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November 29, 2011

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

RE: **In the Matter of the Application of Shell Rock Wind Farm, LLC for a Large Wind Energy Conversion System Site Permit for the 44 Megawatt Shell Rock Wind Farm in Freeborn County. (Docket No. IP-6858/WS-11-195)**

Dear Dr. Haar:

Attached are the Comments and Recommendations of the Energy Facility Permitting (EFP) staff in the question: Should the Public Utilities Commission issue a site permit to Shell Rock Wind Farm, LLC for the 44 MW Shell Rock Wind Farm?

The site permit application was filed on March 15, 2011 by:

Bruce Freeman
Avant Energy, Inc.
Agent for Minnesota Municipal Power Agency
200 South 6th Street, Suite 300
Minneapolis, MN 55402

EFP staff recommends granting a site permit with conditions as attached and is available to answer any questions the Commission may have.

Sincerely,

David E. Birkholz
State Permit Manager

Attachments

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BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

COMMENTS AND RECOMMENDATIONS OF THE MINNESOTA DEPARTMENT OF COMMERCE ENERGY FACILITY PERMITTING STAFF

DOCKET NO. IP-6858/WS-11-195

Meeting Date: December 8, 2011 .....Agenda Item # __1__

Company: **Shell Rock Wind Farm, LLC**

Docket No. **IP-6858/WS-11-195**

In the Matter of the Site Permit Application of Shell Rock Wind Farm, LLC for a Large Wind Energy Conversion System in Freeborn County.

Issue(s): Should the Public Utilities Commission issue a site permit to Shell Rock Wind Farm, LLC for the 44 MW Shell Rock Wind Farm?

EFP Staff: David Birkholz for Ingrid E. Bjorklund.....651-296-2878

Relevant Documents

Shell Rock Wind Farm LLC, Site Permit Application…….....March 15, 2011
Public Comments …….... May 31, 2011
Public Meeting Comments..... September 23, 2011
Public Written Comments..... September 23, 2011

This document can be made available in alternative formats (i.e., large print or audio) by calling 651-296-0391 (voice). Persons with hearing or speech disabilities may call us through Minnesota Relay at 1-800-627-3529 or by dialing 711.

The enclosed materials are the work papers of the Department of Commerce (DOC) Energy Facility Permitting (EFP) staff. They are intended for use by the Public Utilities Commission (Commission) and are based on information already in the record unless otherwise noted.

Documents Attached

1. Proposed Exhibit List
2. Proposed Findings of Fact, Conclusions and Order
3. Proposed Draft Site Permit
    a. Preliminary Layout Map for the GE 1.5 MW Turbine
    b. Preliminary Layout Map for the Vestas 1.8 MW Turbine

See eDockets filings (11-195) at https://www.edockets.state.mn.us/EFiling/search.jsp, or the Commission website at: http://energyfacilities.puc.state.mn.us/Docket.html?Id=31974 for project related documents.

Statement of the Issues

Should the Commission issue a large wind energy conversion system (LWECS) site permit for the Shell Rock Wind Farm in Freeborn County?

Introduction and Background

Shell Rock Wind Farm, LLC (Applicant or Shell Rock Wind) submitted a site permit application to construct the proposed 44 megawatt (MW) Shell Rock Wind Farm (Project) in Freeborn County. Shell Rock Wind, LLC is a wholly owned subsidiary of Minnesota Municipal Power Agency (MMPA). Avant Energy Inc., is an agent for MMPA. In its role as agent, Avant Energy is responsible for the development and operation of the Project.

Project Location
The proposed site comprises approximately 7,433 acres in the township of Pickerel Lake, located approximately three miles west of Albert Lea. The Applicant represents having site control of approximately 6,593 acres within the Project area. Depending upon final design, the Applicant anticipates the Project will permanently impact 15 acres.

Project Description
The Applicant proposes to install 24 to 29 wind turbine generators, depending on what turbines are ultimately selected, mounted on towers 262.5 feet in height (80 meters). Turbines under consideration are General Electric 1.5 xle turbines, which have a rotor diameter of 271 feet (82.5 meters) and total height of 397 feet (121 meters), and Vestas V90 1.8 MW turbines, which have a rotor diameter of 295 feet (90 meters) and total height of 410.1 feet (125 meters). The proposed Project would also require the following associated facilities as identified in the permit application:

- pad mounted step-up transformers;
- electric feeder and collector lines;
- Supervisory Control and Data Acquisition (SCADA) communication lines;
- access roads;
- permanent meteorological tower; and
- project substation.

The Applicant does not have plans to construct an operations and maintenance building within the Project boundary. The Project would interconnect with the electrical grid at the existing ITC Midwest overhead 69 kV transmission line running along 200th street. The proposed Project substation would be located adjacent to the 69 kV transmission line on the north side of 200th Street between 690th Avenue and 700th Avenue. The Project substation may be permitted by Freeborn County. The Applicant's goal is to achieve commercial operation by December 31, 2012.

Regulatory Process and Procedures

A site permit from the Commission is required to construct a large wind energy conversion system (LWECS), which is any combination of wind turbines and associated facilities with the capacity to generate five megawatts or more of electricity. The Minnesota Wind Siting Act is found at Minnesota Statutes chapter 216F. The rules to implement the permitting requirements for LWECS are in Minnesota Rules chapter 7854. Under Minnesota Rule 7854.1000, subpart 2, the Commission has 180 days to reach a final decision from the date an application is accepted.

