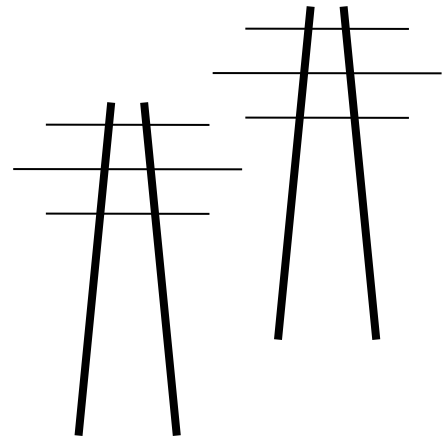


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July 24, 2020

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

via eDockets only

RE: Reply Comments on Landowner Permit Amendment Requests
In the Matter of Wind Energy Conversion System Site Permit for the 84MW
Freeborn Wind Farm in Freeborn County
PUC Docket IP-6946/WS-17-410

Dear Mr. Seuffert and Commissioners:

On behalf of Association of Freeborn County Landowners we offer these Reply Comments in response to NSP/Xcel's Initial Comments on the Site Permit Amendment Requests. Again, the landowners requesting permit amendments are, in order of "Receptor" number, Severtson (Receptor #315), Nelson (Receptor #317), and Gaston (Receptor #337).

NSP/Xcel has two basic lines. First, that "the Commission's jurisdiction pre-empts application of the Ordinance," and Second, that "the assumptions underlying the shadow flicker modeling were thoroughly vetted by the Commission." NSP Initial Comments, p. 2.

If "the Commission's jurisdiction pre-empts application of the Ordinance," let's see its siting criteria and/or standards on shadow flicker. I cannot find any authority regarding "shadow flicker" in the Commission's statutes or rules. The Commission has been mandated to develop siting rules, but has yet to do so, and has rejected petitions for rulemaking. Minn. Stat. §216F.05.

Secondly, NSP's assertion that "the assumptions underlying the shadow flicker modeling were thoroughly vetted by the Commission" is contrary to the record. The assumptions of the modeling have never been laid out or reviewed by the Commission, and the factors by which the raw shadow flicker modeling results have been reduced has never been disclosed. In the contested case, where different shadow flicker modeling was made part of the record, the Administrative Law Judge's Findings of Fact 253 and associated footnote stated:

253. The Commission has not adopted a standard for shadow flicker exposure from wind turbines. Freeborn County's Ordinance contains a requirement to conduct a flicker analysis and states that flicker at a receptor should not exceed 30 hours per year.³⁸⁷ DOC-EERA confirmed that no supporting scientific data has been provided to suggest that there is a link between shadow flicker in excess of 30 hours or more per year of exposure and negative human health impacts, but acknowledged that 30 hours or more of exposure is commonly used as a benchmark at which point mitigation is generally necessary.³⁸⁸

³⁸⁸ Ex. EERA-8 at 29 (Comments and Recommendations on a Preliminary Draft Site Permit); *see also id.* at 18 (Comments and Recommendations on a Preliminary Draft Site Permit) ("30 hours of flicker per year was a suggested standard in a couple of sources of information reviewed by EERA, but those sources do not provide supporting scientific data that would suggest there is a link between shadow flicker in excess of 30 hours per year of exposure and negative human health impacts.").

There are inherent problems with the modeling, and the Administrative Law Judge found the applicant's modeling unreliable:

260. The record demonstrates that Freeborn Wind has taken steps to avoid and minimize impacts from shadow flicker. However, the shadow flicker exposure predictions may be incorrect to a greater or lesser extent because data used in the model is incorrect. The shadow flicker exposure estimates, for example, are based in part on measurements of wind direction and speed taken from "temporary meteorological towers located within the Project."⁴⁰⁰ To the extent that "temporary" measurements of wind direction and speed differ from their long run values, the shadow flicker exposure estimates will be wrong. Similarly, the estimates do not reflect the impact of any longer-term weather trends such as increased (or decreased) cloudiness.

