



MONTANA-DAKOTA UTILITIES CO.

Before the Public Service Commission of North Dakota

Case Nos. PU-19-___ and PU-19-___

Direct Testimony
of
Darcy J. Neigum

1 Q. Please state your name and business address.

2 A. My name is Darcy J. Neigum and my business address is 400
3 North Fourth Street, Bismarck, North Dakota 58501.

4 Q. By whom are you employed and in what capacity?

5 A. I am the Director of System Operations and Planning for Montana-
6 Dakota Utilities Co. (Montana-Dakota or Company).

7 Q. Please describe your duties and responsibilities with Montana-
8 Dakota.

9 A. I have managerial responsibility for overseeing the day-to-day
10 operations of the Company's electric control center and system operations
11 and planning department. The system operations and planning
12 department is responsible for electric resource planning and expansion
13 studies for the Company.

14 Q. Please outline your educational and professional background.

15 A. I hold a bachelor's degree in Electrical and Electronics Engineering
16 from North Dakota State University as well as a master's degree in
17 Business Administration from the University of Mary. My work experience

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Proposed hearing Exhibit MDU-3
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1 includes four years as a nuclear plant engineer; three years of experience
2 as a coal-fired power plant engineer; eleven years of generation
3 development and operational responsibilities for coal-fired, gas-fired, and
4 renewable generation sources; and eleven years of experience managing
5 the system operations and planning department for Montana-Dakota.

6 **Q. What is the purpose of your testimony in this proceeding?**

7 A. I provide support for the Company's request for an Advance
8 Determination of Prudency for the Heskett 4 simple cycle natural gas-fired
9 combustion turbine (Heskett 4 or Project) as a generation resource for the
10 Company's integrated electric system. I will provide support for the
11 Company's request for a determination that public convenience and
12 necessity will be served by the construction and operation of the Project,
13 that Montana-Dakota is fit, willing and able to provide such service and
14 that the Project is a prudent and reasonable resource for Montana-
15 Dakota's North Dakota electric customers.

16 **Q. How will Montana-Dakota utilize Heskett 4 to meet customer needs?**

17 A. Heskett 4 is a least cost resource that will be used to meet
18 customer peak demand requirements following the retirement of Lewis &
19 Clark 1, Heskett 1, and Heskett 2 coal-fired generating stations.

20 **Q. What are the plant closure dates for Lewis & Clark 1, Heskett 1, and
21 Heskett 2?**

22 A. Montana-Dakota announced on February 15, 2019, that it will be
23 closing the Lewis & Clark 1 coal-fired station at the end of its coal supply
24 agreement at the end of 2020; and the Heskett 1 and 2 coal-fired

1 generation units at the end of their coal supply agreement at the end of
2 2021. As explained by Mr. Welte, the final closure dates are now expected
3 to occur at the end of March 2021 and 2022. These plant closure dates
4 are supported in the Company's 2019 Integrated Resource Plan (2019
5 IRP) filed with the North Dakota Public Service Commission on July 1,
6 2019 in Case No. PU-19-221.

7 **Q. What is the reason for the plant closures of Lewis & Clark 1, Heskett
8 1, and Heskett 2?**

9 A. As shown in the 2019 IRP; these units are no longer economical to
10 run as compared to other alternatives available to the Company and the
11 units should be shut down at the end of their current coal supply
12 agreements.

13 The costs of fuel, transportation, labor, and maintenance continue
14 to rise at these facilities, as shown in the 2019 IRP¹, while the cost of
15 natural gas and renewables in the area has changed the dispatch
16 characteristic of the plants so that in 2018 the units idled at their minimum
17 output level between 80 and 90 percent of all online hours².

18 **Q. How does Montana-Dakota offer its coal-fired generation into the
19 MISO energy market.**

20 A. Because of the Company's obligations under its coal-supply
21 agreements, if the units are available to run the generators are entered

¹ Volume IV, Attachment I, Pages 7 and 8 of the 2019 IRP.

² Volume IV, Attachment I, Page 4, Figure 2 of the 2019 IRP.

1 into the MISO market as a must run unit at their minimum output level and
2 the units are dispatched economically above minimum load.

3 If the MISO market price is lower than the Company's marginal cost
4 of fuel and variable operations and maintenance (O&M), these
5 incremental marginal costs are not recovered from the MISO market and
6 are an additional cost to Montana-Dakota's customers over what the
7 Company could have bought the same power for from the market. The
8 impact of this is demonstrated in the 2019 IRP³.

9 **Q. Does the IRP model tell the Company when to retire a generating
10 unit?**

11 A. The IRP model will not indicate when to retire but can be a tool to
12 evaluate alternatives to help develop a least cost plan including the
13 determination of a unit retirement date.

14 **Q. What analysis did the Company perform to determine the customer
15 benefits and least cost alternatives associated with the retirement of
16 Lewis & Clark 1, Heskett 1, and Heskett 2?**

17 A. As part of the 2019 IRP, the Company analyzed three separate
18 scenarios to help determine a best retirement date for Lewis & Clark 1,
19 Heskett 1, and Heskett 2.

