

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF SOUTH DAKOTA**

**IN THE MATTER OF THE APPLICATION BY NORTHERN STATES POWER
COMPANY, DOING BUSINESS AS XCEL ENERGY, AND OTTER TAIL POWER
COMPANY FOR A FACILITY PERMIT FOR A 765 KV TRANSMISSION FACILITY
AND ASSOCIATED FACILITIES IN GRANT, DEUEL, AND BROOKINGS COUNTIES,
SOUTH DAKOTA**

SD PUC DOCKET _____

**PRE-FILED DIRECT TESTIMONY OF AARON MIELKE
ON BEHALF OF NORTHERN STATES POWER COMPANY, DOING BUSINESS AS XCEL
ENERGY, AND OTTER TAIL POWER COMPANY**

September 4, 2026

I. INTRODUCTION AND QUALIFICATIONS

Q. Please state your name, employer, and business address.

A. My name is Aaron Mielke. I am employed by Barr Engineering Company (Barr). My business address is 4300 MarketPointe Drive, Suite 200, Minneapolis, Minnesota 55435.

Q. What is your position with Barr?

A. I am employed as a Senior GIS/Environmental Consultant.

Q. Briefly describe your educational and professional background.

A. I have a Bachelor of Science degree in Natural Resource Management majoring in forestry and a master's certificate in Geographical Information Systems (GIS), both from the University of Wisconsin-Madison. Before coming to Barr, I worked with several state and federal agencies as a forester and GIS Specialist. I have been employed by Barr for 20 years and, for the past 15 years, have worked primarily on routing, permitting, and environmental analysis of linear corridor projects, including electric transmission lines and natural gas pipelines. My statement of qualifications is attached as **Schedule 1**.

Q. What is your role with respect to the PowerOn Midwest-Big Stone South to Brookings County to South Dakota/Minnesota Border Project (Project)?

A. My role on the Project is project manager for Barr and lead routing consultant. I manage a team of approximately 12 environmental scientists, GIS specialists, cultural resource specialists, and technical writers who were tasked with developing a route for the Project, performing analysis of its potential impacts to environmental, cultural, and human resources, and preparing the Facility Permit Application (Application).

II. PURPOSE OF TESTIMONY

Q. What is the purpose of your Direct Testimony?

A. The purpose of my Direct Testimony is to describe the studies and analyses Barr performed to evaluate the potential environmental impact of the Project.

1 **Q. What schedules are attached to your Direct Testimony?**

2 A. The following schedule is attached to my Direct Testimony:

- 3 • **Schedule 1**: Statement of Qualifications.

4
5 **Q. Please identify which sections of the Application you are sponsoring for the record.**

6 A. I am sponsoring the following portions of the Application:

- 7 • Section 3.2: Environmental Analysis
- 8 • Section 11: Effect on Physical Environment
- 9 • Section 12: Effect on Hydrology
- 10 • Section 13: Effect of Terrestrial Ecosystems
- 11 • Section 14: Effect on Aquatic Ecosystems
- 12 • Section 15.1 Land Use
- 13 • Section 15.2: Public Lands and Facilities
- 14 • Section 15.4: Visual Resources
- 15 • Section 17: Effect on Water Quality
- 16 • Section 18: Effect on Air Quality
- 17 • Section 20: Community Impact
- 18 • Section 21: Summary of Potential Impacts and Avoidance, Minimization, and
- 19 Mitigation Measures
- 20 • Section 22: Environmental Information
- 21 • Appendix C: Desktop Aquatic Resource Delineation Report
- 22 • Appendix D: CONFIDENTIAL Level I Cultural Resource Records Search Report
- 23 • Appendix G: Soil Data
- 24 • Appendix H: Protected Species

25
26 **III. ENVIRONMENTAL ANALYSIS**

27
28 **Q. Did the Applicants evaluate the potential human and environmental impacts of the**

29 **Project?**

30 A. Yes. The Application reflects that the Applicants undertook comprehensive analysis

31 regarding the potential human and environmental impacts of the Project based on

1 information currently available to the Applicants. This analysis is included in Sections 11,
2 12, 13, 14, 15, 17, 18, 20, and 22, related maps, and Appendices C, D, F, G and H of the
3 Application.

4
5 **Q. Please discuss the wetland and water resources analysis that has been conducted for**
6 **the Project.**

7 A. Wetlands within the Proposed Route and Substation Siting Areas were identified through
8 a desktop wetland determination. The desktop wetland determination process followed a
9 standardized, multi-step methodology for evaluating wetland hydrology. The review
10 involved identifying potential wetland areas using a combination of aerial imagery, hydric
11 soil data, topography (LiDAR), and existing wetland mapping, such as the National
12 Wetlands Inventory (NWI) and National Hydrology Dataset (NHD). Each year of aerial
13 imagery was evaluated in the context of antecedent precipitation (wet, normal, or dry
14 conditions) to confirm that hydrology indicators were interpreted correctly. Most of the
15 wetlands were classified as freshwater emergent wetlands. Additional information is
16 provided in Section 12.4 and Appendix C of the Application.

