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July 14, 2009

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

RE: Certificate of Need Application and
Site Permit Application for
Bent Tree Wind Project
Docket Nos. ET6657/CN-07-1425 and ET6657/WS-08-573
Post Hearing Comments

Dear Dr. Haar:

Enclosed for e-Filing in the above-referenced dockets, please find Wisconsin Power and Light Company's Post Hearing Comments.

Copies of this filing have been served on the Minnesota Office of Energy Security and the Office of the Attorney General – Residential Utilities Division.

Respectfully submitted,

Wisconsin Power and Light Company

By: /s/ Arshia Javaherian
Arshia Javaherian

AJ/mml
Enclosures

cc: Service List

STATE OF MINNESOTA

BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

David C. Boyd
J. Dennis O'Brien
Thomas Pugh
Phyllis A. Reha
Betsy Wergin

Chair
Commissioner
Commissioner
Commissioner
Commissioner

<p>IN THE MATTER OF WISCONSIN POWER AND LIGHT COMPANY'S SITE PERMIT APPLICATION FOR A LARGE WIND ENERGY CONVERSION SYSTEM</p>	<p>DOCKET NO. ET6657/WS-08-573</p>
<p>IN THE MATTER OF THE APPLICATION OF WISCONSIN POWER AND LIGHT COMPANY FOR A CERTIFICATE OF NEED</p>	<p>DOCKET NO. ET6657/CN-07-1425</p>

AFFIDAVIT OF SERVICE

STATE OF IOWA)
) ss.
COUNTY OF LINN)

Mary Margaret Lang, being first duly sworn on oath, deposes and states:

That on the 14th day of July, 2009, copies of the foregoing Affidavit of Service, together with Wisconsin Power and Light Company's Post Hearing Comments, were served upon the parties on the attached service list, by e-filing, messenger, electronic mail, facsimile and/or first-class mail, proper postage prepaid from Cedar Rapids, Iowa.

/s/ Mary Margaret Lang
Mary Margaret Lang

Subscribed and Sworn to Before Me
This 14th day of July, 2009.

/s/ Kimberly A. Burrows
Kimberly A. Burrows
Notary Public
My Commission expires February 2, 2012

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Docket No. ET6656/WS-08-573
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STATE OF MINNESOTA

BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

**David Boyd
J. Dennis O'Brien
Thomas Pugh
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Betsy Wergin**

**Chair
Commissioner
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**IN THE MATTER OF THE APPLICATIONS
OF WISCONSIN POWER AND LIGHT
COMPANY FOR A CERTIFICATE OF NEED
FOR THE 200 MW BENT TREE WIND
GENERATION PROJECT AND
ASSOCIATED FACILITIES AND A SITE
PERMIT FOR UP TO 400 MW OF WIND
ENERGY GENERATION IN FREEBORN
COUNTY**

**DOCKET NOS. ET6657/CN-07-1425
ET6657/WS-08-573**

WISCONSIN POWER AND LIGHT COMPANY'S POST HEARING COMMENTS

I. INTRODUCTION

NOW COMES, Wisconsin Power and Light Company (WPL or the Company) and hereby submits the Company's Post Hearing Comments in response to comments and requests made at the Public Hearing before the Minnesota Public Utilities Commission (Commission) held on June 29, 2009, in Albert Lea, Minnesota at 2:00 p.m. and 7:00 p.m.

II. PROCEDURAL HISTORY

On January 15, 2008, the Commission granted WPL exemptions to certain certificate of need filing requirements and allowed WPL to file their Wisconsin Certificate

of Public Convenience and Need (CPCN) application with the Minnesota Commission in lieu of specific information requested under Minnesota Rules 7849.

On June 20, 2008, WPL submitted its Site Permit Application for a 400 megawatt (MW) Large Wind Energy Conversion System (LWECS) project known as the Bent Tree Wind Project (Bent Tree or Project).

On June 27, 2008, WPL submitted an Application for Certificate of Need (CON) for phase 1 of the Bent Tree LWECS (approximately 200 MW wind generation facility) and a 161 kilovolt (kV) radial line for Project interconnection.

On August 27, 2008 the Commission issued an Order accepting the CON as complete (contingent on a compliance filing) and approving the informal certificate of need review process.

On September 16, 2008, the Commission issued an Order accepting the Site Permit Application (contingent on a compliance filing) and issued a draft site permit for public comment.

On October 21, 2008, a public meeting was held for the purpose of determining the scope of the environmental report.

On November 19, 2008, the Commission issued a Notice of Comment Period soliciting comments on the merits of WPL's CON application. Initial comments were requested to be submitted by January 8, 2009 and reply comments by February 5, 2009.

On December 5, 2008, public comments received by the Office of Energy Security (OES) were filed in the site permit docket.

On January 4, 2009, a comment was received by the OES from Katie V. Troe on behalf of some Freeborn County residents requesting a contested case hearing on the CON application.

On January 8, 2009, the OES provided comments analyzing the merits of WPL's CON application.

On March 24, 2009, the Commission issued an Order in the Site Permit proceeding denying the request for a contested case and ordering a public hearing.

