

Staff Briefing Papers

Meeting Date	March 1, 2018	Agenda Item 4**
Company	Wisconsin Power and Light Company	
Docket No.	ET-6657/WS-08-573	
	In the Matter of the Site Permit Issued to the Wisconsin Power and Light Company for the Bent Tree Project in Freeborn County	
Issues	1. What action should the Commission take in response to the findings of the noise study filed on February 8, 2018?	
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 Relevant Documents	Date
Commission - Order (Issuing Site Permit)	October 20, 2009
Commission – Order Requiring Noise Monitoring, Noise Study, and Further Study	August 24, 2016
DOC EERA/DNV-GL – Report: Phase 1 Noise Monitoring Report	September 28, 2017
WPL – Letter on the Phase 1 Noise Monitoring Report	October 11, 2017
DOC EERA/GNV-DL – Report: Phase 2 Noise Monitoring Report	February 8, 2018
WPL – Response to the Phase 2 Noise Report	February 8, 2018
Langrud/Hagen – Motion for Order to Show Cause and Hearing	February 20, 2018
WPL – Comments	February 22, 2018
WPL – Letter (Unrelated to Noise – RE: Ice Throw)	February 23, 2018

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I. Statement of the Issues

What action should the Commission take in response to the findings of the noise study filed on February 8, 2018?

II. Overview of Events

On October 20, 2009, the Commission issued Wisconsin Power and Light (WPL) a large wind energy conversion system site permit for the approximately 200 MW Phase I of the Bent Tree wind project. The Bent Tree wind project is located in Freeborn County, approximately four miles north and west of the city of Albert Lea.

On February 7, 2011, the project commenced commercial operation.

Since 2010, in compliance with site permit conditions, WPL has submitted monthly complaint reports to the Commission documenting local area residents' allegations of site permit violations.

On March 14, 2011, the Commission approved WPL's Operational Sound Level Survey Test Protocol (Noise Monitoring Protocol), as proposed, for Phase I of the Bent Tree Wind Project in Freeborn County pursuant to site permit condition III.F.2.

In April 2011, WPL conducted sound monitoring at locations within the project area and two locations offsite in accordance with the approved noise monitoring protocol for the Bent Tree project.

On November 20, 2013, the Department of Commerce, Energy and Environmental Review and Analysis unit (EERA) filed a compliance review of the Bent Tree project filings and requested WPL to reprocess the data collected during the April 2011 noise monitoring period using the new procedures outlined in its general guidance document, *Guidance for Large Wind Energy Conversion Systems Noise Study Protocol and Report*, released in October 2012 (Noise Monitoring Guide).

In February 2014, WPL filed the reprocessed data and its analysis.

In the fall of 2015 and early 2016, three landowners provided noise-related complaints regarding the Bent Tree project: Gwenneth Regehr, and Cheryl and Bernie Hagen (the Complainants).

On April 12, 2016, EERA filed a letter with the Commission about recent landowner noise complaints, describing the complaints as unresolved and substantial, and potentially violating Site Permit conditions. EERA recommended the Commission initiate the complaint resolution process outlined in Bent Tree's Site Permit's Complaint Handling Procedures.

On April 18, 2016, WPL filed documentation of its efforts to investigate the landowners' noise-related complaints. WPL included an analysis from Hessler and Associates (WPL's noise consultant), which reviewed the 2011 operational sound measurement data obtained from locations near the Regehr and Hagen homes. The analysis concluded the Bent Tree project sound levels are within permissible noise limits.

On April 25, 2016, the Commission sent a letter to WPL and the landowners initiating the Bent Tree project's complaint resolution process and requested written summaries of each landowner's position. The Commission also requested an analysis and recommendations from EERA staff.

In response to the Commission's request for information, WPL and the landowners documented efforts to investigate the complaints.

On May 24, 2016, EERA recommended the Commission require WPL to conduct additional noise monitoring at the Bent Tree project site including at David Langrud's home, an additional landowner who had noise complaints early in the project's operation (see referred herein as 'Complainants').¹

On August 24, 2016, the Commission ordered WPL to conduct additional noise monitoring at the residences of the complainants for a period of 14-days or more.² The monitoring was to be conducted by a noise consultant selected by Commission and EERA staff. While complaints by residents were largely claims relating to low frequency noise, the audible noise anomalies in previous monitoring studies combined with the complaints were deemed sufficient to require further noise monitoring to ensure compliance with the MPCA noise standard.