Certificate of Need

Shell Rock Wind notes in its application that a certificate of need from the Commission for a large electric power generating plant is not required because the Project is less than 50 MW in size and, therefore, does not meet the definition of large energy facility in Minnesota Statutes section 216B.2421. In an order dated April 15, 2011, the Commission determined no Certificate of Need is required for the Project based on the information in the record at that time.

Site Permit and Application Acceptance

The Applicant filed a site permit application for the Project with the Commission on March 15, 2011. The Commission accepted the site permit application as complete on April 15, 2011.

Preliminary Determination on Draft Site Permit

Pursuant to Minnesota Rule 7854.0800, the Commission has 45 days after application acceptance to make a preliminary determination on whether a Draft Site Permit may be issued or denied. On April 15, 2011, the Commission granted a variance to Minnesota Rule 7854.0800 to extend the period for the Commission to make a preliminary determination on whether a permit may be issued or denied for an unspecified, but reasonable period of time.

On June 24, 2011, the Commission made the preliminary determination to issue a permit and released a Draft Site Permit for the Project. However, issuing a Draft Site Permit does not authorize the Applicant to construct an LWECS. The Commission may change, amend, or modify the Draft Site Permit in any respect before final issuance or may deny the site permit at a later date.

Public Participation Process
EFP staff implemented the public participation process identified in Minnesota Rule 7854.0900. The public was notified that a Draft Site Permit had been issued, a public information meeting was held in Albert Lea on August 24, 2011, and a public comment period was held open through September 12, 2011. EFP staff worked with the public, local governmental units, state agencies, and the Applicant to identify issues, impacts, and potential mitigation measures prior to bringing this matter back to the Commission for a final permit decision upon conclusion of the LWECS site permit process.

Minnesota Rule 7854.0900, subpart 5, provides the opportunity for any person to request that a contested case hearing be held on the proposed LWECS project. The request must be filed within the time period established for submitting Draft Site Permit comments and must include the issues to be addressed in a contested case hearing and the reasons a hearing is required to resolve these issues. No contested case hearing requests were received.

Freeborn County Ordinance
Minnesota Statutes section 216F.08 authorizes counties to assume responsibility for processing permit applications for LWECS with a combined nameplate capacity of less than 25,000 kilowatts. Pursuant to Minnesota Statutes section 216F.08, Freeborn County notified the Commission in writing on June 9, 2008, that the Freeborn County Board of Commissioners assumed permitting responsibility for projects under 25 MW. Certain standards adopted by ordinance by Freeborn County are more stringent than the Commission's General Permit Standards as set forth the in Docket No. E, G-999/M-07-1102. Minnesota Statutes section 216F.081 states that the Commission shall consider and apply those more stringent standards unless the Commission finds good cause not to apply the standards.

EFP Staff Analysis and Comments

EFP staff received a handful of comments on the Draft Site Permit for the Project during a comment period that ended on September 12, 2011. Comments received were from the Minnesota Department of Natural Resources, Freeborn County and a number of residents in the Project area. The comments, and EFP staff responses, are summarized below.

Department of Natural Resources
The DNR commented that it concurred with language in the Draft Site Permit in Section 13.2 regarding an Avian and Bat Protection Plan (ABPP) that includes one year of post-construction fatality surveys. DNR also noted the area was a "moderate" risk for avian and bat fatalities, and has contacted the Permittee as to appropriate protocol for sites classified as moderate risk.

Stating that substantial efforts have been made by the Permittee to avoid impacts to wildlife habitat, the DNR recommended no pre-construction surveys beyond those required in Section 6.1 titled Biological and Natural Resource Inventories.

<u>EFP Staff Response</u>: The Applicant discussed its approach to mitigating wildlife habitat impacts in section 8.19.5 of the application. This mitigation includes implementing a Wildlife Response Reporting System, which will include protocols for field technicians during routine maintenance operations to report and document avian mortalities.

EFP staff believes the need for pre-construction surveys and post-construction surveys should be based on factors unique to each wind project. The tiered approach outlined by USFWS in its Wind Advisory Committee Recommendations (WACR) for assessing impacts to wildlife, which is a risk-based evaluation, implements this concept. The tiered approach allows decisions to be made based on the information gathered at each tier, which provides an opportunity for developers and agencies to evaluate a site based on specific questions and associated data. The Critical Issues Analysis prepared by the Applicant on October 22, 2010, in addition to the site permit application, contains components of a tier two evaluation.

Shell Rock Wind's initial project site was larger and closer to state and federal conservation lands. Both DNR and USFWS had recommended pre- and post-construction surveys due to a high risk of bird and bat fatalities associated with this initial site. The Applicant's Critical Issues Analysis and this early coordination with the DNR and USFWS led to a change in the project boundaries prior to submission of the site permit application. Subsequent analysis identified no avian species of concern within the revised site and, therefore, no need for pre-construction tier three field studies that typically might identify special conditions for consideration in the turbine layout or micrositing process.

DNR's comment letter on January 7, 2011, noted that the revised site is located in an area with less potential impacts to wildlife and that it considered the site a moderate risk for bird and bat fatalities. In this letter and its later communication, DNR noted that it was not recommending any pre-construction surveys but was recommending at least one year of post-construction fatality monitoring, again consistent with the WACR. Since there were no special concerns coming out of tier three surveys, the draft site permit was issued by the Commission on June 24, 2011, with provision for a standard ABPP[1] due prior to construction, and one year of post construction monitoring.

