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November 30, 2015

**- Via Email and Federal Express -**

Darrell Nitschke, Executive Director  
North Dakota Public Service Commission  
State Capitol Building, Dept 408  
600 East Boulevard  
Bismarck, ND 59505-0480

RE: NEGOTIATED AGREEMENT  
CASE NOS. PU-12-813, 13-706, 13-707, 13-708, 13-742 13-743, 13-194, 13-195, 15-96

Dear Mr. Nitschke:

Northern States Power Company, doing business as Xcel Energy, respectfully submits testimonies of Company Witnesses Christopher B. Clark, Kurtis Haeger, and David H. Sederquist in support of the Negotiated Agreement that was filed jointly with staff on September 30, 2015.

As the Commission may recall, the Negotiated Agreement addresses jurisdictional generation resource policy differences, as contemplated in the Settlement Agreement in the Case PU-12-813. The testimony supports the goals and discusses the following key items included in the Negotiated Agreement:

- Acceleration of the Company's commitment to locate thermal generation in the state from 2036 to end-of-year 2025.
- Exclusion of seventeen existing CBED and small solar purchased power agreements from the Company's North Dakota Fuel Cost Rider.
- Extension of the current electric rate moratorium by one additional year (i.e., through 2017).
- Continued recovery in North Dakota of six existing biomass purchased power agreements subject, in part, to a sizeable refund (estimated to be

115 **PU-13-708** Filed: 11/30/2015 Pages: 26  
Pre-filed direct testimony of Kurtis Haeger in support of negotiated agreement

116 **PU-13-706** Filed: 11/30/2015 Pages: 26  
Pre-filed direct testimony of Kurtis Haeger in support of negotiated agreement

116 **PU-13-707** Filed: 11/30/2015 Pages: 26  
Pre-filed direct testimony of Kurtis Haeger in support of negotiated agreement

255 **PU-12-813** Filed: 11/30/2015 Pages: 26  
Pre-filed direct testimony of Kurtis Haeger in support of negotiated agreement

119 **PU-13-742** Filed: 11/30/2015 Pages: 26  
Pre-filed direct testimony of Kurtis Haeger in support of negotiated agreement

127 **PU-13-743** Filed: 11/30/2015 Pages: 26  
Pre-filed direct testimony of Kurtis Haeger in support of negotiated agreement

134 **PU-13-195** Filed: 11/30/2015 Pages: 26  
Pre-filed direct testimony of Kurtis Haeger in support of negotiated agreement

117 **PU-13-194** Filed: 11/30/2015 Pages: 26  
Pre-filed direct testimony of Kurtis Haeger in support of negotiated agreement

102 **PU-15-96** Filed: 11/30/2015 Pages: 26  
Pre-filed direct testimony of Kurtis Haeger in support of negotiated agreement

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Direct Testimony and Schedules  
Kurtis J. Haeger

Before the North Dakota Public Service Commission  
State of North Dakota

|  |                    |
|--|--------------------|
| Northern States Power Company<br>2013 Electric Rate Increase Application   | Case No. PU-12-813 |
| Northern States Power Company<br>Advanced Determination of Prudence – Courtenay Wind Project Application             | Case No. PU-13-706 |
| Northern States Power Company<br>Advanced Determination of Prudence – Odell Wind Project Application                 | Case No. PU-13-707 |
| Northern States Power Company<br>Advanced Determination of Prudence – Pleasant Valley Wind Project Application       | Case No. PU-13-708 |
| Northern States Power Company<br>Advanced Determination of Prudence – Border Winds Project Application               | Case No. PU-13-742 |
| Northern States Power Company<br>150 MW Border Winds Project – Rolette County<br>Public Convenience and Necessity    | Case No. PU-13-743 |
| Northern States Power Company<br>Advanced Determination of Prudence – NG Generators Application                      | Case No. PU-13-194 |
| Northern States Power Company<br>Red River Valley NG Units 1 & 2 – Hankinson, ND<br>Public Convenience and Necessity | Case No. PU-13-195 |
| Northern States Power Company<br>Advance Determination of Prudence – 345 Mankato Energy Center Application           | Case No. PU-15-96  |

**Resource Plan**

Exhibit\_\_ (KJH-1)  
November 30, 2015

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**I. INTRODUCTION AND SUMMARY**

1

2

3 Q. PLEASE STATE YOUR NAME AND TITLE.

4 A. My name is Kurtis J. Haeger. I am the Area Vice President of Resource  
5 Planning for Xcel Energy Services Inc. (XES), the service company subsidiary  
6 of Xcel Energy Inc. In that role I coordinate the resource planning function  
7 for Northern States Power Company-Minnesota (NSP or Xcel Energy).

8

9 Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?

10 A. My Direct Testimony supports Xcel Energy's request that the Commission  
11 approve the Negotiated Agreement Relating to North Dakota Generation  
12 Resource Policy (Negotiated Agreement). In support of the Negotiated  
13 Agreement, I provide testimony on the following topics:

- 14
- The value of the Negotiated Agreement
  - The reasonableness of Xcel Energy's plans for installing generation in  
15 eastern North Dakota including a resource planning analysis supporting  
16 the need for such generation in 2025 as well as the ability to site  
17 generation in eastern North Dakota at a reasonable cost.
  - The concept of the "Resource Treatment Framework" or RTF process  
18 that is contemplated by the Negotiated Agreement.
- 19  
20

21

**II. VALUE OF THE NEGOTIATED AGREEMENT**

22

23  
24 Q. PLEASE DESCRIBE THE NEGOTIATED AGREEMENT.

