

August 10, 2022

VIA E-MAIL AND FEDERAL EXPRESS

Mr. Steven Kahl
Executive Secretary
North Dakota Public Service Commission
600 E. Boulevard, Dept. 408
Bismarck, ND 58505-0480

**Re: Northern States Power Company
Border Winds Energy Project – Rolette County
Case Nos. PU-22-173**

Dear Mr. Kahl:

At the June 29, 2022 informal hearing, the North Dakota Public Service Commission (“Commission”) requested additional information regarding serrated trailing edge (“STE”) technology and Northern States Power Company’s plans for disposal of turbine components removed during repowering of the Border Winds Energy Project.

Additionally, after the informal hearing, Northern States Power Company received letter from the State Historical Society of North Dakota (“SHSND”) concurrent with the Class III Intensive Cultural Resources Inventory: Supplemental 2014 Investigations Report.

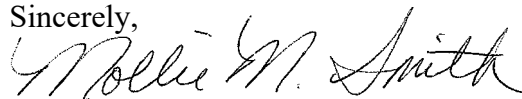
Therefore, enclosed for filing in the above-referenced docket are an original and six copies of this letter and the following documents:

- Supplemental Information: Serrated Trailing Edge Technology;
- Supplemental Information: Disposal of Removed Turbine Components; and
- SHSND Letter, dated July 14, 2022.

Electronic copies of the enclosed documents and this letter were filed with the Commission today via e-mail.

If you have any questions, please let me know.

Sincerely,



MOLLIE M. SMITH

MMS/76878322

Enclosures

cc: Ellen Heine (w/ enclosures, via e-mail)

25 PU-22-173 Filed 08/10/2022 Pages: 4
Supplemental Information
Northern States Power Company
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Northern States Power Company
Border Winds Energy Project
Docket No. PU-22-173

Supplemental Information: Serrated Trailing Edge Technology

At the June 29, 2022 informal hearing, the North Dakota Public Service Commission requested additional information regarding serrated trailing edge (STE) technology, including whether the technology affected power generation and other considerations that factor into determining whether to utilize the technology.

Adding STE technology allows an overall sound power reduction of 1-3 A-weighted decibels (dBA) without affecting power generation. The outer part of the turbine blade's trailing edge is the main driver for aerodynamic noise, created by turbulent air flows along the blade. STEs can be added to turbine blades to reduce noise. The serrations help to mix the airflows, thereby reducing turbulence and ultimately aerodynamic noise. Since the STE is designed not to generate loads on the blade during operation conditions, the power curve and thrust coefficients are not affected. This also applies for a wind farm more broadly, because the wake, which interacts with the downwind wind turbine, is not disturbed by the STE. As a result, the STE does not negatively affect the output of an individual turbine or the wind farm as a whole.

STE are typically not installed on turbines that are able to stay below the statutory sound level thresholds without them. This is because there are additional material and installation costs for the STEs, as well as increased maintenance requirements.

Northern States Power Company
Border Winds Energy Project
Docket No. PU-22-173

Supplemental Information: Disposal of Removed Turbine Components

At the June 29, 2022 informal hearing, the North Dakota Public Service Commission requested additional information regarding Northern States Power Company's plans for disposal of turbine components removed during repowering of the Border Winds Energy Project (Project). Northern States Power Company anticipates three classifications of waste streams to be generated during repowering of the Project and plans to dispose of each as follows:

1. Universal and E-waste: Includes oil, batteries, circuit boards, and electronics. Will be disposed of at qualified Environmental Protection Agency (EPA) certified waste handling facilities.
2. Metals: Includes steel, copper, and aluminum. These components will be transported to a metal scrap/salvage facility. Generally, the salvage value of the materials is approximately equivalent to the labor required to collect, organize, and transport these items.
3. Fiberglass: Includes the blades and hub spinners. Blades and hub spinners will not be left or buried at the Project site. Disposal options include waste-to-energy, reuse or recycling. The specific method and location of disposal is not yet known, but Northern States Power Company will update the Commission closer to the time of the repower once those determinations have been made.



July 14, 2022

Dean Sather
Westwood Professional Services, Inc.
12701 Whitewater Dr
Minnetonka, MN 55343

ND SHPO Ref: 08-1046 Border Winds Energy Project in portions of Rolette and Towner Counties

Dear Dean,

We received ND SHPO Ref: 08-1046 "Class III Intensive Cultural Resources Inventory: Supplemental 2014 Investigations for the Proposed Border Winds Energy Project, Rolette County, North Dakota" in portions of [T162N R69W Section 1, T163N R69W Sections 1-26, 36, T163N R70W Sections 1-3, 10-14, 23-25, T164N R69W Sections 25-36, and T164N R70W Sections 25-27, 34-36] and find this Westwood Professional Services, Inc. report by Ryan P. Grohnke, Dean T. Sather acceptable. We will add it to our Manuscript Collection.

Thank you for the opportunity to review this report. Please be advised that acceptance of this report does not constitute concurrence with the determinations therein. If you have any questions, please contact either Andrew Clark, Chief Archeologist at (701) 328-3574 or andrewclark@nd.gov or Lorna Meidinger, Historic Preservation Specialist at (701) 328-2089 or lbmeidinger@nd.gov.

Sincerely,

for William D. Peterson PhD
State Historic Preservation Officer
(North Dakota)

08-1046