2022 Legislative Session promises to be an exciting time at the State Capitol. Distributing billions of dollars of federal funding, a bonding bill that has in excess of \$5 billion worth of requests, and completing issues carried forward from 2021 are just some of the important matters with which the Legislature will be dealing.

MMUA’s Legislative Conference provides an important opportunity for MMUA members to remind legislators of the important role municipal utilities play across the State and the issues important to them and their customers. And after a nearly two-year hiatus, we are planning on in-person meetings and social time with legislators.

Reservations sought after Jan. 9 will be accepted depending on space and rate availability.

Electrical Skills Training for Water/Wastewater Operators

February 16-17, MMUA Training Center, Marshall

This workshop is full with 30 attendees and we have started a wait list.

Basic Metering Pre-Conference and Meter School

Feb. 22-23 & Feb. 23-25, MMUA Training Center, Marshall

These are our annual opportunities to get valuable hands-on meter training. The Pre-Conference is an ideal introductory or refresher course. Meter School offers tracks for Basic/Intermediate or Advanced. Instructors include Larry Chapman and staff from Chapman Metering, John Pollard of TSTM, Inc. and Scott Murfield and Bruce Westergaard of MMUA.

Register by Jan. 16 for best rate!



Substation School

April 5-7, MMUA Training Center, Marshall

Mark your calendar now for this popular school!

Generation School

April 19-21, Hutchinson

Planning is also underway now for this important get-together. Mark your calendars now!