25 A. Mr. Sederquist provides a thorough discussion of the Negotiated Agreement  
26 and I refer you to his Direct Testimony for additional information regarding its

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1 terms. In this section of my Direct Testimony, I will provide my analysis of  
2 both the quantitative and qualitative elements of value embedded in the  
3 Negotiated Agreement.

4  
5 Q. HAVE YOU ASSESSED THE VALUE OF THE NEGOTIATED AGREEMENT?

6 A. Yes. The Negotiated Agreement contains several main elements: (1)  
7 commitment to construct generation in eastern North Dakota; (2) treatment of  
8 existing resources; (3) treatment of pending resources; (4) extension of the rate  
9 moratorium from our last rate case; and (5) the Resource Treatment  
10 Framework (RTF). Mr. Clark and Mr. Sederquist address the policy and other  
11 bases for these provisions. I will discuss our generation commitment and the  
12 economic value of the treatment of particular resources through the Negotiated  
13 Agreement in this section of my testimony.

14  
15 **A. North Dakota Generation and Refund Calculations**

16 Q. TO WHAT HAS XCEL ENERGY AGREED WITH RESPECT TO NORTH DAKOTA  
17 BASED GENERATION?

18 A. Xcel Energy has agreed to place in-service (or have placed in-service on its  
19 behalf) at least 200 MW of thermal generation in eastern North Dakota no later  
20 than December 31, 2025.

21  
22 Q. HOW WAS THE DECEMBER 31, 2025 DEADLINE DERIVED?

23 A. There is an undisputed need to add additional generation to the NSP System in  
24 2025 due to the expiration of certain existing Power Purchase Agreements and  
25 the retirement of various generation units that are currently providing capacity  
26 and energy to the NSP System. I discuss this need later on in my testimony.

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1 That said, should we implement our currently contemplated Resource Plan  
2 (Case No. PU-15-19), it is possible that we could install generation in eastern  
3 North Dakota as early as 2023.

4  
5 Q. WHAT IS THE VALUE OF ACCELERATING XCEL ENERGY'S COMMITMENT TO  
6 DEPLOY AT LEAST 200 MW OF THERMAL GENERATION IN EASTERN NORTH  
7 DAKOTA BY DECEMBER 31, 2025?

8 A. Xcel Energy understands that it has been a long-standing desire of the  
9 Commission for us to locate thermal generation in the state, and we are  
10 committing to meeting this goal with a resource dedicated to serving the entire  
11 NSP System. On a more fundamental level, placing system generation near our  
12 North Dakota load centers provides additional reliability support for all of the  
13 load centers in the eastern part of the state. And, because this generation will  
14 be installed as a system resource that is available to the entire integrated NSP  
15 System, we would expect the costs will be shared accordingly. Further, having  
16 a power plant in eastern North Dakota will result in some economic  
17 development benefits, resulting in construction jobs while the plant is being  
18 built and permanent jobs to operate and maintain the plant.

19  
20 Q. HAS XCEL ENERGY DEVELOPED A PROPOSAL TO MEET THAT COMMITMENT?

21 A. We are currently working to develop a proposal to meet this commitment.  
22 While we have an idea at this time as to what we will construct with respect to  
23 configuration and goals of a North Dakota plant, we will continue to evaluate  
24 options in the next few years to help ensure that meeting our commitment can  
25 be done at a reasonable cost taking into account the reliability benefits of  
26 placing generation nearer to our North Dakota loads.

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1

2 Q. WHAT IS THE CURRENTLY CONTEMPLATED CONFIGURATION FOR XCEL  
3 ENERGY'S NORTH DAKOTA BASED GENERATION?

4 A. We are currently considering the development of an energy park in eastern  
5 North Dakota, that would be capable of future expansion. The initial buildout  
6 of that facility will be a 200+ MW combustion turbine with associated  
7 infrastructure. We plan to configure this facility in a way that will facilitate  
8 future expansion and future generation at this site could help meet regional  
9 needs.

10

11 Q. WHAT IS THE VALUE OF CONFIGURING THE NORTH DAKOTA FACILITY IN THIS  
12 WAY?

13 A. There are several benefits from a system perspective.

14

15 Greenfield development is generally somewhat more costly than expanding an  
16 existing site since, with a greenfield project, it is necessary to develop associated  
17 infrastructure and incur other initial expenses that may be avoided at an  
18 already-developed site. When developing a new site as we are doing for this  
19 project, it is a good idea to develop the infrastructure with an eye toward  
20 potential future expansion.

21

22 This provides NSP, or a partner utility, with substantial flexibility to add  
23 incremental generation at the site in the future as circumstances may warrant.  
24 While our current plans for meeting the 2025 commitment are for a 200+ MW  
25 CT, we foresee the likelihood that a combination of load growth, plant

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1 retirements and other factors will make it appropriate to add additional  
2 generation to the site in the future that can help meet regional needs.

3  
4 Additionally, placing generation in or near our North Dakota load center  
5 provides incremental reliability benefits by having generation sited near load to  
6 support the transmission system. We are also exploring whether this can  
7 provide an opportunity to enhance gas infrastructure in the state as well.