Section 13.2 of the Site Permit contains a special condition requiring the permittee to conduct one year of post-construction avian and bat fatality surveys. Section 6.7 of the Site Permit requires the permittee to prepare an Avian and Bat Protection Plan in consultation with the Commission and DNR. EFP and DNR will work with the Permittee to develop an Avian and Bat Protection Plan that incorporates mitigation methods for the Permittee to reduce wildlife habitat impacts and develop survey plans and protocols to conduct post-construction avian and bat fatality surveys.

Freeborn County Ordinance

Shell Rock Wind preliminary turbine layouts incorporate the setback requirements adopted by the Freeborn County Commission. Comments by the county at the public meeting concerned adherence to county regulations on placing utilities in tiled areas. The county also commented it would work with the Permittee and landowners on road issues, including access points.

[1] A standard ABPP addresses steps to be taken to identify and mitigate impacts to avian and bat species during the construction phase and the operation phase of the Project. The plan would include formal and informal monitoring, training, wildlife handling, documentation (e.g., photographs), and reporting protocols for each phase of the Project.

EFP Staff Response: Many of the standards in the Freeborn County Wind Energy Ordinance (Article 14) are similar to those reflected in the Commission's General Permit standards set forth in Docket No. E-G-999/M-07-1102. However, some standards adopted by Freeborn County are more stringent than the Commission's and are incorporated in the Special Conditions identified in Section 13.1 of the Site Permit. The Applicant has designed its project to meet the setbacks set forth in the Freeborn County Wind Energy Ordinance. Comments from the county concerning clearance from drain tile are addressed in Section 13.1(h) requiring keeping collector and feeder lines at least 12 inches from drain tiles.

Public Comments
Specific comments from the public were on shadow flicker, Electromagnetic Field (EMF) effects, TV reception and decommissioning and restoration. Others noted a preference for a type of turbine and other project layout comments. One speaker at the meeting noted opposition to the Project in general.

EFP Response: Responses to the issues can be found in the proposed Findings of Fact (FOF). Shadow flicker is addressed in FOF 49-52, EMF in FOF 60-61, TV reception in FOF 70 and decommissioning in FOF 99-102.

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Based on the record of this proceeding, EFP staff concludes that the Shell Rock Wind Farm meets the procedural requirements and the considerations and standards for issuance of a site permit identified in Minnesota Statutes and Rules. The Site Permit Application and the record have been reviewed pursuant to the requirements of Minnesota Statutes chapter 216F and Minnesota Rules chapter 7854.

Staff has prepared for Commission consideration an Exhibit List, proposed Findings of Fact, Conclusions of Law and Order, and a proposed Site Permit for the 44 MW Shell Rock Wind Farm.

Exhibit List
EFP staff has prepared and attached an exhibit list of documents that are part of the record in this permit proceeding. See the attached document in the Commissioner's packet.

Proposed Findings of Fact
The attached proposed Findings address the procedural aspects the process followed, describe the Project, and address the environmental and other considerations of the Project. The proposed Findings of Fact reflect some findings that were also made for other LWECS projects. The site considerations addressed in the proposed Findings of Fact (such as human settlement, public health and safety, noise, recreational resources, community benefits, effects on land based economies, archaeological and historical resources, wildlife, and surface water) track the factors described in the Commission's rules for other types of power plants that are pertinent to wind projects.

Proposed Site Permit
The EFP Staff has prepared a site permit for the Commission's consideration. See the attached document in the Commissioner's packet. The conditions in this proposed Site Permit are consistent with conditions included in other LWECS site permits issued by the Commission.

Commission Decision Options

A. Shell Rock Wind Farm Findings of Fact and Conclusions

1. Adopt the attached Findings of Fact, Conclusions of Law and Order proposed for the 44 MW Shell Rock Wind Farm and associated facilities in Freeborn County.

2. Amend the Findings of Fact and Conclusions of Law as deemed appropriate.

3. Make some other decision deemed more appropriate.

B. LWECS Site Permit for the 44 MW Shell Rock Wind Farm

1. Issue the proposed LWECS Site Permit for the Shell Rock Wind Farm to Shell Rock Wind Farm, LLC.

2. Amend the proposed LWECS Site Permit as deemed appropriate.

3. Deny the LWECS Site Permit.

4. Make some other decision deemed more appropriate.

EFP Staff Recommendation: Staff recommends options A1 and B1.

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Exhibit List

In the Matter of the Application of Shell Rock Wind Farm, LLC for a Site Permit for the Shell Rock Wind Farm for up to a 44-Megawatt Large Wind Energy Conversion System in Freeborn County.

