

September 3, 2021

Will Seuffert
Executive Secretary
Minnesota Public Utilities Commission
121 7th Place East, Suite 350
St. Paul, MN 55101-2147

RE: EERA Comments and Recommendations on a Site Permit Amendment for the Grand Meadows
Wind Farm Repowering (Docket No. WS-07-839)

Dear Mr. Seuffert,

Attached are comments and recommendations of Department of Commerce, Energy Environmental
Review and Analysis (EERA) staff in the following matter:

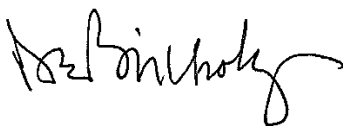
In the Matter of the Site Permit Amendment Application of Northern State Power Company for
the Grand Meadow Wind Farm in Mower County.

The site permit amendment application was filed on May 27, 2021, by:

Matt Langan, Principal Agent
Xcel Energy
414 Nicollet Mall
Minneapolis, MN 55401

EERA staff recommends granting a site permit amendment to facilitate a repowering of the Grand
Meadow Wind Farm. Staff is available to answer any questions the Commission may have.

Sincerely,



David Birkholz, EERA Staff
651.539.1838 | david.birkholz@state.mn.us

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BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

ENERGY ENVIRONMENTAL REVIEW AND ANALYSIS COMMENTS AND RECOMMENDATIONS

Grand Meadow Wind Farm Repower Project ***Docket No. WS-07-839***

Date: September 3, 2021

Staff: David Birkholz | david.birkholz@state.mn.us | 651-539-1838

In the Matter of the Site Permit Amendment Application of Northern States Power Company for the Grand Meadow Wind Farm Repower Project in Mower County

Issues Addressed: These comments and recommendations address whether a site permit amendment should be issued for a repowering of the Grand Meadow Farm and whether the Draft Site Permit adequately addresses the human and environmental impacts of the project.

Additional documents and information, including the permit amendment application, can be found on eDockets by searching “07” for year and “839” at <https://www.edockets.state.mn.us/EFiling/search.jsp> or the EERA webpage at <https://mn.gov/eera/web/project/289/>.

This document can be made available in alternative formats, that is, large print or audio, by calling (651) 539-1530 (voice).

Introduction and Background

Northern States Power Company d/b/a Xcel Energy (applicant or Xcel Energy) currently owns and operates the 100.5-megawatt (MW) Grand Meadow Wind Project in Mower County. The wind farm includes 67 1.5 MW GE 1.5 sle wind turbines and has been in operation approximately 13 years. On May 27, 2021, the applicant filed an application to amend its site permit for the wind farm.¹ The applicant proposes to retrofit the existing wind farm by installing new, larger rotors and replacing components within the wind turbine nacelles.

Project Purpose

The purpose of the repowering project is to improve turbine technology, maximize energy yield, and extend the service life of the turbines. New blades provide an increase in the rotor swept area, which, when coupled with the upgraded generators, results in a corresponding increase in the nominal production capacity of the Project.²

¹ Site Permit Amendment Application for a Large Wind Energy Conversion System (Application), Northern States Power Company, May 27, 2021, <https://mn.gov/eera/web/file-list/14486/>.

² Amendment Application, Section 1.2

Project Description

The applicant proposes to repower the wind farm's existing GE wind turbines by:³

- Replacing the turbine blades, increasing the rotor diameter (RD) from 77 meters to 91 meters for 15 turbines and to 97 meters for 52 turbines;
- Replacing equipment within the wind turbine nacelles, including gearboxes; and
- Installing a lighting mitigation system.

There would be no changes to turbine locations, turbine towers, meteorological towers, the underground electrical connection system, the project substation, or the connecting Substation. Construction of the project would use existing turbine access roads; the applicant indicates that some roads may need to be temporarily widened.

There would be an increase in the electrical capacity of individual wind turbines; the nameplate capacity of the wind farm would increase from 100.5 MW to 107.2 MW. However, the overall capacity at the point of interconnection would remain at 100.5 MW per the existing MISO GIA. The repower project boundary would be reduced to 8,088 acres.