8  
9 Q. HAS THE COMPANY IDENTIFIED A SITE AT WHICH TO DEVELOP THIS ENERGY  
10 PARK?

11 A. We are currently exploring the feasibility of a site in the Fargo metropolitan  
12 area. We are currently in discussions with landowners on securing options for  
13 potential sites and have submitted interconnection requests to MISO for the  
14 necessary access to the transmission system. That said, we are also exploring  
15 other potential sites to determine if we can more cost effectively develop  
16 generation at those locations.

17  
18 I discuss the reasonableness of the costs of developing generation in eastern  
19 North Dakota and some of the related infrastructure considerations later in my  
20 Direct Testimony.

21  
22 Q. WHAT IS THE CONSEQUENCE IF XCEL ENERGY DOES NOT MEET THIS  
23 COMMITMENT?

24 A. The Negotiated Agreement includes a North Dakota customer refund of about  
25 half of the incremental costs of the biomass contracts over the period if Xcel

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1 Energy does not place a combustion turbine of at least 200 MW in service by  
2 the end of 2025.

3  
4 Q. HOW IS THIS REFUND DETERMINED?

5 A. In response to our commitment to accelerate thermal generation in eastern  
6 North Dakota, Staff supported allowing the Company to recover the cost of its  
7 six biomass PPAs: (1) KODA Energy LLC, (2) WM Renewable Energy (MN  
8 Methane), (3) Pine Bend, (4) FibroMinn, (5) Laurentian Energy Authority I,  
9 and (6) St. Paul Cogeneration. The refund would be equal to fifty percent of  
10 the revenues collected from North Dakota customers during the ten-year  
11 period of 2016-2025 that represent the difference between the actual revenues  
12 received by the Company for those PPAs and the amount North Dakota  
13 customers would have paid for these resources had they been disallowed for  
14 recovery by the Commission. This recognizes that – if disallowed – North  
15 Dakota customers would not have gotten the power for free but would have  
16 paid an adjusted system average cost of fuel for the energy produced from  
17 these resources.

18  
19 Q. HOW DID YOU ESTIMATE THE IMPACT OF THE REFUND?

20 A. We forecasted the amount of energy that these generation resources are likely  
21 to produce over the ten year period and calculated the difference between the  
22 PPA price and the adjusted system average cost of energy that would have been  
23 paid by our North Dakota customers had these resource been disallowed by  
24 the Commission. I provide the calculation of the refund in Schedule 1 of my  
25 Testimony.

26

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1 Q. ARE THERE CIRCUMSTANCES WHERE NSP MAY BE PRECLUDED FROM MEETING  
2 THIS COMMITMENT?

3 A. Potentially. Under the Negotiated Agreement our commitment to accelerate  
4 development of North Dakota generation “is contingent on the Company’s  
5 receipt of all necessary and appropriate permits and regulatory approvals.”  
6 This includes approvals needed for construction and cost recovery in North  
7 Dakota, Minnesota, the other states in which we provide service, and the  
8 permits and approvals from the Environmental Protection Agency. If we  
9 cannot obtain all such permits and approvals we would lack the authority to  
10 construct or recover the costs of the plant from our all of our customers and  
11 would therefore be unable to meet the commitment. I note that we have 10  
12 years to obtain all permits and approvals to construct the plant. I believe it is  
13 likely that we will be able to satisfy this contingency.

14  
15 We accounted for this potentiality in the Negotiated Agreement. Specifically,  
16 the Negotiated Agreement provides that: “If for any reason the Company does  
17 not place in service the combustion turbine ... the Company will provide a  
18 refund to North Dakota customers in 2026 equal to” half of the recovered cost  
19 of the biomass contracts. This refund is not contingent on receipt of the  
20 approvals needed for the plant.

21  
22 **B. Calculation of Treatment of Other Existing Resources**

23 Q. HOW DOES THE NEGOTIATED AGREEMENT TREAT EXISTING RESOURCES?

24 A. The Negotiated Agreement leaves the rate treatment of the bulk of the costs of  
25 the NSP System undisturbed. However, the Negotiated Agreement provides

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1 finality to the rate treatment of the 23 PPAs identified in our most recent rate  
2 case (Case No. PU-12-813), as well as the Pleasant Valley and Odell projects.

3  
4 With respect to the 23 PPAs identified in our most recent rate case, the  
5 Negotiated Agreement disallows cost recovery in North Dakota of 15  
6 community based wind projects (C-BED) and two early solar projects as  
7 incompatible with the Commission's resource preferences. And, as I discussed  
8 above, the Negotiated Agreement allows for the recovery of six biomass  
9 contracts in exchange for Xcel Energy's acceleration of its commitment to  
10 develop generation in eastern North Dakota. Last, the Negotiated Agreement  
11 provides for the recovery of the costs of the Pleasant Valley and Odell wind  
12 projects, whose low project costs will decrease overall system costs.

13  
14 Q. WHAT IS THE EFFECT OF THE TREATMENT OF EXISTING RESOURCES ON RATES?

15 A. The Negotiated Agreement, if accepted by the Commission, will result in a  
16 reduction in rates that our North Dakota customers pay.

17  
18 Q. WHAT IS THE COST OF EXCLUDING THE 17 C-BED AND SMALL SOLAR  
19 RESOURCES FROM COST RECOVERY IN NORTH DAKOTA?