On April 9, 2009, the Commission issued an Order Denying Request for Contested Case Proceeding in WPL's CON proceeding.

On June 29, 2009, joint public hearings were held in Albert Lea, Minnesota to receive public testimony on Need and Siting matters. Public comments and exhibits were recorded and entered into the record, with additional comments allowed to be submitted on or before July 14, 2009.

III. REQUESTS FOR SUBMISSION

A. Requests from Administrative Law Judge (ALJ), OES and Commission Staff

At the public hearings, the ALJ and OES requested that WPL provide total parcel count, including participating parcel owners and non-participating parcel owners. WPL has included as Attachment A, a map describing the participating and non participating land owner parcels for the full site, but specific to Phase 1. The specific breakdown is included in the map and reproduced here:

There are 462 parcels and 298 landowners within the project boundary. 313 parcels (194 landowners) are participating.
149 parcels (114 landowners) are non-participating.

The OES and Commission Staff requested that WPL submit maps with the following setbacks for all residences within the site: 1000 feet, ½ mile, and 1 mile and 1 ½ miles. Those maps are included as Attachment B, Schedules 1 through 4, respectively.

B. Requests from Safe Wind in Freeborn County

Safe Wind in Freeborn County requested that WPL make available non-redacted versions of its Certificate of Need Application and Site Permit Application. WPL notes that it filed a non-redacted Certificate of Need Application on June 27, 2008 and a non-redacted Site Permit Application on August 22, 2008.

IV. ISSUES

A. Setbacks

1. Statutory Guidelines – Commission Issued Site Permit

Minnesota Rules Part 7836.0300 Subpart 1 requires a site permit be issued by the Commission before construction of a LWECS can commence. Minn. Rules, Part 7836.1000 Subpart 4, grants the Commission the authority to set conditions within the site permit.

Regarding setbacks and wind noise, the Commission applies Minnesota Rules Part 7030.0040 Noise Standards, which was explained by the Minnesota Pollution Control Agency (MPCA), the authoritative agency:

Minnesota's noise pollution rules are based on statistical calculations that quantify noise levels according to duration over a one-hour monitoring period. The L10 calculation is the noise level that is exceeded for 10 percent, or six minutes, of the hour, and the L50 calculation is the noise level exceeded for 50 percent, or 30 minutes, of the hour. There is not a limit on maximum noise.

The statutory limits for a residential location are L10 = 65 dBA and L50 = 60 dBA during the daytime (7:00 a.m. – 10:00 p.m.) and L10 = 55 dBA and L50 = 50 dBA during the nighttime (10:00 p.m. – 7:00 a.m.) (Minn. State Noise Pollution Control Rules 7030.0040). This means that during the one-hour period of monitoring, daytime noise levels cannot exceed 65 dBA for more than 10 percent of the time, and cannot exceed 60 dBA more than 50 percent of the time.

Clafin, Anne, 2008 “A Guide to Noise Control in Minnesota: Acoustical Properties, Measurement, Analysis and Regulation,” St. Paul, MN; Minnesota Pollution Control Agency. <<available at <http://www.pca.state.mn.us/publications/p-gen6-01.pdf>>> Downloaded July 9, 2009.

Alternatively, nighttime noise levels cannot exceed 55 dBA for more than 10 percent of the time, and cannot exceed 50 dBA for more than 50 percent of the time. The Commission has set a minimum setback of at least 500 feet, but if compliance with Minn. Rules, Part 7030.0040 on noise standards requires a greater setback, then that becomes the minimum.

a) Participating Landowner

The Commission draft site permit requires that all turbines be at least 500 feet from any occupied residences and conform to the MPCA noise standards discussed above and established in Minn. Rules, Part 7030.0040. Thus, the minimum set back is the greater of 500 feet or the number of feet required to meet the MPCA noise standards when all turbines in the site project are operational.

WPL tests to see that its turbine array or design meets the MPCA noise standard by running a noise model (Windfarmer) that assumes the following:

- 1) All turbines in the site (400 MW worth) are in full operation, that is, spinning at full

- speed for wind conditions that are expected to produce maximum noise levels;
- 2) There are no dampening effects from the natural environment, terrain, topography, meteorological conditions, or structures in the area, to simulate the loudest scenario possible; and
 - 3) A porous ground surface consisting of vegetation to produce minimal noise attenuation was used rather than hard ground surfaces which reflect sound.

The Windfarmer output is then graphically analyzed on a sound contour map with the turbines and all the occupied residences to determine if any residences would experience noise above the standards established by the MPCA in Minn. Rules, Part 7030.0040. The analyses concluded that noise levels would be in compliance with the most stringent nighttime standard of 50 dBA. The closest that an occupied residence came to the modeled 50 dBA sound level was approximately 325 feet, making the 500 foot setback requirement stipulated in the draft site permit, protective of this standard.