The applicant anticipates that construction of the project would begin in the second quarter of 2023, with an in-service date of December 2023.⁴

Regulatory Process and Procedures

A site permit from the Public Utilities Commission (Commission) is required to construct and operate a large wind energy conversion system (LWECS), which is any combination of wind turbines and associated facilities with the capacity to generate five MW or more of electricity.⁵ Once issued, a site permit may be amended by the Commission if, after providing due process, it finds good cause to do so. The Commission may amend the site permit on its own initiative or upon request.⁶

The Commission has, in recent dockets, considered LWECS site permit amendments for the repowering of wind farms. To afford due process, and based on recent Commission practice, a permittee seeking to repower a wind farm must apply for a site permit amendment and have the application reviewed through a public meeting and comment period (Table 1). On June 24, 2021, Department of Commerce, Energy Environmental Review and Analysis (EERA) staff recommended acceptance of the site permit amendment application as complete and provided a draft site permit for public comment.⁷ On July 2, 2021, the Commission issued notice of a public meeting on the site permit amendment application.⁸ A public meeting was held in person on July 19, 2021 in Dexter, MN and virtually on July 20, 2021. The public comment period closed on August 3, 2021.

³ Amendment Application, Section 1.2, 1,4

⁴ Amendment Application, Section 1.2

⁵ Minnesota Statute 216F.04

⁶ Minnesota Rule 7854.1300

⁷ Comments and Recommendations on Completeness plus Draft Site Permit (Draft Site Permit), EERA, June 24, 2021, eDockets no. [20216-175357-01](#)

⁸ Notice of Public Information Meeting and Comment Period, July 2, 2021, eDockets no. [20217-175813-01](#)

Table 1. Review Process for Grand Meadow Repowering Permit Amendment

Date	Process
May 27, 2021	Filing of Site Permit Amendment Application
Jun 24, 2021	EERA Comments on Application Completeness and Proposed Draft Site Permit
Jul 2, 2021	Notice of Public Information Meeting and Comment Period
Jul 19-20, 2021	Public Information Meetings
Aug 3, 2021	End of Public Comment Period
Aug 17, 2021	Xcel Energy Reply Comments
Sep 3, 2021	EERA Comments on Site Permit Amendment
Sep 30, 2021	Commission Agenda Meeting (Anticipated)

LWECS repowering projects do not require a certificate of need from the Commission if the repowering does not change the nameplate capacity of the project.⁹

Comments

Commission and EERA staff held public meetings regarding the applicant's site permit amendment application in-person in Dexter, MN on July 19, 2021, and virtual (Webex + phone) on July 20, 2021. Approximately 10 interested parties attended the in-person meeting. Michael Kaluzniak of the Commission's Energy Facilities Permitting unit presented on the process involved in permitting repowering projects; Matthew Langan of Xcel Energy presented on the details of the Grand Meadow project; and David Birkholz of EERA presented on the environmental impacts and potential mitigations for the project. The panel solicited questions and comments on the Amendment Application and on the Draft Site Permit submitted by EERA.

Two oral comments were made at the July 19, 2021, meeting: One person expressed his concerns over bad worksite management in the past; and another person requested information on the reason for 91 RD and 97 RD replacement blades (smaller RD used on certain turbines due to noise modeling) and the anticipated location of the Aviation Detection Lighting System (ADLS) radar tower (not finally determined at this point).¹⁰ No other members of the public presented comments or questions.

⁹ Minnesota Statute 216B.243

¹⁰ Record of Public Information Meeting, Shaddix & Associates, July 19, 2021, eDockets no. [20218-176857-01](#)

No parties unaffiliated with the applicant attended the virtual meeting on July 20, 2021, so there were no oral questions or comments.¹¹

Public Comments

Laborers' International Union of North America (LIUNA) Minnesota & North Dakota submitted comments¹² supporting the project due primarily to the creation of quality union construction jobs. LIUNA argues the proposal to use local union labor for the project will guarantee significant socioeconomic benefits to the region and maximize the positive socio-economic benefits of this project.

No other public comments were posted or received through the August 3, 2021, deadline (or after).

Agency Comments

The Minnesota Department of Natural Resources (DNR) made comment¹³ concerning avoidance of impacts to the Mower County Management Snowmobile Trail (funded through a DNR grant-in-aid cost sharing program). DNR advises that Xcel Energy avoid construction activity from December 1 through April 1. If this timeframe is not feasible, they advise the applicant should coordinate with the appropriate trail contact(s) early on to allow time to accommodate any late trail route changes that may cause safety concerns.

The Minnesota Department of Transportation (MnDOT) commented¹⁴ per usual it will not issue any permits, such as access or alterations, until after the Commission has approved an Amended Site Permit. Especially as the construction plan for this project is not immediate, MnDOT requests the applicant familiarize themselves with future state projects for this area as highway construction activities could impact plans to haul oversize loads to the proposed site. Finally, MnDOT requests District Specialists should be given the opportunity to participate in pre-construction meetings as they apply to MnDOT owned property. EERA encourages this participation as a matter of course.