20 A. The cost of these resources are approximately \$1.6 million in 2016 and  
21 declining over time to about \$0.9 million in 2030. The total is about \$19  
22 million or about \$1.3 million per year, on average. Table 1 demonstrates these  
23 calculations.

24

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Table 1 - Cost of 17 CBED and Small Solar to North Dakota Customers

| 17 CBED and Small Solar (\$000)        | 2016                  | 2017      | 2018      | 2019      | 2020      | 2021      | 2022      | 2023      | 2024      | 2025      | 2026      | 2027      | 2028      | 2029    | 2030    | Total      |
|--|-----------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|---------|---------|------------|
|  | [TRADE SECRET BEGINS] |           |           |           |           |           |           |           |           |           |           |           |           |         |         |            |
| Jeffers Wind 20, LLC (50 MW)           |                       |           |           |           |           |           |           |           |           |           |           |           |           |         |         |            |
| Big Blue (36 MW)                       |                       |           |           |           |           |           |           |           |           |           |           |           |           |         |         |            |
| Community Wind South (Zephyr) (30 MW)  |                       |           |           |           |           |           |           |           |           |           |           |           |           |         |         |            |
| Ridgewind Power Partners LLC (25 MW)   |                       |           |           |           |           |           |           |           |           |           |           |           |           |         |         |            |
| Adams Wind Generations (20 MW)O        |                       |           |           |           |           |           |           |           |           |           |           |           |           |         |         |            |
| Danielson Wind Farms (20 MW)           |                       |           |           |           |           |           |           |           |           |           |           |           |           |         |         |            |
| Ewington Energy Systems LLC (20 MW)    |                       |           |           |           |           |           |           |           |           |           |           |           |           |         |         |            |
| Grant County Wind, LLC (20 MW)         |                       |           |           |           |           |           |           |           |           |           |           |           |           |         |         |            |
| North Community Turbines (15 MW)       |                       |           |           |           |           |           |           |           |           |           |           |           |           |         |         |            |
| North Wind Turbines (15 MW)            |                       |           |           |           |           |           |           |           |           |           |           |           |           |         |         |            |
| Valley View Transmission (10 MW)       |                       |           |           |           |           |           |           |           |           |           |           |           |           |         |         |            |
| Uilk Wind Farm (4.5 MW)                |                       |           |           |           |           |           |           |           |           |           |           |           |           |         |         |            |
| Hilltop Power (2.0 MW)                 |                       |           |           |           |           |           |           |           |           |           |           |           |           |         |         |            |
| Winona County Wind (1.5 MW)            |                       |           |           |           |           |           |           |           |           |           |           |           |           |         |         |            |
| Woodstock Municipal Wind, LLC (0.8 MW) |                       |           |           |           |           |           |           |           |           |           |           |           |           |         |         |            |
| Outland/Slayton Solar (2.0 MW)         |                       |           |           |           |           |           |           |           |           |           |           |           |           |         |         |            |
| Best Power (St. Johns) (0.4 MW)        |                       |           |           |           |           |           |           |           |           |           |           |           |           |         |         |            |
|  | [TRADE SECRET ENDS]   |           |           |           |           |           |           |           |           |           |           |           |           |         |         |            |
| Total                                  | (\$1,628)             | (\$1,587) | (\$1,579) | (\$1,535) | (\$1,450) | (\$1,374) | (\$1,348) | (\$1,294) | (\$1,286) | (\$1,179) | (\$1,197) | (\$1,081) | (\$1,010) | (\$981) | (\$887) | (\$19,415) |

Q. WHY ARE THE PLEASANT VALLEY AND ODELL WIND PROJECTS TREATED SEPARATELY?

A. At the time of the Rate Settlement, these three projects were pending but had not yet been approved. The Rate Settlement also contemplated that the disposition of Pleasant Valley and Odell were to be addressed in the Negotiated Agreement. All of these projects are competitively priced, lowering overall system costs over their life, and provide significant energy benefits. Given these benefits, Xcel Energy and Staff agreed that it was appropriate to include these resources in the Negotiated Settlement.

Q. WHAT IS THE VALUE OF INCLUDING THE PLEASANT VALLEY AND ODELL WIND RESOURCES?

A. These wind projects are competitive resources and provide energy to the system that offsets natural gas generation ultimately resulting in an overall decrease in system costs. Table 2 provides additional information with respect to the impact of these resources on system costs.

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**Table 2 – Costs/Savings of Pleasant Valley and Odell Projects**

**Table 1: Net PVRR Savings**

|           | PVRR (\$ millions)    | Reference Case (\$0/ton CO2) | Low Gas (1.7% growth rate) |
|-----------|-----------------------|------------------------------|----------------------------|
| Corrected | Pleasant Valley 200MW | (\$88)                       | (\$15)                     |
| Corrected | Odell 200MW           | (\$51)                       | \$1                        |

**Table 4: PVRR Results (\$millions)**

|           | Base                | Low Gas  | 30 Year Operating Life | 20 Year Operating Life | +5% Capacity Factor | -5% Capacity Factor | +25% On-Going Ownership Costs | -25% On-Going Ownership Costs |
|-----------|---------------------|----------|------------------------|------------------------|---------------------|---------------------|-------------------------------|-------------------------------|
| Corrected | Base Case (No Wind) | \$40,340 | \$36,997               | \$40,340               | \$40,340            | \$40,340            | \$40,340                      | \$40,340                      |
| Corrected | Pleasant Valley     | \$40,253 | \$36,983               | \$40,223               | \$40,288            | \$40,228            | \$40,269                      | \$40,236                      |
| Corrected | Odell               | \$40,289 | \$36,998               | \$40,289               | \$40,289            | \$40,287            | \$40,289                      | \$40,289                      |

