

**STATE OF NORTH DAKOTA
PUBLIC SERVICE COMMISSION**

**Montana-Dakota Utilities
Applied Block Chain – Dickey County
Public Convenience and Necessity**

**Case Nos. PU-22-370
PU-22-366**

**Dakota Valley Electric Cooperative, Inc.’s
PROPOSED FINDINGS OF FACT, CONCLUSIONS OF LAW AND ORDER**

APPEARANCES

Commissioners Julie Fedorchak, Randy Christmann, and Sheri Haugen-Hoffart.

Paul Sanderson, Evenson Sanderson PC, 1100 College Drive, Suite 5, Bismarck, ND 58501 appearing on behalf of Montana-Dakota Utilities Co.

Kimberly J. Radermacher, Radermacher Law Firm, P.C., 506 Main St., P.O. Box 103, Edgeley, ND 58433, appearing on behalf of Dakota Valley Electric Cooperative, Inc.

John Schuh, Legal Counsel, North Dakota Public Service Commission, State Capitol, Bismarck, ND 58505, appearing on behalf of the Public Service Commission.

Hope Hogan, Office of Administrative Hearings, 2911 North 14th Street, Suite 303, Bismarck, ND 58503, appearing as Administrative Law Judge.

PRELIMINARY STATEMENT

[1] This matter came before the North Dakota Public Service Commission (hereinafter “Commission”) on application of Montana-Dakota Utilities Co. (hereinafter “MDU”) to serve a 180 MW data processing center and related office space being built by Applied Digital f/k/a Applied Blockchain (hereinafter “Applied”) to be located in the SE¼SE¼ of Sec. 4 and NE¼NE¼ of Sec. 9, all in Twp. 129N., Rge. 63W., Dickey County, North Dakota (hereinafter “Applied Blockchain site”). The applications for temporary authority were filed with the Commission on September 16, 2022, and for permanent authority on October 14, 2022. A protest and request for hearing were filed by Dakota Valley Electric Cooperative, Inc. (hereinafter “Dakota Valley”) on October 24, 2022.

[2] On November 17, 2022, the Commission issued a Notice of Opportunity for Hearing setting forth the following ten factors the Commission must consider in granting or denying MDU’s applications for certificates of public convenience and necessity in these matters:

1. From whom does the customer prefer electric service?
2. What electric suppliers are operating in the general area?
3. What electric supply lines exist within at least a two-mile radius of the location to be served, and when were they constructed?
4. What customers are served by electric suppliers within at least a two-mile radius of the location to be served?
5. What are the differences, if any, between the electric suppliers available to serve the area with respect to reliability of service?
6. Which of the available electric suppliers will be able to serve the location in question more economically and still earn an adequate return on its investment?
7. Which supplier's extended electric service would best serve orderly and economic development of electric service in the general area?
8. Would approval of the applications result in wasteful duplication of investment or service?
9. Is it probable that the location in question will be included within the corporate limits of a municipality within the foreseeable future?
10. Will service by either of the electric supplier in the area unreasonably interfere with the service or system of the other?

[3] On December 19, 2022, a public hearing (“hearing”) on the applications in both matters was held as scheduled. At the hearing, Applied representatives, Wes Cummins and Etienne Synman, and MDU representatives, Larry Oswald, Bruce Brekke and Darcy Neigum, testified on behalf of MDU. MDU submitted 19 exhibits during its case-in-chief. Testifying on behalf of Dakota Valley were Dakota Valley representatives, Mark Kinzler and Brandon Giesler, Central Power representative, Thomas Meland, and Basin Electric representative, Jason Doerr. Dakota Valley submitted 20 exhibits during its case-in-chief.

[4] On December 30, 2022, MDU and Dakota Valley filed closing arguments and briefs.

[5] Having heard and considered these matters, the Commission makes its:

FINDINGS OF FACT

[6] MDU is an investor-owned electric utility providing electric service to customers in North Dakota under the regulatory jurisdiction of the Commission.