20 First, the Company varied the retirement dates of the units from
21 2029 to 2025 to 2021 in the 2019 IRP model. This analysis showed the
22 earlier the retirement date, the greater the customer savings.

³ Volume IV, Attachment I, page 5, Figure 3.

1 Second, the Company retired the units in 2021 and then allowed
2 the 2019 IRP model to select each of the units for an additional 5-year life
3 at the current O&M and fuel cost for the unit with no additional capital
4 investment. No units were selected to run after 2021.

5 Finally, the Company developed a specific revenue requirement
6 financial model to determine the actual projected customer impact
7 associated with a retirement and replacement scenario. This analysis is
8 described in Mr. Jacobson's testimony and shows significant customer
9 savings over the option of continuing to run the Lewis & Clark 1, Heskett
10 1, and Heskett 2 units.

11 **Q. What resources did the Company evaluate the Heskett 4 project**
12 **against?**

13 A. As part of the 2019 IRP, the Company developed an internal
14 portfolio of future units including: coal, gas, wind, solar, and battery; and
15 issued a Request for Proposals of Capacity and Energy Resources on
16 August 1, 2018 (2018 RFP).

17 A copy of the 2018 RFP and summary of analysis of bids received
18 is included in the 2019 IRP report ⁴.

19 Nineteen proposals from ten companies were received in response
20 to the 2018 RFP. The majority of proposals received did not have signed
21 generator interconnections agreements with the Midcontinent Independent
22 System Operator (MISO) and therefore the magnitude of associated

⁴ Volume IV, Attachment F of the 2019 IRP.

1 network upgrade costs associated with the proposals were unknown at the
2 time of the 2018 RFP and 2019 IRP analysis. No proposals were
3 shortlisted from the 2018 RFP because of the uncertainty with potential
4 network upgrade costs and the impacts to final pricing to the proposals.
5 Most of the 2018 RFP proposals were included as future supply options in
6 the 2019 IRP model to help guide the Company in potential additional
7 resource selections when these proposals become more definitive.

8 **Q. What did the results of the 2019 IRP reveal about the Company's**
9 **least cost supply plan?**

10 A. The Heskett 4 unit was selected as a least cost unit in the base
11 case model run and all sensitivities which included: low/high load, low/high
12 natural gas, low/high MISO energy, high combustion turbine costs, \$30
13 per ton carbon cost, higher MISO capacity requirement, and a high natural
14 gas / MISO energy model run⁵.

15 **Q. What other resources did the 2019 IRP model select as a least cost**
16 **plan?**

17 A. In addition to the Heskett 4 unit, the model also selected future
18 wind, solar, storage, and natural gas-fired combined cycle as part of the
19 Company's least cost plan⁶.

20 **Q. Why didn't the Company enter into contract negotiations with the**
21 **wind and solar resources identified in 2022 and 2023?**

⁵ Volume IV, Attachment C, Page 14, Table 3-1 of the 2019 IRP.

⁶ Id.

1 A. These units did not have a final interconnection agreement and the
2 costs for their network upgrades were still unknown. Based upon potential
3 network upgrade costs for other projects coming out of MISO's generator
4 interconnection queue, a cost adder of up to \$25 per MWh could be
5 applicable to these projects. The Company will issue another RFP prior to
6 its next IRP to see if any of these projects or others have final
7 interconnection costs and better price certainty.

8 These projects were selected in addition to Heskett 4, which is a
9 least cost resource in all modeling scenarios.

10 **Q. What are the impacts of replacing baseload coal with a natural gas-
11 fired peaking turbine?**

12 A. The 2019 IRP model is selecting the peaking turbine for capacity
13 requirements and the Company will rely on the MISO market for more
14 energy without the addition of energy resources like renewables.

15 The 2018 economic comparison in the 2019 IRP shows that fuel
16 and variable O&M costs of Lewis & Clark 1, Heskett 1, and Heskett 2 are
17 \$9.75 per MWh to \$29.62 per MWh over the MISO market energy
18 purchases ⁷. MISO purchase prices are expected to remain low with
19 abundant low-cost natural gas and additional renewables being added to
20 the MISO market.

21 Market prices would have to rise significantly for Lewis & Clark 1,
22 Heskett 1, or Heskett 2 to be economically competitive again. If market

⁷ Volume IV, Attachment I, Page 12, Figure 11 of the 2019 IRP.

1 energy prices rise significantly, the Company could always look to
2 combine cycle Heskett 3 and Heskett 4, and/or add additional renewable
3 generation.

4 **Q. Is the addition of Heskett 4 the best alternative for the Company?**

5 A. Yes, the addition of Heskett 4; coupled with the retirement of Lewis
6 & Clark 1, Heskett 1, and Heskett 2; provides significant customer savings
7 versus continuing to run these coal units or implementing another future
8 electric supply plan. The Heskett 4 addition is a least cost resource in the
9 2019 IRP base case and all sensitivity cases.

10 **Q. Is Montana-Dakota fit, willing and able to construct, operate and**
11 **maintain the Project?**

12 A. Yes.

13 **Q. Does this conclude your direct testimony?**

14 A. Yes, it does.