Reply Comments

The applicant filed reply comments on August 17, 2021.¹⁵

The applicant addressed the comments of the DNR, agreeing to consult with DNR on safe crane crossings of the Mower County Management Snowmobile Trail, especially if construction occurs between October 1 and April 1 (Xcel Energy is not currently expecting to construct during the winter). EERA considers this level of cooperation standard and doesn't anticipate the need for additions to the draft permit. In that spirit, EERA suggests that DNR and Xcel Energy coordinate on signage on the snowmobile trail regarding possible ice throw where Turbine 157 and the trail are closer than 250 feet.

¹¹ Record of Public Information Meeting, Shaddix & Associates, July 20, 2021, eDockets no. [20218-176857-02](#)

¹² LIUNA Comment Letter, August 3, 2021, eDockets no. [20218-176801-01](#)

¹³ DNR Comment Letter, August 2, 2021, eDockets no. [20218-176753-01](#)

¹⁴ MnDOT Comment Letter, August 3, 2021, eDockets no. [20218-176783-01](#)

¹⁵ Reply Comments, Xcel Energy, August 17, 2021, eDockets no. [20218-177213-01](#)

The applicant agreed to engage with MnDOT to ensure early coordination on construction, permits and signage. Again, this level of applicant and agency cooperation is anticipated and should not require altering the draft permit. Xcel Energy also included a response to EERA re pre-construction noise modeling methodologies. The consultant's reply was attached to the Reply Comments.

EERA Staff Analysis and Comments

EERA staff believes that the applicant has essentially addressed the comments of the agencies and individuals who brought up issues during the comment period. EERA has offered some assessment of that in the above discussion. Remaining issues are addressed below.

Waiver of Wind Access Buffer Setbacks

With larger blades, the 3x5 RD is naturally larger, in some cases expanding beyond where the applicant has established wind project participation agreements. In some instances, the applicant has been able to enter into new agreements with landowners. In other cases, the applicant has not been able to obtain an agreement and is requesting waivers from the turbine wind access buffer. The application contained a request for the Commission to waive the wind access buffer for 22 of the 67 turbines.¹⁶

In recent repowering dockets, such as the Nobles Wind Farm Repower the Commission has waived wind access buffer setbacks for select turbine locations within a project. In that instance, the wind access buffer waivers were granted conditionally, with an update to be filed 14 days prior to the pre-construction meeting.¹⁷ The Commission has based these waivers on the record regarding:

- Negotiations with landowners and the results of these negotiations.
- The extent of the setback proposed to be waived – i.e., what portion of the 3 RD X 5 RD setback cannot be accomplished; what is its size and where is it located.
- The reason(s) for the waiver request. For example, is a waiver required because of the proposed repowering using longer turbine blades?

The Commission is charged with siting wind farms in an orderly manner that is compatible with environmental preservation, sustainable development, and the efficient use of resources.¹⁸ In instances where the Commission has waived wind access buffers setbacks, it has done so because the waivers supported this charge.

EERA considers the logic in granting waivers in this repowering project as follows:

1. The concept of turbine buffer setback is simply to protect the applicant and the development rights of nonparticipating landowners.
2. The particular of a 3 RD x 5 RD setback has evolved over the last 20 years as the best, conservative estimate to achieve that protection; it is not a legal precedent of "wind rights."

¹⁶ Amendment Application, Section 1.4

¹⁷ Nobles Wind Farm Repower Order and Amended Permit, Commission, July 26, 2021, eDockets Number [20217-176460-01](#), eDockets Number [20218-177505-01](#)

¹⁸ Minnesota Statute 216F.03

3. The larger RD size may or may not have a greater impact on that protection, based on wake-loss studies.
4. EERA supports Xcel extending payments to non-participants who may now experience a technically larger impact due to larger RD.
5. EERA also believes the Commission has a right to waive that condition in its own permit, based on their best assessment of actual impact.

EERA believes the applicant has shown the impact to be *de minimus*. The effect of extending the existing setbacks by the length of the larger rotor would not impede the non-participating landowners from developing their own parcels in any manner or from exercising their own wind development where they hold sufficient land and rights to do so. Given that, EERA would expect the applicant to continue to attempt to reach agreement with non-participating landowners up to and through construction. However, at this point EERA would support the requested waivers as included in the Draft Site Permit.¹⁹

EERA would appreciate further clarification from the Commission before supporting a permit condition using the updated Wind Access Buffer waiver language included in the Nobles Wind Repower Amended Permit:

These variances are granted on the condition that the permittee shall extend a final offer to the remaining landowners for the same amount and terms agreed to by other landowners in similar circumstances or their last offer, whichever is higher. At least 14 days before the preconstruction meeting, the permittee must make a compliance filing describing in detail the results of the negotiation. If no wind rights agreement is reached, the permittee acknowledges that this property will not be foreclosed from installing wind turbine generators on such property at a later date, even if such turbine generators cannot be installed on such property in compliance with the setbacks set forth in this section.²⁰

EERA has historically reviewed a record without regard to transactions on the understanding that the Commission does not involve itself with financial negotiations between landowners and utilities. For example, EERA scoping decisions regularly explicitly exclude this issue, as in Frazee to Erie, “the way landowners are compensated for route easements”²¹ or, as in Plum Creek, “the manner in which landowners are paid for LWECs easements or transmission line right-of-way easements.”²² EERA requests clarification on whether permit conditions of this type should direct how EERA works with public participants in building a record in the future.