Based on the modeling analyses and draft site permit conditions, WPL has voluntarily designed the wind farm to have no turbines closer than 1000 feet to any occupied residences, which is far above the level required by Minn. Rules, Part 7030.0040.

b) Non-Participating Landowner

Non-participating landowners may, in fact, have a greater setback than 1000 feet. The Commission's draft site permit requires all turbines to be no closer than three rotor diameters in the non-prevailing wind direction to any non-participating landowner's property line, and no closer than five rotor diameters in the direction of the prevailing wind. This means that if a non-participating landowner's property is in the *direction of*

the prevailing wind (northwest in the fall and winter; south in the spring and summer), it will be at least 1,345 feet from the turbine base in those directions. This again is the distance to the property line, and many residences could be several hundred feet away from the property line, thus exceeding the voluntary 1000 foot setback.

2. WPL's Minimum Setbacks

WPL has established a minimum setback of 1000 feet to any resident, irrespective of whether that landowner is a participating landowner or a non-participating landowner. WPL also has set back its turbines three to five rotor diameters from non-participating landowners property lines, which translates into a setback of between *807 and 1,345 feet*. Thus, the Bent Tree project will not have any turbines closer than 1000 feet to occupied residences, but due to the three to five rotor diameter setback to property lines for non-participating property owners, their setback could be farther than 1000 feet. Lastly, as described above, the MPCA noise standards for the type of turbines WPL projects are using could allow a turbine to be as close as *325 feet*.

3. Vestas 3.0 MW Turbine Manual

At the public hearing, a Vestas V90 Turbine manual was quoted for recommending a 1400 foot setback. This information is incorrect. WPL first notes that the V90 Turbine is a 3 MW turbine, and WPL is anticipating using a 1.65 MW turbine. Second, WPL contacted Vestas, and was, via the attached letter marked Attachment C, informed that the 1400 foot distance was the recommended safety distance for emergency conditions (such as fire) as opposed to normal operating conditions. This is not an operational setback. Thus, even in an emergency condition, the manufacturer

only recommends an emergency safety distance of 1400 feet. Vestas does not establish a standard operating setback.

4. Reports

a) MDH White Paper

The Minnesota Department of Health (MDH) published a White Paper dated May 22, 2009, entitled “Public Health Impacts of Wind Turbines.” The paper addresses potential sources of noise, low frequency vibration and shadow flicker from wind turbines and discusses those related health impacts reported by citizens who live at varying distances from wind farms. Information was compiled from formal studies in Sweden, the United Kingdom, and the Netherlands. Case reports, both abroad and in the U.S., which have not been through formal technical review were also evaluated. The most common health complaint reported in these studies was sleeplessness and headache.

WPL has chosen a voluntary setback of 1000 feet from occupied residences to be protective of health impacts to local residents and to comply with current Minnesota noise standards. As was done for the Bent Tree Wind Farm, MDH recommended that both noise and shadow flicker be evaluated during the planning stages of a wind farm development to make informed decisions about turbine placement.

b) Hessler Report

Hessler Associates recently published a paper for presentation at the Third International Meeting on Wind Turbine Noise in Aalborg Denmark on June 17-19, 2009 included here as Attachment D. The paper was entitled “Wind Tunnel Testing of Microphone Windscreen Performance Applied to Field Measurements of Wind

Turbines.” Field study data documented in the paper indicates that low frequency noise is being created artificially from monitoring equipment used in sound level analyses and not from operating wind turbines.

Noise data was initially compiled and analyzed during a wind tunnel experiment where a variety of common windscreens were installed on a sound level microphone. The wind tunnel program concluded that windscreens were generating a significant amount of self-noise at low frequencies when experiencing optimal wind speeds. The same artificial noise was observed in two identical field tests: one in a soybean field 1000 feet from an operating turbine, and another in a soybean field three miles away from any turbines.

The Hessler report demonstrates how sound level data, which is used to determine low frequency noise levels from wind turbines, can also be an indicator of other potential low frequency noise sources.

V. CONCLUSION

WPL’s Bent Tree Project does not violate any laws, rules, regulations or standards set by the Minnesota Legislature, the Commission, the MPCA, or recommended in the Draft Site Permit. These laws, rules, regulations and standards were established after the impacts on health, safety, the environment, and local economies were fully vetted and analyzed by state agencies, the legislature, the public and experts. The MPCA’s noise standards are not frivolous, the Commission’s setback standards are not arbitrary—they address different concerns and work in tandem to protect the health and safety of the local residents. To date, these standards have

worked, no complaints have been filed¹, and no one's health or safety has been compromised.

Moreover, WPL will continue to work with local landowners and local governments to ensure that the Bent Tree Project is developed and operated in partnership with the residents and local government of Freeborn County. WPL welcomes feedback and comments now and through the life of the Project. WPL proudly acknowledges that two thirds of the landowners within the Project Site have signed an agreement with WPL. WPL encourages those landowners to discuss their experience in full with the Commission, the OES, and other residents; WPL encourages other landowners to contact WPL with their concerns so that WPL will have the opportunity to address them as well.

WHEREFORE, Wisconsin Power and Light Company appreciates the opportunity to comment after the Public Hearing and respectfully requests the Minnesota Public Utilities Commission approve its Certificate of Need and Site Permit Applications.

DATED this 14th day of July 2009.

Respectfully submitted,

WISCONSIN POWER AND LIGHT COMPANY

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¹ Public Hearing transcript pp. 115-116.