PUC Docket No. IP-6858/WS-11-195

EFP Exhibit No.	Exhibit	eDocket Date	eDocket Document Number
1	LWECS Site Permit Application for Shell Rock Wind Farm	3/15/11	20113-60374-05 20113-60374-04 20113-60374-01 20113-60374-02 20113-60374-03
2	EFP Comments and recommendations to the PUC on acceptance of Shell Rock Wind's LWECS Site Permit Application	4/6/11	20114-61065-01
3	PUC Order accepting the Shell Rock Wind Site Permit Application as complete and granting a variance to Minnesota Rule 7854.0800 to extend the period for the PUC to make a preliminary determination on whether a site permit may be issued.	4/15/11	20114-61360-01
4	Notice of Application Acceptance (with Affidavit of Service to landowners and governmental units).	4/27/11	20114-61797-01
5	Affidavits of Publication: Notice of Application Acceptance appearing in the *Alden Advance* (4/28/11) and the *Albert Lea Tribune* (4/27/11).	5/4/11 5/3/11	20115-62279-01 20115-62180-01
6	Affidavits of mailing of application to landowners and government officials for Notice of Application Acceptance (mailed: 4/27/11).	4/28/11	20114-61932-02 20114-61932-03

EFP Exhibit No.	Exhibit	eDocket Date	eDocket Document Number
7	Affidavit of mailing to additional government officials.	4/27/11	20114-61932-01
8	Public and government agency comments on issues to consider in developing the draft site permit. Comment period closed 5/13/11.	5/13/11	20115-63108-01
9	EFP Comments and Recommendations, and Revised Commission Decision Options, to the PUC on issuance of the Draft Site Permit.	6/9/11 6/15/11	20116-63375-01 20116-63590-01
10	PUC Order issuing Draft Site Permit for public review and comment.	6/24/11	20116-64002-01
11	Notice of Availability of Draft Site Permit and Public Meeting.	8/4/11	20118-65024-01
12	Affidavits of Service for Notice of Availability of Draft Site Permit and Public Meeting. Note that the notice was mailed a second time with address corrections to some of the recipients. Certain government officials and the public library also received the draft site permit.	8/8/11 8/8/11 8/16/11 8/17/11	20118-65128-01 20118-65127-01 20118-65416-04 20118-65459-01
13	Affidavits of Publication: Notice of Draft Site Permit and Public Meeting appearing in the *Alden Advance* (8/11/11) and the *Albert Lea Tribune* (8/11/11).	9/14/11 9/13/11	20119-66368-01 20119-66324-02 20119-66324-01
14	Notice of Availability of Draft Site Permit and Public Meeting published 8/8/11 in *EQB Monitor*, Vol. 35, No. 16.	9/12/11	20119-66288-01
15	Record of Public Meeting oral comments held on August 22, 2011.	9/23/11	20119-66579-01
16	Public written comments on the Draft Site Permit.	9/23/11	20119-66579-02

STATE OF MINNESOTA
PUBLIC UTILITIES COMMISSION

Ellen Anderson	Chair
David Boyd	Commissioner
J. Dennis O'Brien	Commissioner
Phyllis Reha	Commissioner
Betsy Wergin	Commissioner

In the Matter of the Application of Shell Rock Wind Farm, LLC for a Large Wind Energy Conversion System (LWECS) Site Permit for the 44 MW Shell Rock Wind Farm in Freeborn County	**ISSUE DATE:** **DOCKET NO. IP-6858/WS-11-195** **FINDINGS OF FACT, CONCLUSIONS OF LAW, AND ORDER ISSUING A SITE PERMIT TO SHELL ROCK WIND FARM, LLC FOR THE SHELL ROCK WIND FARM**

The above-entitled matter came before the Minnesota Public Utilities Commission (Commission) on March 15, 2011, pursuant to an application submitted by Shell Rock Wind Farm, LLC (Shell Rock Wind or Applicant) for a site permit to construct, operate, maintain, and manage the Shell Rock Wind Farm (Project), a 44 megawatt (MW) nameplate capacity Large Wind Energy Conversion System (LWECS), including associated facilities, in Freeborn County.

A public meeting was held on August 24, 2011, in Albert Lea, Minnesota. The meeting was presided over by Department of Commerce (DOC) Energy Facility Permitting (EFP) staff. The meeting continued until all persons who desired to speak had done so. The public comment period closed on September 12, 2011.

STATEMENT OF ISSUE

Should the Applicant be granted a site permit under Minnesota Statutes section 216F.04 to construct a 44 MW LWECS in Freeborn County?

Based upon the record created in this proceeding, the Public Utilities Commission makes the following:

FINDINGS OF FACT

Category	Findings
Background and Procedure	1 –12
Certificate of Need	13
Permittee	14 – 15
Interconnection Agreement	16
Project Description	17 – 29
Site Location, Characteristics, Topography	30 – 31
Wind Resource Considerations	32 – 34
Wind Rights and Easement/Lease Agreements	35 – 36
Site Considerations	37
Human Settlement	38 – 39
County LWECS Ordinance	40 – 43
Noise	44 – 48
Shadow Flicker	49 – 52
Visual Values	53 – 55
Public Health and Safety	56 – 62
Public Services and Infrastructure	63 – 71
Recreational Resources	72 – 77
Community Benefits	78
Effects on Land Based Economics	79 – 80
Property Values	81
Archaeological and historical Resources	82 – 84
Air and Water Emissions	85
Wildlife	86 – 88
Rare and Unique Natural Resources	89 – 90
Vegetation	91
Soils	92
Geologic and Ground Water Resources	93
Surface Water and Wetlands	94
Future Development and Expansion	95 – 97
Maintenance	98
Decommissioning and Restoration	99 – 102
Site Permit Conditions	103 – 105

Background and Procedure

1. On March 15, 2011, Shell Rock Wind filed a LWECS site permit application with the Commission for up to 44 MW of nameplate wind power generating capacity identified as the Shell Rock Wind Farm in Freeborn County.[1]

2. EFP staff reviewed and determined that the application complied with the application requirements of Minnesota Rule 7854.0500.[2]

3. On April 15, 2011, a Commission order was issued accepting the application for the Shell Rock Wind Farm.[3]

4. On April 27, 2011, EFP staff issued a notice of application acceptance.[4] This notice was posted on eDockets on April 27, 2011.