On September 14, 2016, the Complainants, in conjunction with other persons, filed comments noting the Commission's August 24 Order did not address the Complainants main complaint relating to low frequency noise (sometimes referred to as "infrasound"). The letter requested the Commission not to pursue "audible" noise testing but to instead conduct detailed low-frequency noise testing, which would better address their complaints.

On September 28, 2017, the EERA filed the results of the additional noise monitoring required by the Commission's August 24 Order. The additional monitoring indicated there were potential exceedances of the MPCA noise standard during the monitoring period, which could be due to the wind turbines. Therefore, as the EERA's Noise Monitoring Guide requires, EERA

¹ Following the issuance of this order, Ms. Regehr moved from her residence and the Commission amended its order no longer requiring monitoring at her home.

² As is the typical practice, the initial round of noise monitoring was general project site noise monitoring (total noise at the project area), referred to as Phase I monitoring. If exceedance of the MPCA noise standard is encountered, then Phase 2 Monitoring is required, which involves monitoring during times of wind turbine operation and again during times when the wind turbines are turned off (on/off monitoring). This enables the calculation of the contribution a wind turbine noise at a receptor to the total ambient noise at the same receptor.

recommended that Phase 2 monitoring be conducted to determine the increment of noise due to a sample of wind turbines.

On October 10, 2017, WPL responded it did not believe the additional monitoring indicated Bent Tree was in violation of the MPCA noise standard, arguing there were anomalies in the monitoring data that could be explained on other grounds than the grounds identified by the consultant. Although it did not agree additional noise testing was necessary, WPL agreed to proceed with the Phase 2 monitoring.

On February 8, 2018, the EERA filed the completed on/off noise monitoring report (Phase 2 Report) which indicated the noise levels at the project site may not comply with Site Permit Condition E.3 on noise. This condition incorporates the MPCA noise standard rule (Minn. Rule 7030.0020) by reference. The Phase 2 Report indicated the wind turbines were causing exceedances of the MPCA noise standard at nearby residences.

On February 14, 2018, WPL filed a letter with the Commission indicating that it had modified the operations of three turbines consistent with the findings of the Phase 2 Report to prevent any alleged exceedance of the night time noise standard. WPL did not concede to any of the Phase 2 Report's data, methods, or conclusions, however, indicating it intended to file more detailed and responsive comments by February 22, 2018.

On February 20, 2018, the Complainants filed a motion requesting the Commission issue an order to show cause to WPL, and refer the matter of WPL's violation of its site permit as shown by the Phase 2 Report to the Office of Administrative Hearings for contested case proceedings. The motion also requested that all turbines within 2,500-feet of the Langrud and Hagen residences be shut down pending resolution of the matter.³

On February 22, 2018, WPL provided its preliminary assessment of the Phase 2 Report. WPL noted it intended to provide a more thorough response on March 5, 2018 in its response comments to the February 20, 2018 Motion before the Commission (per Minn. Rule 7829.0410, subp. 2, responses to motions are due within 14-days).

In its February 22 letter, WPL asserted the Phase 2 Report does not show that the Bent Tree Wind Project has exceeded any noise limitations at either of the residences in question. WPL first claims the extrapolation method used, and the data it was based on, are flawed. Second, WPL argues the Phase 2 Report conflicts with the requirements of the MPCA noise standards because the data used to determine the noise level at the receptors was not measured but extrapolated. Third, WPL argues the noise study: "did not include any recording of sources of sound [...] at levels below 60 dBA. In effect, there is no recording of sound and there is no other basis to determine whether exceedances at sound levels below 60 dBA were the result of any

³ The filing also made other claims, such as the use of improper siting criteria for wind site permits issued in Minnesota, which are incorrect. The criteria referenced in the petition, specifically the siting factors listed in 216E.03, subd. 7, are considered in making wind permit determinations in Minnesota, specifically including the Bent Tree permit issued by the Commission.

significant contribution by Bent Tree turbines or other noise sources.” WPL noted there were other issues beyond these three which it intended to raise in its March 5 comments.

WPL confirmed it has, for the interim, curtailed two turbines near the Hagen property and the one turbine near the Langrud property from 7pm to 7am during the weather conditions outlined in the Phase 2 Report.

III. Relevant Statutes and Rules

Minn. Stat. § 216F.04 (d) The Commission may place conditions in a permit and may deny, modify, suspend, or revoke a permit.