[7] Dakota Valley is a rural electric cooperative providing electric service to its members in North Dakota.

From whom does the customer prefer electric service?

[8] MDU’s application included an appearance form signed by the customer, Applied, indicating

it desires electric service from MDU at the Applied Blockchain site. The customer appearance was dated August 25, 2022.

[9] Wes Cummins and Etienne Synman, on behalf of Applied, also testified at the hearing indicating that Applied would prefer electric service from MDU. The primary reason for Applied's preference relates to the difference between rates relative to the data processing center. Applied representatives testified that it needs to take electric power at the cheapest rate possible to remain competitive in its field.

[10] While customer preference is not a controlling factor, the Commission finds that the customer does prefer electric service from MDU.

What electric suppliers are operating in the general area?

[11] Dakota Valley and MDU are the only electric suppliers operating in the general area of the Applied Blockchain site. Dakota Valley primarily provides single-phase service to rural customers adjacent to the site and has three-phase service within a 2.5-to-3-mile radius of the site. MDU provides three-phase service to approximately five customers along the Highway 11 corridor and also provides electric service in the nearby community of Ellendale.

What electric supply lines exist within at least a two-mile radius of the location to be served, and when were they constructed?

[12] According to Exhibit MDU-4, MDU has a 41.6 kV overhead transmission line that runs in various directions from the Applied Blockchain site that ultimately interconnects with the Central Power Electric Cooperative (hereinafter "Central Power") Ellendale substation. Dakota Valley would utilize to extend three-phase service to the Applied Blockchain office site. MDU also has a three-phase overhead line in the general area. It is not entirely evident from the record when these lines were put into service. MDU also has a 345 kV substation near the Applied Blockchain site that was granted a CPCN in September of 2013, as well as a 230 kV substation (date of construction unknown). The 345 kV substation is subject to the rules and regulations of the MISO Open Access Transmission and Energy Markets Tariff and currently serves no MDU customers. MDU's 230 kV substation serves the city of Ellendale, as well as several other cities according to testimony from MDU representatives.

[13] Dakota Valley has a single-phase overhead line that crosses the east side of Applied's property, which could be easily accessed to provide service to the office site. The line was put in sometime in the late 1940's and comes out of the Central Power Ellendale substation to the north and continues south past the Applied Blockchain site. It would be Dakota Valley's intention to replace this single-phase overhead line with three-phase underground line as part of its line extension to the Applied Blockchain site. Dakota Valley has a multi-phase member to the south of the site that would ultimately benefit from the three-phase extension. There is also a cattle rancher

to the east of the site that could benefit as well. In addition, Dakota Valley has two more overhead single-phase lines and a single-phase underground line within the two-mile radius. Dakota Valley has three-phase line just outside of the two-mile radius to the east. Brandon Giesler testified that this three-phase line could be extended off of as well to provide service; however, the more logical point of connection appeared to be out of the Ellendale substation given the already existing single-phase service on that route. The Ellendale substation, which is located north of the Applied Blockchain site and outside of the two-mile radius, was completely replaced by Central Power in 2006 and received upgrades in capacity in 2009 and 2016. In 2016, Central Power also did additional maintenance to the substation. Central Power has made in excess of \$281,000.00 in improvements to the substation.

[14] In order to serve the office site, both Dakota Valley and MDU would have to make new extensions off of their existing lines/infrastructure. MDU would have to extend three-phase service approximately 2,000 feet at a cost in excess of \$63,953.29, which is close to \$20,000.00 over the original estimate provided by MDU. At the time of the hearing, MDU had incurred contractor expenses of \$43,953.69 and had estimated that over \$20,000.00 of materials had not been included in those numbers. It is not known whether the line extension to the office was complete at the time of the hearing and whether additional contractor costs would be incurred. Dakota Valley would extend service approximately 15,500 feet from the Central Power Ellendale substation at an approximate cost of \$141,968.84, which would be an overall system improvement and not just an extension for the benefit of the Applied Blockchain site.

