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## STAFF MEMORANDUM

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**TO:** COMMISSIONERS AND ADVISORS  
**FROM:** PATRICK STEFFENSEN & AMANDA REISS  
**RE:** EL20-009 - In the Matter of the Filing by Montana-Dakota Utilities Co., a Subsidiary of MDU Resources Group Inc. for Approval of the Annual Update to Its Infrastructure Rider Rate  
**DATE:** April 23, 2020

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### BACKGROUND

On February 28, 2020, the South Dakota Public Utilities Commission (Commission) received a filing by Montana-Dakota Utilities Co., a Subsidiary of MDU Resources Group Inc. (MDU) for approval of the annual update to its Infrastructure Rider Rate.

Previously, on June 15, 2016, the Commission issued an Order Granting Joint Motion for Approval of Settlement Stipulation in rate case docket EL15-024. This settlement established an infrastructure rider, which allowed for the recovery of Thunder Spirit Wind (TSW1), a 107.5 MW wind farm located in Adams County near Hettinger, North Dakota. TSW1 was selected as a part of MDU's 2013 Integrated Resource Plan. After reviewing the options of entering into a PPA arrangement or owning TSW1, MDU went forward with owning TSW1.

Refer to the Confidential Staff Memorandum in Docket EL15-024 for further discussion of Staff's analysis regarding TSW1. MDU and Staff agreed to cost recovery for TSW1 through the Infrastructure Rider as a part of the Settlement Stipulation in Docket EL15-024 with the explicit provision that Staff reserves the right to propose alternative treatment or adjustments to the revenue requirement, including true-up of prior years' revenue requirements, in each annual rider filing and future rate cases.

Last year, in Docket EL19-010, the Commission approved recovery of MDU's Bowdle Substation project and the Thunder Spirit Wind Expansion project (TSW2). This expansion provides an additional 48 MW of renewable generation and was placed into service in October 2018. According to MDU's analysis of its 2017 Integrated Resource Plan, TSW2 was selected as a least cost resource in the base case and all sensitivity model runs.

Pursuant to the terms of the Company's Infrastructure Rider Rate 56 tariff, MDU filed in this current docket for Commission approval of the annual update to its Infrastructure Rider. Costs to be included as a part of the infrastructure rider are based on the South Dakota share of the monthly plant in service balances, net of accumulated depreciation and associated deferred taxes, and operating expenses related to TSW1 and TSW2. Operating expenses at TSW1 and TSW2 include labor and benefits, easement charges, and a maintenance agreement. Depreciation, property taxes, generation taxes, and expenses assessed by the Commission are also included. The production tax credits associated with the generation provided by TSW1 and TSW2 are included as a credit within the overall revenue requirement. The under-collected balance includes a carrying charge which is based on the authorized rate of return applied to the prior month's ending deferred balance, net of tax.

## **STAFF ANALYSIS OF NEW PROJECTS**

MDU is proposing to begin collecting revenue through the Infrastructure Rider rate based on the 2020 revenue requirements associated with two new projects, the Sidney Transmission Line Project and the Mandan Substation Project. An analysis of each of these projects is given below.

### **Sidney Transmission Line**

According to the 2018 Integrated Transmission Planning Near-Term Assessment planning study performed by Southwest Power Pool (SPP), MDU needs to install larger conductor on 2.75 miles of integrated system transmission line running from the Lewis and Clark Substation located in Sidney, Montana to Western Area Power Administration's (WAPA) Richland Substation near Sidney, Montana. This larger conductor will increase the summer rating of the line from 102 MVA to 189 MVA and will increase the winter rating of the line from 123 MVA to 206 MVA. While the length of the line did not meet the five miles required under statute to have this project included in MDU's transmission cost recovery (TCR) rider, MDU confirms the facility credits received from SPP for this network upgrade will be passed back to customers through the TCR.

MDU has stated the selected contractor is familiar with this specific work in Sidney, has experience working with the Company, and has construction crews located in the general area. MDU has also indicated that the material and equipment is purchased through an alliance agreement with Border States Electric, and the least cost approved supplier won the bid. As explained in MDU's revised filing, project costs have been updated from the initial \$1,363,243 estimate to the updated \$782,950 based on bids received.

### **Mandan Substation Project**

The Mandan Substation Project will be completed in two phases, with phase one to be completed in 2020 and phase two to be completed in 2021. The first phase will cost approximately \$1.2 million and involve moving the Wishek 230 kV line and the Heskett 230kV/115kV transformer to the Mandan Substation. The second phase will cost approximately \$5.6 million and will complete the additions at the Mandan Substation and construct a new 115/69/41.6 kV substation on the Heskett site.

