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Keeping The Lights On In Vermillion

Joni Prescott Talks Missouri River Energy Services

By Sarah Wetzel For the Plain Talk, Posted September 15, 2022

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Joni Prescott, vice president of Member Services and Communications at Missouri River Energy Services (MRES) fields a question from a member of the Vermillion Rotary Club. She shared information about the MRES and the role it plays in providing to power to Vermillion and other communities.
Courtesy of Vermillion Rotary Club

Joni Prescott, Vice President of Member Services and Communications at Missouri River Energy Services, MRES, gave a presentation to the Vermillion Rotary Club this summer to share information about the agency.

This joint-action agency was formed by its members and is owned by the members which include Vermillion as well as 60 other members across four states.

According to Prescott, the nonprofit agency was formed to provide power supply to all the members which has expanded to include many other energy services.

“We were originally started to provide supplemental power but there was a group of

municipalities in Northwestern Iowa originally that wanted to get an allocation of hydropower from the dams on the Missouri river,” Prescott said. “So, they informally got together, and they worked on getting those allocations of hydropower. They talked to a lot of other municipal utilities and they were successful in doing that and then they formed Missouri River Energy Services which is our name now.”

According to Prescott, one benefit or working together, joint action, is to gain cost advantages that would be difficult otherwise.

“Each member utility back in the day typically had its own generation and then they joined together to get WAPA hydropower,” Prescott

said. “Over the years our members have worked together to get discounted services on many other types of services that help them run their utility and also help them serve their customers better.”

The Western Area Power Administration, WAPA, is one of four power marketing administrations in the U.S. Department of Energy.

According to Prescott, WAPA has consistently been one of the least expensive power supply resources in the United States.

“One of our biggest jobs is to advocate for our members with Western Area Power Administration,” Prescott said. “It seems like every time there’s a new administration in the White House, they want to change how WAPA provides their hydro allocations to people. They either want to cut those allocations back and give them to other people or they might want to change the cost-based rate structure.”

Prescott said since MRES members have been paying the costs of the dams on the Missouri river they have been working hard to keep that resource for members.

“Working together, you also have a larger voice with legislators and regulators,” Prescott said. “We kind of provide unified messages to them.”

According to Prescott, MRES helps administer the contracts with WAPA and also schedules the power to the members, including Vermillion.

“Our 24-hour operations center makes sure that the WAPA power gets to each one of our member utilities,” Prescott said. “We work through an administrator services agreement. WAPA bills us for all the power that is provided to our members and then we just pass that to you on your power supply bill and at no added cost.”

According to Prescott, the MRES power bill includes WAPA power, Missouri River Power as well as the transmission that gets the power to the community.

The Southwest Power Pool, SPP, is the regional organization that transmits the power, schedules generation and ensures reliability.

According to Prescott, the MRES has had a good history of rate decreases in recent years with a 3% decrease in 2019 and a 5% rate decrease starting in January of this year.

“We’ve just had very good financial outcomes,” Prescott said. “We’ve done some interest rate swaps and our previous financial officer just did a tremendous job. We are predicting stable rates for the next few years.”

Prescott also reported that due to the financial officer, a talented board and COVID, the agency was able to provide a refund of almost \$165,000 to Vermillion in December of 2020.

“During COVID we weren’t selling as much power, people were using less power, but our costs were actually even lower than our reduced revenue,” Prescott said. “So, what we did is we gave a 10% refund to each of our members in December.”

Prescott also reported that in May of 2021, a six-year-long case was settled in the Federal Energy Regulatory Commission for another refund of almost \$300,000 for Vermillion.

“That was almost 28% of an annual bill here and it was the first time it happened since I worked at Missouri River,” Prescott said. “Very exciting for us.”

According to Prescott, the retail rates in Vermillion are very favorable compared to other regional utilities in the area.

“Vermillion’s rates are about 30% less than the highest rate in the region and about 9% less than the median rate and this is residential,” Prescott said. “If we look at large commercial rates, you’re really second lowest, so 12% lower than the median and 34% lower than the highest rate in the area, so there must be some really good management at city hall I would say.”

Prescott said MRES is continually trying to make the power supply cleaner and more resilient.

“About 40% of our overall member power supply comes from Western Area Power Administration,” Prescott said. “And then we have a large mix of coal, natural gas, nuclear, diesel, hydropower, wind and a little bit of solar in here.”

Prescott said they also contract with 19 members who have diesel generators which mostly only run during emergencies and extreme weather events.

Prescott also shared information about the new Red Rock Hydroelectric project located on the Des Moines River.

The project, 14 years in the making, went into commercial operation in June of 2021 and is doing very well, according to Prescott, despite some difficulties in the construction process.

“It was a Murphy’s law situation in building this,” Prescott said. “As we were building it, we had to stop construction about three times due to flooding and then as soon as it went commercially operational, we had a drought and it took a long time to even get it tested and online, but it’s running very well now and it’s another really good clean renewable reliable resource.”