5. Published notice of site permit application acceptance and opportunity to comment on the permit application and issues to consider in the development of a draft site permit appeared in the Alden Advance on April 28, 2011, and the *Albert Lea Tribune* on April 27, 2011.[5] The published notice provided: a) description of the proposed project; b) deadline for public comments on the application; c) description of the site permit review process; and d) identification of the public advisor. The notice published meets the requirements of Minnesota Rule 7854.0600, subpart 2.

6. On April 28, 2011, the Applicant and EFP distributed copies of the site permit application and notice of application acceptance to landowners within the project boundary and government agencies.[6] The notice and application distribution met the requirements of Minnesota Rules 7854.0600, subparts 2 and 3.

7. Public comments on the site permit application and issues to consider in the development of a draft site permit were accepted until May 13, 2011. EFP staff received four written comments.[7]

8. On June 9, 2011, EFP staff recommended that a draft site permit be issued and distributed for public comment.[8] On June 15, 2011, EFP staff eFiled revised Commission decision options.[9]

9. On June 24, 2011, a Commission order made a preliminary determination that a draft site permit may be issued.[10]

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[1] Exhibit 1.
[2] Exhibit 2.
[3] Exhibit 3.
[4] Exhibit 4.
[5] Exhibit 5.
[6] Exhibits 4, 6, and 7.
[7] Exhibit 8.
[8] Exhibit 9.
[9] *Id.*
[10] Exhibit10.

10. On August 4, 2011, EFP staff issued a notice of availability of the draft site permit and public meeting.[11] This notice was posted on eDockets on August 4, 2011. The deadline for submitting comments on the draft site permit was September 12, 2011. The notice met the requirements of Minnesota Rule 7854.0900, subpart 1. Published notice of the availability of the draft site permit and public meeting appeared in the Alder Advance on August 11, 2011, the *Albert Lea Tribune* on August 11, 2011, and the *EQB Monitor* on August 8, 2011, as required by Minnesota Rule 7854.0900, subpart 2.[12] Notice was sent to interested persons, landowners in the Project area, and government agencies.[13] Distribution of the notice of availability of the draft site permit met the requirements in subpart 2.

11. A public meeting was held on the evening of August 24, 2011, in Albert Lea, Minnesota. Approximately 40 people attended the public hearing and 12 people offered testimony. A court reporter prepared a record of the public meeting.[14]

12. EFP staff received seven written comments on the Draft Site Permit.[15]

Certificate of Need

13. The Applicant is not seeking a certificate of need because the Project is not a large energy facility as defined by Minnesota Statutes section 216B.2421.[16]

Permittee

14. Shell Rock Wind is a wholly owned subsidiary of Minnesota Municipal Power Agency (MMPA), serving 11 member communities. Each MMPA member is a publicly owned electric utility. Avant Energy, Inc., serves as the agent for MMPA and will oversee and administer all aspects the project, including design, construction, and operation and maintenance.[17]

15. The electricity generated from the Project will be for the sole use of MMPA and excess power may be sold back to the Midwest Independent Transmission System Operator (MISO).[18]

Interconnection Agreement

16. Shell Rock Wind has not yet secured an interconnection agreement with MISO and is currently in the Definitive Planning Phase of the queue process.[19]

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[11] Exhibit 11.
[12] Exhibits 13 and 14.
[13] Exhibit 12.
[14] Exhibit 15.
[15] Exhibit 16.
[16] Exhibit 1 at 2.
[17] *Id*. at 1.
[18] *Id*. at 8 - 9.
[19] *Id*. at 8.

Project Description

17. The Project nameplate capacity will be 44 MW. The Project will be comprised of up to 29 General Electric (GE) 1.5 xle turbines with a rotor diameter of 271 feet (82.5 meters) or 24 Vestas V90 1.8 MW turbines with a rotor diameter of 295 feet (90 meters).[20] Associated facilities will include pad mounted step-up transformers for each wind turbine, access roads, an electrical collection system (feeder and collector lines), one permanent meteorological tower, and a Project substation.[21] The Project's turbine locations and associated facilities are attached to the site permit.

18. The total height of the tower and blade in the vertical position will be 397 feet (121 meters) for the GE turbine and 410.1 feet (125 meters) for the Vestas turbine.[22] The GE turbine has a rotor speed that varies from 9 to 18 revolutions per minute, a cut-in wind speed of 7.8 miles per hour, and a cut-out wind speed of 56 miles per hour.[23] The Vestas turbine has a rotor speed that varies from 9.3 to 16.6 revolutions per minute, a cut-in wind speed of 7.8 miles per hour, and a cut-out wind speed of 56 miles per hour.[24] The GE and Vestas turbines have a similar rotor and nacelle design. The rotor consists of three blades, composed of carbon fibers and fiberglass, mounted to the hub, which is attached to the nacelle that houses the main components of the wind turbine, including the gearbox, generator, and the main control panel. Electricity is produced by the generator and transmitted through insulated cables to the power conditioning unit known as a pad mount transformer located at the base of the tower.

19. Shell Rock Wind anticipates it will select a turbine type prior to the deadlines associated with compliance filings required prior to the start of construction.