**Table 5: Incremental PVRR from Base Case (\$millions)**

|           | Base                | Low Gas | 30 Year Operating Life | 20 Year Operating Life | +5% Capacity Factor | -5% Capacity Factor | +25% On-Going Ownership Costs | -25% On-Going Ownership Costs |
|-----------|---------------------|---------|------------------------|------------------------|---------------------|---------------------|-------------------------------|-------------------------------|
| Corrected | Base Case (No Wind) | \$0     | \$0                    | \$0                    | \$0                 | \$0                 | \$0                           | \$0                           |
| Corrected | Pleasant Valley     | (\$88)  | (\$15)                 | (\$117)                | (\$52)              | (\$112)             | (\$63)                        | (\$71)                        |
| Corrected | Odell               | (\$51)  | \$1                    |                        |                     | (\$53)              | (\$49)                        |                               |

Reasons for differences:

- 1) Strategist files contained externality costs for all cases which should not have been included.
- 2) Strategist did not reflect final revenue requirements amounts from the Excel based models for the +5% and -5% capacity factor sensitivities.

2

3

4

**III. REASONABLENESS OF NORTH DAKOTA GENERATION**

5

6 Q.

WHAT IS THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY?

7 A.

In this section of my testimony, I discuss issues relating to the development of generation in eastern in North Dakota. As Mr. Clark discussed, Xcel Energy is obligated to meet the commitment it has made in the Negotiated Agreement to develop thermal generation in eastern North Dakota. As I discussed earlier in my Direct Testimony, we are also beginning preliminary work to develop a site near Fargo, North Dakota.

13

14

That said, there are two key requirements that must be met to prudently develop generation in eastern North Dakota: (1) need and (2) reasonable cost.

15

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1 This section of my Testimony addresses these two issues and the benefits and  
2 challenges of developing generation in eastern North Dakota.

3  
4 **A. Need Assessment**

5 Q. WILL THERE BE A CAPACITY NEED SUFFICIENT TO JUSTIFY THE DEVELOPMENT  
6 OF 200 MW OF THERMAL GENERATION IN EASTERN NORTH DAKOTA BY  
7 DECEMBER 31, 2025?

8 A. Yes. Our load and resources analysis has consistently identified a significant  
9 capacity need in 2025 due to a number of PPAs expiring and other retirements  
10 on our system. This capacity need was the reason that the Negotiated  
11 Agreement identified December 31, 2025 as the deadline for our development  
12 of the North Dakota CT.

13  
14 Q. HAS NSP ADDRESSED RESOURCE ADDITION NEEDS IN OTHER RECENT NORTH  
15 DAKOTA PROCEEDINGS?

16 A. Yes. On October 2, 2015, we filed an update to our 2015-2030 Upper Midwest  
17 Integrated Resource Plan in Case No. PU-15-19. This 2015 Resource Plan  
18 update addressed NSP's upcoming resource needs and proposed constructing a  
19 gas combustion turbine in eastern North Dakota to support system reliability  
20 and address capacity needs in the 2023 to 2025 timeframe.

21  
22 In addition, on October 2, 2015 I provided Supplemental Rebuttal Testimony  
23 on our Application for an Advance Determination of Prudence for a Power  
24 Purchase Agreement with Mankato Energy Center, LLC for Approximately  
25 345 MW of Combined-Cycle Gas Generation in Case No. PU-15-96. In that  
26 testimony, I supported the need for additional generation resources in the 2023

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1 to 2025 timeframe. During the contested proceedings in Case No. PU-15-96,  
2 Xcel Energy and Advocacy Staff agreed that additional capacity is projected to  
3 be needed by at least 2024 regardless of any additional decisions regarding the  
4 future of NSP's Sherco Units 1 and 2. The Mankato Energy Center is intended  
5 to help fill that need, but does not fully satisfy the additional anticipated  
6 resource needs for 2025 and beyond.

7  
8 Q. WHAT IS THE UNDERLYING DATA THAT LEADS XCEL ENERGY TO CONCLUDE  
9 ADDITIONAL CAPACITY NEEDS WILL EXIST IN 2025?

10 A. The primary data source is the Load and Resources analysis in our October 2,  
11 2015 update to our 2015 Resource Plan. In that analysis, we incorporated the  
12 North Dakota CT (as well as other recent resource additions) into our resource  
13 expectations beginning in 2023, and still forecast an additional need in 2025  
14 and beyond. While our Resource Plan update anticipates other additions to  
15 meet these needs, the North Dakota combustion turbine will be part of the  
16 capacity and resources available to our customers in the 2023 to 2025  
17 timeframe. I note that our 2015 Resource Plan as well as earlier loads and  
18 resources analysis have consistently identified a significant capacity deficit in  
19 2025. I incorporate our Resource Plan filings in Case No. PU-15-19 by  
20 reference in my Direct Testimony.

21  
22 Q. DO YOU CONSIDER THIS A PERIOD OF GREAT OR HIGH UNCERTAINTY WITH  
23 RESPECT TO FORECASTING FUTURE RESOURCE NEEDS?