If the Commission does include such an order point or permit condition, EERA requests further instruction on compliance review or enforcement. EERA is not clear on the nature of the required compliance review. Furthermore, EERA is not confident it has the qualifications in-house to review legal contracts and transactions between a utility and landowners.

¹⁹ Draft Site Permit, Section 4.1

²⁰ Nobles Amended Permit Section 4.1, or review Plum Creek Wind, August 12, 2021 Agenda Meeting

²¹ EA Scoping Decision, Frazee to Erie 115 kV Transmission, February 12, 2021, eDockets Number [20212-170943-01](#)

²² EIS Scoping Decision, Plum Creek Wind Project, November 3, 2020, eDockets Number [202011-168033-01](#)

Shadow Flicker

Recent Commission LWECS decisions have been establishing 30 hours of shadow flicker as an unofficial standard for considering mitigation for both participants and nonparticipants in new and repowering LWECS projects.²³ Since new orders have included new language to address this, EERA recommends the Draft Site Permit be amended to read:

7.2 Shadow Flicker

At least 14 days prior to the pre-construction meeting, the Permittee shall provide data on shadow flicker for each residence of non-participating landowners and participating landowners within and outside of the project boundary potentially subject to turbine shadow flicker exposure. Information shall include the results of modeling used, assumptions made, and the anticipated levels of exposure from turbine shadow flicker for each residence. The Permittee shall provide documentation on its efforts to avoid, minimize and mitigate shadow flicker exposure. The results of any modeling shall be filed with the Commission at least 14 days prior to the pre-construction meeting to confirm compliance with conditions of this permit.

The Permittee shall develop a project wide Shadow Flicker Management Plan that reduces shadow flicker exposure to less than 30 hours per year for all occupied residences. The Permittee may exclude from the Shadow Flicker Management Plan residences that exceed 30 hours per year by providing documentation that the landowners have reached an alternative agreement as it relates to shadow flicker. If agreement is reached with a landowner regarding shadow flicker after the pre-construction meeting the Permittee may remove that residence from coverage under the plan.

Noise Modeling Methodology

As noted above, RSG (the applicant's technical consultant) filed a response with Xcel Energy's reply comments²⁴ to EERA's request for additional information. EERA had requested further information on their methodology and sources for the standards and guidance that they indicated supported their methodology. EERA is reviewing the response. This is part of EERA's continuing evaluation of noise modeling in relation to post-construction monitoring. EERA will continue discussion with noise consultants to refine noise modeling standards. EERA sees this as separate from the Grand Meadow review and doesn't recommend further study in this docket. No additional permit conditions are recommended.

Pre-construction Waste Disposal

EERA supports an order item such as was included in the Nobles Wind Farm repowering permit amendment:²⁵

²³ Nobles Wind Farm Order, et al.

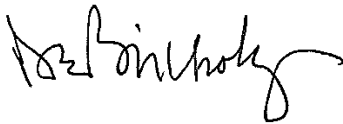
²⁴ Reply Comments, Attachment

²⁵ Nobles Wind Farm Repowering Order

Required a compliance filing at least 14 days before the pre-construction meeting outlining the method for disposal or reuse of the existing turbine blades and other components, providing the estimated cost, options considered, evaluation conducted, option selected or rejected, and the timing for disposal or reuse. Additionally, required an update to the disposal compliance filing after repowering has been completed describing actual costs, timing, and methods for disposal or reuse.

EERA Staff Recommendation

EERA staff recommends approval of the Grand Meadow Wind Farm Site Permit Amendment as it is compatible with environmental preservation, sustainable development and the efficient use of resources. EERA recommends the applicant provide information on compliance of other downstream permits or approvals, such as road agreements and MnDOT approvals. EERA recommends that the Commission waive the standard wind access buffers for the 22 turbines mentioned above, and further recommends the Permittee continue to seek agreements with non-participants newly affected by the larger buffer sizes.



David Birkholz, Environmental Review Manager
Energy Environmental Review and Analysis
Department of Commerce

September 3, 2021

Date