Minn. Stat. § 216F.05 (6) The commission shall adopt rules governing the consideration of an application for a site permit for an LWECS that address the following: (6) revocation or suspension of a site permit when violations of the permit or other requirements occur...

Minn. Stat. § 216F.02(a) and Minn. Stat. § 216E.14 A site or route permit for an LWECS may be revoked or suspended by the commission after adequate notice of the alleged grounds for revocation or suspension and a full and fair hearing in which the affected utility has an opportunity to confront any witness and respond to any evidence against it and to present rebuttal or mitigating evidence upon a finding by the commission of:

- (1) any false statement knowingly made in the application or in accompanying statements or studies required of the applicant, if a true statement would have warranted a change in the commission's findings;
- (2) failure to comply with material conditions of the site certificate or construction permit, or failure to maintain health and safety standards; or
- (3) any material violation of the provisions of this chapter, any rule promulgated pursuant thereto, or any order of the commission.

7854.1300 Site Permit Amendment or Revocation.

Subp. 2. Permit amendment. The commission may amend a site permit for an LWECS at any time if the commission has good cause to do so.

Subp. 3. Permit revocation. The commission may revoke a site permit for an LWECS at any time if the commission determines that any of the following has occurred:

1. the applicant knowingly made a false statement in the application or in accompanying statements or studies required of the applicant, if a true statement would have warranted a change in the commission's findings;
2. the applicant has failed to comply with a material condition or term of the permit;
3. the permitted LWECS endangers human health or the environment and the danger cannot be resolved by modification of the permit or LWECS; or

4. the permittee has violated other laws that reflect an inability of the permittee to comply with the permit.

Subp. 4. Procedure. The commission may initiate action to consider amendment or revocation of a site permit for an LWECS on its own initiative or upon the request of any person. No site permit may be amended or revoked without first providing notice and affording due process to the permit holder.

IV. Staff Review and Options to Proceed

February 20 Motion

In the period since this matter was scheduled for a Commission agenda meeting, the February 20 Motion by the Complainants was filed. The February 20 Motion requested the Commission issue an order to WPL to show cause why their site permit should not be revoked; the motion also requested the Commission refer the matter to the Office of Administrative Hearings.

Per Minn. R. 7829.0410, a party responding to a motion must file the response within 14 days of the date the motion was served. While the motion filing letter is dated February 19, the filing is listed as having been filed in eDockets, and thus served, on February 20. The 14-day deadline for responses to the motion is therefore March 6, 2018.

While Staff believes the motion may inform the Commission's consideration of the Phase 2 Report, the Commission must develop an adequate record on the allegations contained in the motion and WPL's response before considering whether to amend or revoke the Bent Tree permit based on those allegations.

For this reason, Staff does not address the merits of the motion here. Per rule, responses will be received and considered as required. However, staff would like to note that one allegation in the motion, that the results of the Phase 2 Report support longstanding noise complaints about the Bent Tree project, is not accurate based on the record as it stands today. Complaints in this docket were largely, if not solely, related to concerns over the impact of low-frequency noise, for which 1) no peer reviewed, science-based evidence (sufficient to determine that low-frequency noise is produced from turbines at a level harmful to human health or the environment) has been provided in any Commission proceeding, and 2) there is no state regulation for any source or level of low frequency noise for the Commission to apply in this case, as the MPCA noise standard is based upon the range of noise that comes with the scope of human hearing, using the dBA-scale.

While the Commission required additional (dBA-scale) noise testing to be conducted, the Complainants opposed such monitoring.⁴ The Commission, however, ordered the monitoring to

⁴ The Complainants opposed during oral argument at the agenda meeting where the Phase 2 monitoring was discussed. Further, the Complainants filed a letter with the Commission on September 14, 2016, after the Phase 2 monitoring order was issued, to object again to the noise monitoring as they believed

clear up EERA's concerns with the original initial (April 2011) noise monitoring. The Commission was advised by EERA as well as the Complainants that standard noise testing would do nothing to resolve the complainants' issues. Therefore staff does not think the results of the Phase 2 Report addresses the substance of the majority of the noise complaints received to date on Bent Tree. However, any violations of state noise standards that are found are nevertheless a serious matter because they document that Bent Tree has been operating outside the acceptable range of noise levels for residents located near the project.