[15] Both MDU and Dakota Valley have considerable infrastructure in the area. While MDU technically owns the 345 kV substation to be utilized for the data processing center, Basin Electric Cooperative, Dakota Valley's generation source, could access the 345 kV substation under the provisions of the MISO Open Access Tariff. Therefore, the only defining difference between the two electrical providers is the proximity of three-phase service to the office site. MDU's three-phase service is closer and therefore this factor weighs slightly in favor of MDU.

What customers are served by electric suppliers within at least a two-mile radius of the location to be served?

[16] MDU serves five customers (with seven service connections) within a two-mile radius of the Applied Blockchain site, excluding the City of Ellendale and MDU's own service point. According to MDU-5 and testimony of Bruce Brekke, there are an additional 70 service connections (not customers) that end up within the two-mile radius as calculated by MDU when taking into consideration the City of Ellendale and MDU's own service point.

[17] Dakota Valley serves approximately 15 customers within a two-mile radius of the Applied Blockchain site.

[18] While the Commission finds that MDU has more service connections within the two-mile

radius as a result of including some of the city limits of Ellendale within the two-mile radius, the Commission is cognizant that the measurement of the two-mile radius could vary depending on what point in Applied's property the parties used when determining the two-mile radius. The Commission is also aware that rural electric cooperatives do not typically operate in highly dense areas, such as cities, and therefore it would be unfair to include any customers within the city limits of Ellendale when determining this factor. The Commission finds that Dakota Valley serves more customers within at least a one-mile radius of the Applied Blockchain site than does MDU and finds the same to be true relative to the two-mile radius when excluding the city limits of Ellendale.

What are the differences, if any, between the electric suppliers available to serve the area with respect to reliability of service?

[19] In this case, the Commission tends to agree with Dakota Valley's assessment that either electrical supplier could serve the Applied Blockchain site with reasonable reliability. Dakota Valley proposes to extend service to the data processing center from MDU's 345 kV MISO substation, which is the same point of access that MDU would extend service. Therefore, weighing the reliability of the service to the data processing center is superfluous. Where there could be a difference would be the service to the office site. However, even so, it is worth noting that MDU's 41.6 KV transmission line interconnects with the Central Power Ellendale substation. According to Exhibit DVEC-14, a majority of the outages at the Ellendale substation were as a result of MDU's transmission line. Since the reliability of Central Power's Ellendale substation relies heavily on the reliability of MDU's transmission line, it would also be erroneous to compare the two providers in that aspect. MDU argued at the hearing that a 2,000-foot extension is more reliable than a 15,500-foot extension. However, MDU did not take into account the actual number of customers it serves off of the 230 kV substation where its office extension is coming from in making that assessment. MDU representatives testified that in excess of 700 customers in the vicinity of Ellendale are served from that substation, as well as several other cities. Dakota Valley, on the other hand, only has approximately 256 service connections on the Central Power Ellendale substation. This plays into the issue of reliability.

[20] At the hearing, both parties submitted SAIDI statistics dating back to 2017. The difficulty with comparing SAIDI statistics between the two electrical providers is the actual data used to calculate the statistics, as well as the number of members/customers served by each. MDU serves customers in at least four states, whereas Dakota Valley serves approximately eight counties within the state of North Dakota. Outage statistics are typically based on consumer average and SAIDI is specifically calculated by taking the average duration of interruptions per consumers during the year (See DVEC-15). It is the ratio of the annual duration of interruptions (sustained) to the number of consumers. Therefore, a SAIDI statistic of 81 means something quite different for an electric supplier that has only 4600 members versus an electric supplier that has 425,000 customers. Furthermore, MDU did not testify as to what factors were used in calculating its SAIDI statistics provided in Exhibit MDU-17. There are many factors that go into calculating SAIDI, such as major events, power supply issues, planned maintenance, etc. In DVEC-15, Dakota Valley sets forth each

SAIDI statistic for comparison. However, MDU did not do that in its Exhibit MDU-17, therefore the Commission is not able to accurately compare the SAIDI statistics provided by each electric supplier. Because of the interplay of MDU's infrastructure with Central Power and Dakota Valley's, it would not be appropriate for Dakota Valley to say that MDU is less reliable than Dakota Valley. The same goes for MDU. As such, without taking into consideration required interruption or curtailment of service, as would be mandated by the MDU/Applied ESA, this factor does not weigh in favor of either electric supplier as both could serve the site with reasonable reliability. If interruption/curtailment requirements are considered, then this factor weighs in favor of Dakota Valley as Dakota Valley's proposed rate structure does not require any interruption.