20. The Applicant plans to begin construction in 2012.

21. The turbine towers will have a hub height of 262.5 feet (80 meters).[25]

22. Electricity from the Project will be delivered to the point of interconnection at the existing ITC Midwest overhead 69 kV transmission line running along 200th street.[26]

23. The Project substation will comply with requirements of Freeborn County to be set back at least 40 feet from any county road right-of-way.[27] The proposed Project substation would be located adjacent to the 69 kV transmission line on the north side of 200th Street between 690th Avenue and 700th Avenue.[28] The Applicant has executed an option

[20] *Id*. at 6.
[21] *Id*. at ?
[22] *Id*. at 6.
[23] *Id*.
[24] *Id*.
[25] *Id*. at ?.
[26] *Id*. at 9.
[27] *Id*. at 20.
[28] *Id*. at 9.

agreement with a landowner for the purchase of up to 5 acres, but the final location has yet to be determined.[29]

24. The 34.5 kV electrical collection system will be 12.1 miles in length.[30] The entire electrical collection system will be buried.[31] Section 4.15 of the site permit requires the Applicant to obtain approval from the government unit responsible for the affected rights-of-way. Section 10.5 requires the Applicant to obtain any other federal, state, or local permits or authorizations that may be required, which would include a local utility permit.

25. The Project will have one permanent meteorological tower.[32] The preliminary location for the meteorological towers is included in the turbine layout maps attached to the site permit. Meteorological towers shall be marked as required by the Federal Aviation Administration (FAA). Section 4.11 of the site permit requires that all permanent towers for meteorological equipment shall be free standing (i.e., no guy wires) and not placed closer than 250 feet from the edge of the nearest public road right-of-way and the boundary of the Permittee's site control, or in compliance with the county ordinance regulating meteorological towers in the county the tower is built, whichever is more restrictive.

26. All turbines and the permanent meteorological towers will be interconnected with fiber optic communication cable that will be installed underground. The communication cables will run back to a central host computer. Signals from transformers at each of the delivery points will also be fed to the central SCADA host computer. This computerized supervisory network will provide detailed operating and performance information for each wind turbine. The Applicant will maintain a computer program and database for tracking each wind turbine's maintenance history and energy production.

27. The Project will have between 7.2 and 7.5 miles of permanent miles of access roads, depending on what turbine is selected.[33] Temporary access roads will be 40 to 45 feet wide and permanent access roads will be approximately 16 feet wide using all weather gravel construction.[34]

28. Shell Rock Wind expects to begin commercial operation by December 31, 2012.[35]

29. The estimated Project total installed cost is $100 million and ongoing operations and maintenance are estimated to be $2 million per year.[36]

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[29] *Id*. at 19.
[30] *Id*. at 9.
[31] *Id*.
[32] *Id*. at 10.
[33] *Id*.
[34] *Id*.
[35] *Id*. at ?
[36] *Id*. at 80.

Site Location, Characteristics and Topography

30. The proposed Project will be located in Freeborn County in the Pickeral Lake Township in sections 7 - 9, 16 - 21, and 28 – 30.[37] The Project area is located approximately three miles west of the city of Albert Lea. The Project site encompasses approximately 7,433 acres, which is primarily agricultural land.[38] The Project area is located within the Hardwood Hills Subsection of the Eastern Broadleaf Forest Province (MN State Wildlife Action Plan). Topography of this region is generally ground and hill moraines.[39] Some areas are small hills and are part of two morainic belts that cross the county from north to south.[40] Within the Project area, 22.56 percent of the farmland is considered prime, 48.79 percent is considered prime farmland when drained, 16.03 percent is considered farmland of statewide importance, and 12.63 percent is neither non-prime farmland nor farmland of statewide importance.[41] Elevation varies from 1,263 feet to 1,365 feet above mean sea level.[42] Wind turbine and access roads are sited to take into account the contours of the land to minimize impact.

31. Construction of the turbines sites and access roads will involve temporarily disturbing land within the Project area.

Wind Resource Considerations

32. Wind monitoring within the Project area indicates that the long-term annual predicted mean wind speed at 80 meters (262.5 feet) is 7 to 8 meters per second (15.7 to 17.9 miles per hour).[43] The prevailing wind directions are from the northwest with occasional periods of south-southeasternly flow.[44] In general, a higher percentage of the annual energy budget results from southerly winds, which are most frequent in the warmer weather months. The north and northwest winds typically occur in winter.

33. For this Project, turbines will be generally sited in small clusters within the site boundaries. Wind turbines are sited to have good exposure to winds from all directions with emphasis on exposure to the prevailing wind directions while considering site topography, natural resource features, setbacks and wind resources. The turbines are typically oriented west-southwest to north-northeast, which is roughly perpendicular to the prevailing southerly and northwest winds. Turbine placement, aside from other resource features where setbacks or wind access buffers are required, will be designed to provide sufficient spacing between the turbines to minimize internal wake losses. Given the prevalence for southerly and northerly winds, the spacing is widest in the north-south direction. Greater or lesser spacing between the turbines or turbine strings may be used in areas where terrain dictates the spacing. Sufficient spacing between the turbines is utilized to minimize wake losses when the winds are blowing parallel to the turbines.

[37] *Id*. at 3.
[38] *Id*. at 4.
[39] *Id*. at 33.
[40] *Id*. at 11.
[41] *Id*. at 46.
[42] *Id*. at 68.
[43] *Id*.
[44] *Id*. at 74.

Wake loss occurs when a turbine is spaced too close downwind of another turbine, and therefore, produces less energy and is less cost-effective. Section 4.10 of the site permit addresses turbine spacing.