Phase 2 Report and Options to Proceed

While staff is aware there are likely several objections forthcoming to the Phase 2 Report, the report before the Commission today was compiled by a reputable consultant, who was put forth as a potential contractor to conduct monitoring by WPL, and who concluded there are exceedances of Minnesota noise standards by Bent Tree's wind turbines. EERA's cover memo to the report states:

We believe that completion of this "on/off" monitoring campaign fulfills the Commission's August 24th order to conduct monitoring consistent with the guidance contained in the Large Wind Energy Conversion System Noise Study Protocol and Report. Because the report documents that there are periods during which Bent Tree Wind Farm turbines contribute significantly to total noise exceedances, EERA staff believes that noise standards indicated in Condition E. 3 of the Bent Tree Wind Farm LWECs site permit are not being met.

Staff sees several avenues for the Commission to pursue. The Commission could issue an order for WPL to show cause why the record to date does not warrant proceeding any further in investigating the nature and degree of Bent Tree's exceedance of state noise standards at this time. Staff believes an order to show cause would be a reasonable next step. WPL is intending to file more detailed comments in response to the Complainants' Show Cause Motion, and staff believes WPL can readily adjust those comments as may be necessary to respond to an actual Order to Show Cause why the Bent Tree site permit should not be suspended or revoked in light of the Phase 2 Report. Doing so would result in WPL's comments responding to the Commission's concerns about the Phase 2 Report.

Based on WPL's initial objections to the Phase 2 Report, it appears there are several contested issues surrounding the methods used to conduct the monitoring and calculate the results. Those issues need further development in some manner, and it would be more appropriate to proceed to develop the record on these issues pursuant to Commission order rather than in response to the motion of a party.

Absent the forthcoming comments from WPL and response from the EERA (and potentially the noise consultant/s and the MPCA), staff is unclear whether the most appropriate process for record development is through the Commission's comment process, or through contested case proceedings handled by the Office of Administrative Hearings. Further information and

it would not address their on-going complaints.

argument from the parties in response to a Commission show cause order would assist in this decision.

Therefore, staff proposes the Commission issue an Order to Show Cause to WPL asking the company to respond within 30 days of the order why the Bent Tree site permit should not be suspended or revoked for violations of Site Permit Condition E.3 based on the Phase 2 Report, and allowing parties a period of 14-days to reply. Following staff review, the matter can come before the Commission again to consider how to proceed, if necessary.

In addition, staff believes there are several other items which should occur concurrently. First, staff recommends requesting EERA to review the WPL interim curtailment measures to determine whether they are sufficient to ensure project-compliance (with an adequate margin of safety) of the MPCA noise standards and file, as a compliance filing, its analysis. If the interim curtailment provisions are not sufficient, staff would bring the matter before the Commission for further review. Staff would encourage EERA to work with the noise consultant, the MPCA, and WPL to the extent necessary in its review.

Second, staff recommends initial investigation into the appropriate methods to conduct more widespread noise monitoring of the Bent Tree Wind Project should the Commission's review of the parties' filings in response to its Show Cause Order support doing so. Staff does not think additional monitoring should be required if the project is found to be in compliance with the MPCA noise standards following further investigation into the Phase 2 Report nor would additional whole-site monitoring be appropriate if the current noise monitoring results are deemed to be inconclusive.

V. Commission Decision Options

Show Cause

1. Require Wisconsin Power and Light to Show Cause within 30 days of the Commission issuing a Show Cause Order why its Bent Tree Project site permit should not be suspended or revoked.

Suspension/Curtailment

2. Require Wisconsin Power and Light to continue to curtail the Bent Tree Wind Project turbines, as outlined in their February 22, 2018 filing, until authorized by the Commission to terminate curtailment.
3. Suspend operations of turbines (362, 132, and 397) until authorized by the Commission to terminate suspension provisions.
4. Suspend operations of the Bent Tree Wind Project until authorized to restart operations by the Commission.

Other

5. Refer the matter to the Office of Administrative Hearings for findings and a recommendation on:
 - a. whether compliance with the MPCA noise standard can be determined based on the monitoring conducted and the information on the record, and if not,
 - b. what parameters and protocols should be required to obtain scientifically valid on/off wind turbine monitoring data.
6. Require EERA to review options for full project site noise monitoring and file preliminary results with the Commission within 60-days of the order.
7. Require EERA to evaluate the WPL interim curtailment provisions, and file with the Commission a compliance filing by March 19, 2018 on whether the provisions put forth are sufficient to ensure compliance with the MPCA noise standards in light of the violations alleged in the Phase 2 Report.

Staff recommends options: 1, 2, 6, and 7.