Which of the available electric suppliers will be able to serve the location in question more economically and still earn an adequate return on its investment?

[21] Both Dakota Valley and MDU would need to make some improvements and financial investment to their systems to bring electric service to the Applied Blockchain site. Both parties acknowledged that any line extension to Applied's data processing center would be passed on 100 percent to Applied. Dakota Valley and Central Power argued that its cost of extension using MDU's MISO substation would be substantially similar, if not the same, as that proposed by MDU. MDU argued that if it held the load on the 34.5 kV tertiary, that Dakota Valley and Central Power would be required to extend off of the 230 kV side of the substation, which would require a much more expensive extension. However, for MDU to hold the load would likely result in a missed opportunity for Applied as it is unlikely Applied would extend with the additional costs and the unknowns of whether the substation could sustain over 360 MWs of load. The Commission does not find this to be prudent or economical. As such, the Commission finds that the parties would incur similar costs in extending service to Applied's data processing center site.

[22] As to the office extension, MDU submitted Exhibit MDU-9, which sets forth MDU's cost of extension. However, at the time of the hearing, it was learned that MDU had already experienced cost overruns by having to contract out the labor and that the actual cost for the extension would be somewhere in the ballpark of \$20,000 over the original estimate. Dakota Valley submitted Exhibit DVEC-12, which shows the estimate for its line extension to be \$141,968.44, which Dakota Valley acknowledges is approximately twice as much the line extension proposed by MDU. Worth noting, however, is that while it is twice as much in value, it is over 7 times in length, showing the average per foot extension by Dakota Valley is significantly less than MDU. Unlike MDU, Dakota Valley's proposed extension is not for the sole benefit of Applied, but rather a system-wide improvement. Instead of extending service from the east, Dakota Valley saw an opportunity to take the existing single-phase overhead line crossing Applied's property and convert it to three-phase underground, with the future goal of continuing south to clean up a multi-phase account down the line. Because of this, Dakota Valley was willing to cover additional costs associated with the line extension. Dakota Valley also has other members in the area that could ultimately benefit from having three-phase service in the area.

[23] As to rates, there are some differences between the two electric suppliers. The Commission is aware that this is likely a result of the advanced planning MDU had as compared to Dakota Valley. At the time that Applied began shopping for a second site in North Dakota, Applied indicated that MDU did not have a rate that Applied would have been willing to take electric service under. However, in the first half of 2022, MDU began development of its Rate 45, which was introduced to this Commission for approval on August 1, 2022. On August 1, 2022, Dakota Valley had no knowledge of the potential load. By the time that Dakota Valley became aware of the load, it had little time to develop a rate in time for the December hearing before this Commission. In looking at Rate 45 and the ESA signed between MDU and Applied on September 1, 2022, relative to the data processing center, there is technically no set rate by which Applied would take power from MDU. The only defined rates are the basic monthly service rate and MDU's per kWh transaction charge. The remainder of the charges typically assessed by MISO are passed on to Applied. In MDU-12, MDU sets forth two different rates – one using the average MISO energy charge for the MDU load node and one for the average MISO energy charge for Ellendale LMP (Day Ahead). The Commission agrees with Dakota Valley that the first rate provided by MDU should be used in weighing this factor.