34. According to the application, projected average net annual output will range from 148,000 to 182,000 MWh (megawatt hours) assuming net capacity factors of approximately 44 percent.[45]

Wind Rights and Easement/Lease Agreements

35. In order to build a wind facility, a developer must secure leases or easement agreements to ensure access to the site for construction and operation of a proposed project. These lease or easement agreements also prohibit landowners from any activities that might interfere with the execution of the proposed Project. Land and wind rights will need to encompass the proposed Project, including all associated facilities such as access roads, meteorological towers, and electrical collection system. Section 10.1 of the site permit requires the Applicant to demonstrate it has obtained the wind rights necessary to construct and operate the Project at least 10 working days before the pre-construction meeting.

36. The Applicant stated it has executed easement agreements that grant Shell Rock Wind the necessary wind rights for the construction and operation of the Project. Within the approximately 7,433 acre site, the Applicant has easement agreements for approximately 6,593 acres.[46]

Site Considerations

37. Minnesota Statutes chapter 216F and Minnesota Rules chapter 7854 apply to the siting of LWECS. The rules require an applicant to provide a substantial amount of information to allow the Commission to determine the potential environmental and human impacts of the proposed project and whether the project is compatible with environmental preservation, sustainable development, and the efficient use of resources.[47] Pursuant to Minnesota Statutes section 216F.02, certain sections in Minnesota Statutes chapter 216E (Minnesota Power Plant Siting Act) apply to siting LWECS, including section 216E.03, subdivision 7 (considerations in designating sites and routes). The analysis of the environmental impacts required by Minnesota Rule 7854.0500, subpart 7, satisfies the environmental review requirements; no environmental assessment worksheet or environmental impact statement is required for a proposed LWECS project.[48] Therefore, environmental review is based on the application and the record. The following analysis addresses the relevant considerations to be applied to a LWECS project.

[45] *Id*. at 80.
[46] *Id*. at 11.
[47] Minn. Stat. § 216F.03 and Minn. R. 7854.0500.
[48] Minn. R. 7854.0500, subp. 7.

Human Settlement

38. The site is in an area of relatively low population density, which is characteristic of rural areas throughout Minnesota. According to the Applicant, approximately 132 people reside within the Project area based on data collected by the U.S. Census to support the American Community Survey between 2005 and 2009.[49] The population of the city of Alden, which is approximately 2 miles northwest of the Project area, is approximately 614. The population of the city of Conger, which is located on the southwestern border of the Project area, is approximately 127.[50] In 2010, Freeborn County had an estimated population of 31,255.[51]

39. There will be no displacement of existing residences or structures in siting the wind turbines and associated facilities. The impact of the proposed Project on human settlement and public health and safety will be minimal.

County LWECS Ordinance

40. Freeborn County adopted a LWECS ordinance on May 20, 2008. The Project area is located in an area zoned for agricultural use, specifically in the Agricultural Zoning District (A).[52]

41. Certain standards adopted by ordinance by Freeborn County are more stringent than the Commission's General Permit Standards as set forth in Docket No. E,G-999/M-07-1102. Minnesota Statutes section 216F.081 requires a site permit to include more stringent standards for LWECS adopted by a county unless there is good cause not to apply those standards.

42. The Draft Site Permit listed the county's more stringent standards as Special Condition 13.1. No comments were received to dispute the special conditions in that document, and they have been carried over into the Site Permit

43. Freeborn County adopted a land use ordinance (Article 18) that requires that underground power lines adhere to a minimum clearance of 12 inches from drainage tile, which could be over or under the tile. Wayne Sorenson, Freeborn County Planning and Zoning Administrator, submitted a comment requesting the site permit include this county requirement (see exhibit 16 for Mr. Sorenson's comment). The Site Permit includes this requirement under special condition 13.1.h.

Noise

44. Wind turbines generate sound or noise when in motion. The level of sound (noise) varies with the speed of the turbine, the distance of the listener or receptor from the turbine, and surface characteristics of the site. Operation and maintenance of wind turbines and

[49] *Id.* at 12.
[50] *Id.*
[51] U.S. Census Bureau, state and county quick facts at http://quickfacts.census.gov/qfd/states/27/27047.html.
[52] Exhibit 1 at 13.

associated facilities increases noise levels. However, increases in noise levels are expected to be minimal due to the noise levels produced by the wind itself. Background noise levels in the Project area are typical of those in a rural setting, where existing nighttime noise levels are commonly in the low to mid-30 dBA. The dBA scale represents A-weighted decibels based on the range of human hearing.

45. Noise impacts to nearby residents will be factored into the turbine micrositing process. The Applicant must demonstrate the Project can meet the noise standard pursuant to Minnesota Rules chapter 7030 (site permit sections 4.2 and 4.3). Noise levels predicted by computer models were compared to the Minnesota Pollution Control Agency (PCA) Daytime and Nighttime L10 and L50 Limits as stated in Minnesota Rule 7030.0040. These standards describe the limiting levels of sound established on the basis of present knowledge for the preservation of public health and welfare. These standards are consistent with speech, sleep, annoyance, and hearing conversation requirements for receivers within areas grouped according to land activities by the Noise Area Classification (NAC) system established in Minnesota Rule 7030.0050. The NAC-1 was chosen for receivers in the Project Area since this classification includes farm houses as household units. Daytime and nighttime limits for classification are: (1) L50 limit of 60 dBA and L10 limit of 65 dBA in daytime and (2) L50 limit of 50 dBA and L10 limit of 55 dBA at nighttime. The nighttime L50 limit of 50 dBA is the most stringent limit.