261. The Administrative Law Judge finds Freeborn Wind has provided reasonable estimates for the hours landowners will be exposed to shadow flicker, but they are only estimates. With one modification, the Administrative Law Judge agrees with DOC-EERA's recommendation to require post-construction measurements of shadow flicker. DOC-EERA recommends measuring shadow flicker "at receptor locations that were anticipated to receive over 30 hours of shadow flicker per year." Because the exposure predications may be incorrect, it is possible that a location expected to receive under 30 hours of exposure, might receive over 30 hours. In particular, Shadow Receptors 303 and 401 are predicted to receive more than 27 hours of shadow flicker.⁴⁰¹

Because they are within 10 percent of exceeding the 30 hour limit, the Administrative Law Judge finds it reasonable to monitor their exposure as well. DOC-EERA proposed, and the Administrative Law Judge recommends that, if the Commission issues a Site Permit in this docket, section 7.2 of the Site Permit be revised as recommended by DOC-EERA, with one modification:

Shadow flicker detection systems will be utilized during project operations to monitor shadow flicker exposure at receptor locations that were anticipated to receive over ~~30~~ 27 hours of shadow flicker per year. The Permittee will submit a Shadow Flicker Monitoring and Management Plan at least 14 days prior to the pre-construction meeting. The Shadow Flicker Monitoring and Management Plan will detail the placement and use of any shadow flicker detection systems, how the monitoring data will be used to inform turbine operations, and a detailed plan of when and how turbine operations will be adjusted to mitigate shadow flicker exposure exceeding 30 hours per year at any one receptor. The results of shadow flicker monitoring and mitigation implementation will be reported by the Permittee in the Annual Project Energy Production Report identified in Section 10.8 of this Permit.

262. The condition in Section 7.2 of the Draft Site Permit, as modified, appropriately addresses shadow flicker. It would require the Permittee to provide the Commission with data on shadow flicker for each residence of non-participating landowners and participating landowners within and outside of the Project Area potentially subject to turbine shadow flicker exposure. The data would include the modeling results, assumptions made, and the anticipated level of exposure from turbine shadow flicker for each residence. Freeborn Wind would also be required to provide documentation on its efforts to avoid, minimize, and mitigate shadow flicker exposure.⁴⁰² Modified Section 7.2 of the Draft Site Permit would also identify shadow flicker monitoring, operational planning, and reporting requirements of the Permittee. With the adoption of the operational monitoring, mitigation measures, and reporting requirements, the Project would not be expected to result in significant impacts because of shadow flicker.

Despite the review and vetting of aspects of the shadow flicker information provided by the applicants, and the ALJ's questioning of the reliability of the applicant's modeling and the Recommendation of amendment of the shadow flicker Section 7.2 of the permit, the Commission failed to do so, and instead, claimed to base its Final Order on the County Ordinance!

E. Shadow Flicker

The ALJ recommended that Freeborn Wind design its wind farm in a manner that would limit shadow flicker at nearby residences to no more than 27 hours per year, emphasizing the need to err on the side of caution. But Permit Section 7.2 does not require the Company to monitor shadow flicker at any residence unless that location is expected to receive at least 30 hours per year. AFCL argued that this change was arbitrary.

To the contrary, the 30 hour per year standard arose from Freeborn County's own ordinance.³⁰ Given that Freeborn Wind has committed to using software designed to shut down any turbine that would cause a home to experience more than 30 hours of shadow flicker per year,³¹ the Commission found no support for adopting a 27 hour standard.³² That said, if the Project generates an abnormal level of complaints, Section 7.2 also provides that the Commission may require shadow flicker monitoring at any time throughout the life of the permit.

Also, it should be noted that the Commission's Order and mitigation relies on complaints from those subject to shadow flicker to trigger an "investigation" and maybe mitigation. Investigation and mitigation is not action triggered by objective monitoring, tracking and recording of shadow flicker and its impacts. The "assumptions underlying the shadow flicker modeling" were not "thoroughly vetted" by the Commission, and there was no vetting of the shadow flicker modeling filed by NSP in August, 2020, of the larger turbines.

As a third distinct issue, NSP states that it regards the Permit Amendment Requests as a "request for reconsideration," and a late one at that. Apparently, despite the language of the rule, NSP believes it is acceptable for NSP to request a permit amendment under Minn. R. 7854.1300, Subp. 2, but not for directly affected landowners to do the same. That perception and assertion is not equitable, nor is it supported by the black letter language of the rule.

AFCL strongly supports the Nelson, Gaston, and Severtson requests for Permit Amendments filed under Minn. R. 7854.1300, Subp. 2, and asks that their requests be granted.

Please let me know if you have any questions or require anything further.

Very truly yours

A handwritten signature in cursive script, reading "Carol A. Overland".

Carol A. Overland
Attorney at Law

cc: Dorene Hansen, Association of Freeborn County Landowners