[24] In reviewing Exhibit MDU-15, MDU used monthly kWhs of 123,120,000, while Dakota Valley used monthly kWhs of 124,830,000. MDU's reasoning was that it used a 30-day month, resulting in 360 days, rather than 365 days. When asked what difference this would make in rate calculations, MDU representative Larry Oswald indicated that Dakota Valley's monthly bill estimate would be reduced by approximately \$54,000.00, with a total annual difference of approximately \$650,000.00. Therefore, Dakota Valley's monthly revenue estimate would be around \$7,867,054 rather than \$7,921,054, without the Demand Response Rate credit and \$7,147,054 rather than \$7,201,054 with the Demand Response Rate credit. Dakota Valley's argument that the disparity gets smaller when taking into consideration capital credits, no required curtailment/interruption in service, no security deposit requirement and stable rates that are not subject to market fluctuations has some merit. Dakota Valley estimated that Applied would receive approximately \$1.5 million back via capital credits annually. While capital credits are paid out over time, it is still an asset to Applied at the moment they are earned that will never be lost even if Applied terminates service with Dakota Valley. Furthermore, in determining rates, Dakota Valley did not calculate the Demand Response Rate credit provided by Basin Electric as that is an option that Applied can apply for and take, if it so chooses. However, there is no requirement by Dakota Valley that Applied take interruptible service. It is evident that Applied would have to curtail to some extent under MDU's rates in order to keep its power costs down. The same would be true if Basin Electric ultimately develops its market-based rate as proposed in mid-2023. MDU also requires a significant security deposit from Applied by way of an irrevocable letter of credit, whereas Dakota Valley is only requesting that Applied pre-pay its electric bill on a bi-monthly basis. As such, there are expenditures and a reduction in borrowing power by Applied in taking service with MDU that it would not experience by taking service from Dakota Valley.

[25] As to the office site, MDU estimates cost of power to Applied to be approximately \$11,114.00 annually (See MDU-13). Dakota Valley estimates cost of power to be approximately \$7,971.00 (See DVEC-5). In making its calculations, MDU assumed annual usage to be in the ballpark of 84,000 kWh, whereas Dakota Valley estimated usage to be approximately 70,000 kWh/ If Dakota Valley were to use the same numbers as MDU, Dakota Valley would still be cheaper at approximately \$9,284.00 annually. Dakota Valley representatives testified that depending on actual energy usage that Applied may be able to qualify for the Commercial Incentive Rate Discount (See Exhibit DVEC-4), which would further decrease Applied's office site bill.

[26] Based on the proposed revenue that would be generated by each electrical provider in comparison to each provider's proposed cost of extension relative to both services, it is evident that both parties would earn an adequate return on its investment. Loads such as the one proposed by Applied are unheard of and would have a significant impact on the revenue of each electrical provider. As such, return on investment is not an issue for either party.

[27] In solely comparing the rates provided by each electric supplier for the data processing center, the Commission finds that this factor weighs in favor of MDU. However, the Commission also finds merit in many of the points raised by Dakota Valley on this issue. Therefore, the Commission does not find this factor to be as controlling in this case and as a result, affords it less weight in making an overall decision.

Which supplier's extended electric service would best serve orderly and economic development of electric service in the general area?

[28] Currently, MDU has no customers along the road going north and south of the Applied Blockchain site. The only members MDU does serve within one mile of the site are along the Highway 11 corridor. It is unknown when or how MDU obtained these customers. It was assumed by many that testified at the hearing that these sites pre-dated the electric cooperative and the Territorial Integrity Act. It is evident that MDU's physical extension to the Applied Blockchain site would do nothing to benefit the customers along Highway 11. There would be no system upgrades that would ultimately benefit those customers. Rather, MDU proposes to extend off of its 230 kV substation and go north and west by 2,000 feet to bring three-phase underground line solely to the Applied Blockchain office site. This extension would serve no other customers, nor could it without MDU first obtaining a CPCN.

[29] Dakota Valley has at least four members within a 3-mile radius along the road by Applied Blockchain. The current single-phase line that follows the road serves those members. As indicated at the hearing, it would be Dakota Valley's intention to replace the single-phase overhead line with a three-phase underground line. This would improve system reliability and be a potential upgrade in service for those members along the route, particularly to the multi-phase member down the line from the Applied Blockchain site. Dakota Valley's extension isn't for the sole benefit of Applied Blockchain. Because of this, as well as because this is Dakota Valley's territory in which it serves

more members without the need for a CPCN, the Commission finds that this factor weighs in favor of Dakota Valley.