24 A. Yes. The values we have identified for load obligation, reserve margin,  
25 coincident/non-coincident peak factor, existing accredited capacity having been  
26 moving significantly year by year. Through no fault of Xcel Energy, the key

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1 variables in determining the forecast for overall net position of the generation  
2 portfolio have been moving continuously throughout the last five years. While  
3 we have continued to keep up with these changes, and present updated  
4 summaries to the Commission, the fact remains that there has been and will  
5 likely continue to be changes to these key variables. Given our obligation to  
6 ensure sufficient resources to meet demand, we believe it is appropriate to view  
7 these changes conservatively, which could justify a determination of need  
8 earlier than 2025.

9  
10 Q. DO ANY ADDITIONAL CONSIDERATIONS FACTOR INTO THE DETERMINATION OF  
11 NEED TO CONSTRUCT A NORTH DAKOTA FACILITY OF AT LEAST 200 MW BY  
12 DECEMBER 31, 2025?

13 A. Yes. As described more fully in our October 2, 2015 Resource Plan update, in  
14 the coming decade we are faced with a number of major decisions about our  
15 aging system and the impact of future environmental compliance costs. As a  
16 result of our aging system, we face increasing difficulties maintaining baseload  
17 coal generation in a cost-effective manner. This requires us to plan for  
18 contingencies. Further, our Resource Plan update contemplates enabling us to  
19 cost-effectively achieve a 60 percent reduction in carbon emissions by 2030  
20 while (i) securing low priced resources when they become available and (ii)  
21 strengthening the reliability of our system through geographic diversification of  
22 future natural gas generation additions, including in North Dakota. Thus the  
23 North Dakota project is an important part of our overall resource planning and  
24 is intended to meet an identified need.

25

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1 Q. IS THE NEED YOU IDENTIFY IN 2025 CONTINGENT ON NSP'S PROPOSED  
2 CESSATION OF COAL OPERATIONS AT SHERCO UNITS 1 & 2 IN 2023 AND 2026,  
3 RESPECTIVELY?

4 A. Our loads and resources analysis has consistently identified a need in  
5 2025 of over 1,000 MW of capacity due to the expiration of several PPAs and  
6 the retirement of a number of older generation units that when added together  
7 provide significant amounts of capacity to the system. Stated differently, well  
8 over 1,000 MW of capacity resources are dropping off of the system in 2025  
9 timeframe and will need to be replaced. We envision that the addition of  
10 generation in eastern North Dakota will be part of our plan to meet that need.  
11 That said, cessation of coal operations at Sherco Unit 2 in 2023 could  
12 accelerate a need for additional capacity that would be met by the North  
13 Dakota CT in 2023.

14  
15 Q. HAS NSP CONSIDERED THE POTENTIAL FOR RENEWING THE PPAs EXPIRING IN  
16 2025?

17 A. Prudent resource planning requires us to keep all of our options open.  
18 However, starting to work toward a 2025 in-service date provides us with  
19 significant optionality as we start looking to meet the anticipated need. Because  
20 we are likely to have several options to meet our 2025 need, it is important that  
21 we are able to develop generation in eastern North Dakota at a reasonable cost.

22

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**B. North Dakota Generation Development**

1           **B. North Dakota Generation Development**  
2    Q.    DOES XCEL ENERGY HAVE A PROPOSAL FOR THE DEVELOPMENT OF THERMAL  
3           GENERATION IN EASTERN NORTH DAKOTA?

4    A.    As I mentioned before, we are currently looking at constructing a single,  
5           approximately 200 MW combustion turbine in eastern North Dakota. We  
6           currently contemplate this CT to act as a peaking plant for the NSP system and  
7           therefore will likely have interruptible gas delivery contracts but will be  
8           constructed with a backup oil supply system to provide reliability support  
9           when gas delivery is unavailable. To capture the investment in greenfield  
10          development, we intend to obtain sufficient land rights to install an additional  
11          combustion turbine in the future.

12  
13   Q.    WHY IS XCEL ENERGY PROPOSING A COMBUSTION TURBINE TO MEET ITS  
14          COMMITMENT?

15   A.    A 200 MW combustion turbine is the most cost effective way for us to develop  
16          generation in eastern North Dakota, consistent with our current resource plan.

17  
18   Q.    HAS XCEL ENERGY IDENTIFIED A SITE FOR THIS GENERATOR?

19   A.    We are taking steps to obtain options for land rights and transmission  
20          interconnection and deliverability access for a site near Fargo. We are  
21          optimistic that we can cost effectively develop generation in this location. That  
22          said, we are still working on our analysis of the most cost effective sites  
23          available in eastern North Dakota.

24  
25          Ultimately, the location our new North Dakota based generation will be based  
26          on our ability to balance the reliability benefits of developing generation nearer

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1 to our load with the costs of developing the necessary supporting infrastructure  
2 to operate (and potentially expand) the plant.

3  
4 Q. CAN NATURAL GAS-FIRED GENERATION BE DEVELOPED IN EASTERN NORTH  
5 DAKOTA AT REASONABLE COST?

6 A. Yes. Our challenge is to develop a site as near to load as possible so that our  
7 customers can maximize the reliability benefits of constructing generation in  
8 eastern North Dakota at a reasonable overall cost to the NSP System. Having  
9 until 2025 to meet our commitment will provide us with plenty of time to meet  
10 this challenge.