According to Prescott, the use of fossil fuels in the area have been reduced.

“In 2021, we were 74% carbon free and 43% renewable, so we’re really proud of that and we’ve been working on that for a long time,” Prescott said.

According to Prescott, Vermillion’s power supply individually is made up of 58% hydropower, 16% coal, 3% wind, 4% nuclear and 2% natural gas.

“Overall, your power supply is 61% renewable here and 82% carbon free which is a really great mix,” Prescott said. “National average, to kind of give you a comparison, would be 20% renewable and 40% carbon free.”

For the Vermillion area, MRES uses the Southwest Power Pool, SPP, to call upon power generation to either run or shut down to match the demand of the customers.

“Electricity always has to match demand and they call on the lowest cost resources first,” Prescott said. “It’s the opposite of what you think of as a market.”

Lowest cost is often wind, solar and renewables, according to Prescott. Other generation is called upon as demand rises throughout the day or purchased if that becomes a cheaper option.

Unreliable power generation during emergencies can cause lots of problems, such as the 2021 Polar Vortex which caused dramatic outages in Texas and the southern United States.

“During the polar vortex, the problem was that about half of the generation in Texas was not available and that was largely their own fault because they had gas plants and even coal plants that froze up. They just did not have them protected.”

Rolling blackouts occurred for about 20,000 megawatts according to Prescott who gave the comparison that all the dams on the Missouri River are around 2,000 megawatts.

Even in the Vermillion region during that time, Prescott said there was not as much power available because gas was being curtailed.

“When there are extreme temperatures, the gas companies just can’t provide enough gas for all the demand, so electrical generation is down on the list,” Prescott said. “Their top priority is heating for homes and businesses, so this is what was going on.”

According to Prescott, MRES’s generation during that time was still all available due to some excellent foresight from their engineers, making their southern Iowa plant a dual-fuel plant.

“We can switch and run on diesel fuel and that’s what we did,” Prescott said. “We had tankers coming out there constantly and we were able to run throughout the whole polar vortex. Also, any members that we had with their own generation ran.”

Some communities still experienced power outages, Prescott said, but luckily only for a few hours.

“Missouri River made \$42 million that week,” Prescott said. “The bad part of that is others lost tons of money, but we were very fortunate.”

Prescott said MRES has been working on reliability contingencies in the case of any future energy shortages.

One concern Prescott brought up was the future of power supply regarding electric vehicles.

“The entire US is really pushing electric vehicles and we support electric vehicles as well,” Prescott said. “We think they’re a great idea but the key for the electric industry at least for the next 10 years is to keep charging off peak. So, for us that means that for residential chargers we really want to encourage people to charge like after eight o’clock at night, maybe even after 10 at night. Charge overnight.”

Electric buses, over the road trucks and fleets that would charge during the day taking huge amounts of power is a cause for concern in the industry, according to Prescott.

“We’re working on that problem and the whole electric industry is, but right now we cannot support those huge chargers during the day,” Prescott said. “The chargers even sometimes have capabilities themselves and Vermillion has a load control system.”

Car owners who want to quickly charge their electric vehicles will not be happy, Prescott said, since the rate of charging needs to be ramped down to avoid damaging the system.

“I don’t know the answer of how it’s going to work,” Prescott said. “Hopefully, we can figure that out, but residential cars are not going to be so much the problem as the really huge ones. A residential car might charge at somewhere from 7 to 13 KW and a big truck or bus might charge at 350 KW so it’s a huge difference.”

As far as future projects, Prescott said MRES is looking into some solar installation to add some

more renewable energy to their profile as well as adding a natural gas plant most likely in North Dakota or South Dakota where the reliability is needed.

“We can’t continue to make the transition to a lot of renewables when coal plants and gas plants are actually shutting down,” Prescott said. “We have to have something for reliability until we can develop small modular nuclear or hydrogen technologies. Those are in the future but they’re not going to be available for a minimum of 10 years.”

Prescott said they’re also looking into a hydro storage project that would be located in Gregory County, South Dakota.

“How pump storage works is that the lower reservoir would be lake Francis Case on the Missouri River and we would create a new upper reservoir on a bluff that is about 700 feet above Lake Francis Case,” Prescott said. “Then when the wind’s blowing and the sun’s shining, we’ve got a lot of renewables and they’re very inexpensive. When the wind is really blowing, we would pump water up to the top reservoir and then when the wind stops blowing, we can let that water go and generate electricity to create reliability. So, it kind of acts as a huge battery but it’s a water battery, you might say.”

Just studying this project will take years, according to Prescott.

“We’ve been doing outreach to landowners,” Prescott said. “We had a meeting last night in Platte and of course landowners are going to be very concerned about it. There will be easements and we will have to buy some property but we’re years away from making this decision and if everything went perfect it would come online in 2036, so this is how long this project might be.”

In the meantime, Prescott said, MRES remains committed to providing the services members need and keeping the lights on.

For more information on the Missouri River Energy Services, visit www.mrenergy.com.