Would approval of the applications result in wasteful duplication of investment or service?

[30] Both electric suppliers will need to construct extensions or upgrades to existing facilities to serve the Applied Blockchain site. MDU's extension to the office site will result in the crossing of Dakota Valley's already existing single-phase overhead line on Applied's property.

[31] However, MDU's proposed extension would serve only the Applied Blockchain office site and will not improve MDU's electric service to the general area. Dakota Valley's proposed extension of its service is more logical and would improve Dakota Valley's electric service to the general area, not just to the Applied Blockchain site.

[32] The Commission finds that approval of the application would result in wasteful duplication of investment or service and therefore this factor weighs in favor of Dakota Valley.

Is it probable that the location in question will be included within the corporate limits of a municipality within the foreseeable future?

[33] The Applied Blockchain site is located over 1.5 miles west of the city limits of Ellendale. In the past few years, most of the development within Ellendale has occurred to the south near the Highway 281 corridor. Given the distance from the site and the lack of any recent or significant development to the west of Ellendale, it is highly unlikely that the location in question will ever be included within the corporate limits of any municipality. This factor does not favor either Dakota Valley or MDU.

Will service by either of the electric supplier in the area unreasonably interfere with the service or system of the other?

[34] Both Dakota Valley and MDU currently operate in the area and it does not appear that extensions of service by either company to the Applied Blockchain site will interfere with the other. The extension proposed by Dakota Valley does not cross over or under MDU's existing or proposed lines. However, MDU's extension would cross under Dakota Valley's existing single-phase line (which Dakota Valley concedes is not prohibited). Furthermore, because MDU's 345 kV substation is subject to MISO's open access tariff, MDU knew and agreed it was likely that another MISO member could apply for access to MDU's substation. Therefore, Dakota Valley's access to and use of MDU's substation would not unreasonably interfere with MDU's service or system. Furthermore, the use and access to said substation appears to be governed by MISO and as a result, it would be MISO and not this Commission to determine the issue of interference relative to access of MDU's 345 kV substation. This factor does not favor either Dakota Valley or MDU.

[35] The Commission finds that the public convenience and necessity reasonably requires that the Commission deny MDU's applications because:

- While the customer prefers electric service from MDU, customer preference is not controlling.
- Dakota Valley has served customers in the area since at least the 1940's and has more customers within a one-mile radius of the location.
- While both electric suppliers would be able to serve the Applied Blockchain site with sufficient reliability, Dakota Valley is not requiring that Applied take interruptible service and therefore, would be able to serve the Applied Blockchain site more reliably.
- Dakota Valley will serve the Applied Blockchain office site more economically when considering the annual costs to the customer as reflected in rates for service, and the accrual and allocation of capital credits to Applied. While MDU can serve the data processing center more economically, MDU's rates are subject to market fluctuations and largely speculative.
- Dakota Valley's extension of service would best serve the orderly and economic development of the area.
- Approval of MDU's applications would result in wasteful duplication of investment or service.

From the foregoing Findings of Fact, the Commission makes its:

CONCLUSIONS OF LAW

[36] The Commission has jurisdiction over the parties and the subject matter of this proceeding.

[37] Public convenience and necessity do not require the granting of Certificates of Public Convenience and Necessity to the applicant in these proceedings.

From the foregoing Findings of Fact and Conclusion of Law, the Commission its:

ORDER

The Commission Orders:

[38] MDU's applications for Certificates of Public Convenience and Necessity are denied. Therefore, Dakota Valley shall be permitted to provide electric service to the Applied Blockchain site.

PUBLIC SERVICE COMMISSION

Randy Christmann
Commissioner

Julie Fedorchak
Chairman

Sheri Haugen-Hoffart
Commissioner