11  
12 **IV. RESOURCE TREATMENT FRAMEWORK**

13  
14 Q. WHAT IS THE IMPORTANCE OF HAVING A RTF IN PLACE FROM A RESOURCE  
15 PLANNING PERSPECTIVE?

16 A. The main goal of developing a RTF is to provide added certainty on how  
17 future resources will be treated. Added certainty will allow Xcel Energy to  
18 make prudent resource choices, taking into account the divergent energy  
19 policies of our various states.

20  
21 Q. WHY DOES THE NEGOTIATED AGREEMENT PROVIDE FOR A YEAR TO DEVELOP  
22 A RTF?

23 A. As Mr. Sederquist describes in his Direct Testimony, the issues facing Xcel  
24 Energy and the industry are highly complex. It was, therefore, important that  
25 the parties take a deliberate approach to designing a process in a thoughtful

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1 manner to minimize unintended consequences. As a result, Staff and NSP  
2 agreed that we could take a year to develop a robust proposal.

3  
4 Q. HAVE YOU CONSIDERED WHAT THE RTF WILL NEED TO CONTAIN?

5 A. Yes, although we have not reached any definitive conclusions. As Mr. Clark  
6 explains, the RTF must address and balance a number of complex and  
7 interrelated issues. The Negotiated Agreement calls for Xcel Energy to work  
8 collaboratively with the Commission and Staff to develop a proposal for the  
9 Commission's consideration. It will be important to consider those issues  
10 deliberately and thoughtfully.

11  
12 At this time, no decisions have been made but I believe Mr. Clark has  
13 appropriately identified the two possible ends of the spectrum of what an RTF  
14 could look like: one that keeps the integrated nature of the NSP System intact  
15 or one that separates North Dakota from the integrated NSP System. I agree  
16 with Mr. Clark that maintaining the integrity of the integrated NSP System  
17 provides the most long-term benefits to our customers and the State of North  
18 Dakota.

19  
20 While I do not have any additional information with respect to Mr. Clark's  
21 discussion of the potential forms an RTF could take, I am available to answer  
22 questions on this matter as well.

23

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1 Q. NSP BELIEVES THAT THE STATUS QUO WITH RESPECT TO RESOURCE ADDITIONS  
2 IS UNSUSTAINABLE, CAN YOU EXPLAIN WHY THAT IS?

3 A. The NSP System is truly integrated. This integration is not only on a planning  
4 and operations basis but also on a financial basis. Because of this integration, it  
5 is almost impossible for us to recover the costs of a particular resources should  
6 we be required to add it to the system due to the laws or Commission orders of  
7 one state but then have it disallowed for recovery by another state.

8  
9 Q. WHY IS THIS THE CASE?

10 A. At a high level, the current regulatory structures in place in all of our  
11 jurisdictions capture and allocate both the costs and revenues of all resource  
12 additions and allocate them to each of our jurisdictions. By capturing both the  
13 costs and revenues of resource additions, these structures make it difficult and  
14 cumbersome to address a mismatch in retail rate recovery of a particular  
15 resource in one jurisdiction since the integrated nature of the system does not  
16 easily allow us to address the share of a particular resource disallowed for  
17 recovery.

18  
19 This is mainly because should the Company choose to treat one state's share of  
20 a particular resource differently, such as sell the capacity and energy into the  
21 market, the revenues from such sale would be allocated in the same manner as  
22 the costs of the resources and that revenue treated consistent with the rules and  
23 regulations of the state to which it is allocated. This means that the treatment  
24 of one state's share of a particular resource is also allocated across the entire  
25 system unless all of the states in the integrated NSP System agree otherwise.  
26 Because full agreement to alternative treatment of a particular state's share of a

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1 resource is required, addressing a disallowance of a resource by one state on a  
2 resource by resource basis is difficult and cumbersome.

3  
4 We hope that a RTF can provide us sufficient certainty as we look toward to  
5 the future so that we can readjust these structures on a holistic basis to  
6 accommodate a new paradigm going forward.

7  
8 Q. HOW IS THE INTEGRATED NSP SYSTEM STRUCTURED?

9 A. Xcel Energy provides electric service to customers in the States of North  
10 Dakota, South Dakota and Minnesota through NSP-M. NSP-M's affiliate,  
11 NSP-Wisconsin or NSP-W serves customers in Wisconsin and Michigan.  
12 NSP-M and NSP-W plan and operate an integrated generation and  
13 transmission system we call the NSP System. This means that costs are  
14 incurred to ensure power is supplied reliably across the system and customers  
15 in each state benefit from the generation and transmission assets and  
16 operations located in all five states.

17  
18 The allocation of costs between NSP-M and NSP-W is governed by a FERC-  
19 approved tariff, commonly known as the "Interchange Agreement."<sup>1</sup> Under  
20 this agreement both NSP-M and NSP-W (collectively the NSP Companies)  
21 plan, build and operate a single integrated electric system. Because of the  
22 integrated nature of the NSP System, the NSP Companies entered into the  
23 Interchange Agreement for the sharing of all production and transmission costs

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<sup>1</sup> See *Restated Agreement to Co-ordinate Planning and Operations and Interchange Power and Energy between Northern States Power Company (Minnesota and Northern States Power Company (Wisconsin)*, January 16, 2001; see *In re Northern States Power Company*, INTERCHANGE AGREEMENT – ANNUAL UPDATE AND E-TARIFF SUBMISSION, FERC Docket No. ER 15-1575, (June 22, 2015) (unpublished letter order of Xcel Energy's most recent update to the Interchange Agreement).