17
18 **Q. Will the Applicants conduct field wetland verifications?**

19 A. Yes. Field wetland verification will be conducted along the Proposed Route and within the
20 Substation Siting Areas to support permitting efforts. The field work is anticipated to occur
21 in 2027, provided landowner permissions are obtained.

22
23 **Q. Did the Applicants evaluate the Proposed Route with respect to proximity to existing**
24 **residences?**

25 A. Yes. Proximity to residences was a primary consideration in the routing process, and the
26 Application includes an evaluation of the Proposed Route's proximity to existing
27 residences. No residences are anticipated to be displaced by the Project because there are
28 no residences within the Proposed Route or Substation Siting Areas. For 765 kilovolt (kV)
29 facilities, there are no residential structures within 250 or 500 feet of the Proposed Route's
30 centerline, there are five residences within 1,000 feet of the Proposed Route's centerline.
31 For 345 kV facilities, there are no residences within 600 feet of the Proposed Route's

1 centerline. There is one residence within 1,000 feet of the Big Stone South Substation
2 Siting Area and no residences within 1,000 feet of either the Brookings 765 kV Substation
3 Expansion Siting Area or the Brookings 345 kV Substation Expansion Siting Area.
4

5 **Q. Will the Proposed Route cross potentially undisturbed grasslands?**

6 A. Yes. Based on Bauman et al. 2016,¹ potentially undisturbed grasslands (or, PUDL) are
7 relatively prevalent in the Project vicinity, and crossing PUDL is unavoidable, particularly
8 given the Proposed Route's avoidance of other resources (i.e., residences, businesses). The
9 PUDL data for eastern South Dakota represents a conservative estimate (i.e., it represents
10 a maximum amount of PUDL that could be found on the landscape). The data is based on
11 2013 data sources, so any land use changes since that time are not captured. Barr and the
12 Applicants discussed the Project's inability to avoid PUDL with South Dakota Game, Fish,
13 and Parks (SDGFP) on May 13, 2026. In general, however, a transmission line right-of-
14 way is consistent with grassland uses, and the Project will employ measures to avoid and
15 minimize impacts on PUDL due to the Project. For additional information, see Section 13.1
16 of the Application. Likewise, Map 15 depicts PUDL in the Project area.
17

18 **Q. Have the Applicants reviewed previously-identified cultural resources in proximity**
19 **to the Project?**

20 A. Yes. To identify and preliminarily assess cultural resources for the Project, a Level I
21 cultural resources literature review was completed. The Level I cultural resources review
22 focused on identifying previously documented archaeological and historic architectural
23 resources within a one-mile buffer of the Proposed Route and Substation Siting Areas. The
24 results of this analysis are presented in Section 20.5 and Appendix D of the Application.
25

26 **Q. Will the Applicants complete field surveys for cultural resources?**

27 A. Yes. Where landowner permissions are available, a Level III intensive archaeological and
28 Tribal cultural resources survey will be completed in the fall of 2026 and spring and

¹ Bauman, Pete, Carlson, Benjamin and Butler, Tanner. Quantifying Undisturbed Native) Lands in Eastern South Dakota: 2013. 2016.

1 summer of 2027 and will focus on identifying Tribal and archaeological resources within
2 a 500-foot survey corridor (250 feet on either side of the Proposed Route) and the
3 Substation Siting Areas (together, the Survey area). Tribal cultural resource surveys will
4 be completed by Sisseton Wahpeton Oyate and Flandreau Santee Sioux representatives.
5 Simultaneously, a reconnaissance level survey will be completed to identify and record
6 historic architectural resources within the one-mile buffer.

7
8 **Q. Did the Applicants evaluate potential impacts on wildlife?**

9 A. Yes. The Application includes analysis regarding potential impacts on existing wildlife,
10 including avian species, federally protected species, and state sensitive species. The results
11 of this analysis are presented in Section 13.2 and Appendix H of the Application. As further
12 described in Section 13.2 and throughout the Application, potential impacts on these
13 species will be avoided or minimized through the implementation of applicable best
14 management practices. Barr used the SDGFP Environmental Review Tool to obtain spatial
15 information on wildlife species. Barr also consulted SDGFP staff on several occasions with
16 follow up questions regarding the environmental review tool or data within it. Barr and the
17 Applicants met with SDGFP on May 4 and 13, 2026 to discuss the Project and any concerns
18 from SDGFP. On June 1, 2026, Barr conducted a finalized search of the SDGFP South
19 Dakota Nongame Conservation Database for the project. SDGFP responded on June 12,
20 2026, and feedback from SDGFP is generally incorporated into the Application.

21
22 **IV. CONCLUSION**

23
24 **Q. Does this conclude your Direct Testimony?**

25 A. Yes.

26
27 Dated this 4th day of September, 2026.

28
29 /s/ Aaron Mielke

30 Aaron Mielke