MDU states that the project will increase reliability and reduce outage contingencies on the electric integrated system by having all 230 kV transmission lines terminate into the Mandan Transmission Substation. According to MDU, this substation was built in 2010 and has a far superior bus arrangement versus the Heskett Transmission Substation, which was built in 1966 and has a bus arrangement that causes all lines on the bus to trip when there is a fault or circuit breaker failure. Additionally, this project will eliminate a flooding issue at the existing Heskett Substation during times of heavy rain.

As explained in MDU's revised filing, the 2020 revenue requirement has been updated to remove the costs associated with phase two of this project, since only phase one is anticipated to be completed this year. This reduces the project cost reflected in this filing from \$6.8 million to \$1.2 million. This correction and the correction associated with the Sidney Transmission Line reduce the revenue requirement by approximately \$8,000.

## **REVENUE REQUIREMENT**

### **2019 Revenue Requirement**

Attachment D of MDU's initial filing reports an actual 2019 South Dakota revenue requirement of \$1,055,238, while the revenue recovered from ratepayers in 2019 was \$891,372. Given the year-beginning under-recovery balance of \$94,492, the year-ending under recovery balance equals \$269,133, and the resulting carrying charge is \$10,775, as calculated using the rate of return of 7.216% from rate case docket EL15-024.

### **2020 Projected Revenue Requirement**

The projected 2020 Infrastructure Rider revenue requirement was generally calculated using the 2019 South Dakota actuals with adjustments made where necessary. With the necessary corrections as described in the Sidney Transmission Line and Mandan Substation Project sections above, MDU estimates a projected South Dakota 2020 revenue requirement of \$981,974. As shown on Revised Attachment A, this results in a total amount to be recovered in 2020, including the under-recovery and carrying charge, of \$1,251,107 and an Infrastructure Rider rate of \$0.00841 per kWh.

## **OTHER ISSUES**

### **Annual Report on Thunder Spirit Wind Performance**

As part of the Stipulation in rate case docket EL15-024, MDU agreed to report average capacity factors, transmission curtailments, and economic curtailments on an annual basis. MDU included such a report for TSW1 and TSW2 on page 3 of its letter in this docket. The report outlines an actual capacity factor of 41.7%, no transmission curtailments, and economic curtailments of 9,400 MWh in 2019 for TSW1 and TSW2 combined.

MDU indicated in response to Staff's Data Request 1-4 that the 41.7% capacity factor was based on the MISO generator interconnection of 150 MW and not the combined TSW1 and TSW2 nameplate capacity of 155.5 MW. When the nameplate capacities are used, it results in a 41.9% capacity factor for TSW1, a 36.5% capacity factor for TSW2, and a combined capacity factor of 40.2%. The capacity factor for TSW2 is under the estimated capacity factor of 44.5%; however, MDU explains in response to Staff's Data Request 2-6 that this difference can be attributed to turbine balance of plant faults and type one maintenance, which is an extensive process completed after the first 500 hours of operation.

In response to Staff's Data Request 2-5, MDU explains why TSW1 and TSW2 were constructed for a total of 155.5 MW of nameplate capacity when the MISO generator interconnection limits them to 150 MW. MDU explains that there are approximately 3 MW of electrical losses associated with the underground collector cables and transformers and associated with the system losses between the collector substation and the point of interconnection at the Hettinger 230 kV substation. MDU further explains that there is normally at least one wind turbine offline for maintenance or due to a system fault, so they felt it was appropriate to add an additional 3 MW turbine.

Given the total 2019 annual curtailments of 490 MWh associated with the MISO generation interconnection limit reported by MDU in response to Staff's Data Request 3-2, Staff wouldn't object with this determination. However, as stated in MDU's response to this data request, they will begin

reporting its annual MISO generation interconnection curtailments in addition its annual transmission and economic curtailments.

## **RECOMMENDATION**

Staff's recommendation is based on its analysis of MDU's filing, discovery information, relevant statutes, and previous Commission orders. Staff's review consisted of, but not limited to, the 2019 tracker report, the forecasted 2020 revenue requirement, and rate calculation.

Staff believes the Company's filing is consistent with the settlement approved in rate case docket EL15-024 and prior infrastructure rider filings. Staff recommends the Commission approve the revised 2020 Infrastructure Rider revenue requirements and revised Infrastructure Rider rate of \$0.00841 per kWh, effective May 1, 2020.