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1 incurred and revenues received to support the system, including capital costs  
2 such as the costs of building power plants and paying for PPAs to procure  
3 generation to serve the system. As a result, all of the generation and  
4 transmission costs incurred and revenues received to support the integrated  
5 NSP System is accounted for through this FERC-approved agreement.  
6

7 Allocations between the states served by NSPM-M and NSP-W, respectively, as  
8 well as rates and the terms and conditions of service for customers are  
9 regulated by the utility commissions in each of our states. For purposes of  
10 establishing those rates, the costs of the integrated system that are incurred in  
11 furtherance of the integrated system are generally allocated to each state in a  
12 manner that reflects the share of each states' use of the integrated system.  
13

14 Q. IS IT THIS ALLOCATION THAT MAKES CARVING OUT A STATE'S SHARE OF  
15 RESOURCES DIFFICULT?

16 A. Yes. In the event that a state agrees to absorb a specific cost, Xcel Energy can  
17 file at FERC for an amendment to the Interchange Agreement to reflect that  
18 agreement, and such a change could be implemented subject to ratification by  
19 FERC. However, a decision not to recover the costs of a resource in a specific  
20 jurisdiction is not as easy to address without full agreement of all 5 states.  
21

22 Q. WHY IS THIS IMPORTANT?

23 A. I mention this to underscore the complexity of addressing a long-term solution  
24 to divergent state energy policies. Most long-term solutions we have explored  
25 would require the adjustment to the current regulatory structures that integrate  
26 the NSP System further complicating a path to a RTF.

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1

2

**V. CONCLUSION**

3 Q. WHAT DO YOU RECOMMEND?

4 A. I recommend that the Commission approve the Negotiated Agreement as  
5 proposed by Xcel Energy and Advocacy Staff.

6

7 Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?

8 A. Yes, it does.

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**Schedule 1: Calculation of Refund of Biomass Costs**

The table below identifies the incremental costs of the of the six biomass contracts to North Dakota customers, recognizing that if disallowed for recovery North Dakota customers would pay a modified system average cost of fuel for the energy produced from these resources.

| Biomass (\$000)                  | 2016                  | 2017      | 2018      | 2019      | 2020      | 2021      | 2022      | 2023      | 2024      | 2025      | Total      |
|----------------------------------|-----------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|
|                                  | [Trade Secret Begins] |           |           |           |           |           |           |           |           |           |            |
| Laurentian                       |                       |           |           |           |           |           |           |           |           |           |            |
| FibroMinn                        |                       |           |           |           |           |           |           |           |           |           |            |
| St Paul Cogen                    |                       |           |           |           |           |           |           |           |           |           |            |
| KODA Energy LLC                  |                       |           |           |           |           |           |           |           |           |           |            |
| WM Renewable Energy (MN Methane) |                       |           |           |           |           |           |           |           |           |           |            |
| Pine Bend                        |                       |           |           |           |           |           |           |           |           |           |            |
|                                  | Trade Secret Ends]    |           |           |           |           |           |           |           |           |           |            |
| <b>Total</b>                     | (\$5,622)             | (\$5,636) | (\$5,731) | (\$5,591) | (\$5,465) | (\$5,458) | (\$5,390) | (\$4,280) | (\$3,875) | (\$3,827) | (\$50,874) |

Per the Negotiated Agreement, the refund provided for should NSP fail to meet its commitment to place thermal generation in-service by 2025 would be equal to half of the total cost identified in the table, or approximately \$25 million.

Please note that the potential refund amount is based on actual generation and costs and that there are many variables that could affect these estimates. The information we are providing reflects our best estimates at this time.

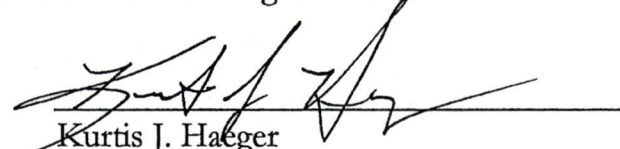
STATE OF NORTH DAKOTA  
BEFORE THE  
PUBLIC SERVICE COMMISSION

IN THE MATTER OF THE APPLICATION  
OF NORTHERN STATES POWER  
COMPANY FOR APPROVAL OF A  
NEGOTIATED AGREEMENT RELATING  
TO NORTH DAKOTA GENERATION  
RESOURCE POLICY

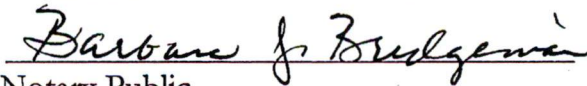
Case No. PU-12-813

STATE OF MINNESOTA    )  
  ) ss.  
COUNTY OF HENNEPIN    )

Kurtis J. Haeger, being first duly sworn on oath, deposes and says that he is the Area Vice President of Resource Planning for Xcel Energy Services Inc., the service company subsidiary of Xcel Energy, in the above captioned matter, that he has read the testimony and schedules submitted in the above captioned matter under his name, that they were prepared under his direction, that he knows the contents thereof, and that the same is true and correct to the best of his knowledge and belief.

  
Kurtis J. Haeger

Subscribed and sworn to before me this 17<sup>th</sup> day of November, 2015.

  
Notary Public

My Commission Expires: January 31, 2020