46. The Applicant analyzed noise for its turbines under consideration using WindPRO version 2.7.[53] The model used wind speeds from 3 to 15 meters per second.[54] Based on the Ontario Ministry of the Environment's "Noise Guidelines for Wind Farms," dated October 2008, a ground adsorption factor of 0.7 was used in the modeling.[55] The modeled maximum L_{50} sound power level at 1,000 feet for a single turbine using these assumptions was 42.6 dB(A) for the GE turbine and 42.1 dB(A) for the Vestas turbine.

47. Cumulative noise impacts resulting from multiple turbine clusters were analyzed and geographically represented in maps included in the application at maps 6a and 6b. The modeling conducted by the Applicant demonstrates that sound levels for both turbine layouts are expected to be below 50 dB(A) at all receptors. Cumulative sound impact analysis results showing the highest modeled L_{50} sound power level were 44.6 dB(A) for the GE turbine and 43.8 dB(A) for the Vestas turbine.[56]

48. Concern was expressed about the impact of noise during the public meeting.[57] Section 6.6 of the site permit requires Shell Rock Wind to conduct a post-construction noise study. The noise study will determine the noise levels at various distances from the turbines at various wind directions and speeds.

[53] *Id*. at 19.
[54] *Id*.
[55] *Id*.
[56] *Id*.
[57] Exhibit 15.

Shadow Flicker

49. Concerns regarding shadow flicker were raised during the comment period on the draft site permit.[58] Shadow flicker is described as a moving shadow on the ground resulting in alternating changes in light intensity. Shadow flicker computer models simulate the path of the sun over the year and assess at regular time intervals the possible shadow flicker across a project area. The outputs of the model are useful in the design phase of a wind farm. Generally, shadow flicker occurs in the morning and evening hours when the sun is low in the horizon and the shadows are elongated. Shadow flicker does not occur when the turbine rotor is oriented parallel to the receptor or when the turbine is not operating. In addition, no shadow flicker will be present when the sun seen from a receptor is obscured by clouds, fog, or other obstacles already casting a shadow such as buildings and trees.

50. Shadow intensity, or how "light" or "dark" a shadow appears at a specific receptor, will vary with the distance from the turbine. Closer to a turbine, the blades will block out a larger portion of the sun's rays and shadows will be wider and darker. Receptors located farther away from a turbine will experience much thinner and less distinct shadows since the blades will not block out as much sunlight. Shadow flicker will be greatly reduced or eliminated within a residence when buildings, trees, blinds, or curtains are located between the turbine and receptor. Shadow flicker consultants generally agree that flicker is not noticeable beyond about 10 rotor diameters from a wind turbine.[59] Evidence of health effects from shadow flicker is scant, suggesting that it is more of a nuisance issue. Shadow flicker impacts on animals are unknown. Minnesota has no published standards for shadow flicker and no examples of turbines causing photosensitivity related problems. Several jurisdictions in other countries have established guidelines for acceptable levels of shadow flicker based on certain assumptions. The site permit does not contain shadow flicker limits.

51. Shell Rock Wind used WindPRO version 2.7 to determine the shadow flicker impact on residences.[60] Based on modeling, the average expected hours of shadow flicker in a typical year for the residence receiving the most shadow flicker in a year is 25 hours for the GE turbine and 22 hours for the Vestas turbine.[61] The initial modeling included assumptions based on measured wind data from the Project area and sunshine probability based on 30 years of data for the Minneapolis/St. Paul Airport.[62] Potential shadow flicker impact maps were included in the application at maps 8a and 8b. The Applicant will consider visual screenings as mitigation if excessive shadow flicker is determined at a residence.[63]

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[58] *Id*.
[59] Environmental Health Division, Minnesota Department of Health, *Public Health Impacts of Wind Turbines*, May 22, 2009, at 14, *available at* http://energyfacilities.puc.state.mn.us/documents/Public%20Health%20Impacts%20of%20Wind%20Turbines,%205.22.09%20Revised.pdf.
[60] Exhibit 1 at 24.
[61] *Id*. at 25.
[62] *Id*. 24 – 25.
[63] *Id*. at 26.

52. Section 6.2 of the site permit requires the Applicant to provide data on the duration of shadow flicker for each residence, noting whether the residence is on property that is participating in the Project, and documentation of efforts to avoid, minimize, and mitigate shadow flicker impacts. Section 4.2 of the site permit requires a setback from residences of 1,000 feet from residences.

Visual Values

53. The placement of up to 29 wind turbine generators for the Shell Rock Wind Farm will affect the appearance of the area. The wind turbines will be mounted on tubular towers that are either approximately 262 feet (80 meters). The rotor blades will have a diameter between 271 and 295 feet and stand between 397 feet and 410.1 feet tall, depending on turbine selection. The turbine towers and rotor blades will be prominent features on the landscape. There will be intermittent, expansive views of the turbines to passing motorists on nearby roads. Further, the Project may be visible to users of public lands (see Findings 72 to 77 for a discussion on recreational resources).

54. The visual impact of the wind turbines will be reduced by the use of a neutral paint color. The only lights will be those required by the Federal Aviation Administration (site permit section 7.18). All site permits issued by the Commission require the use of tubular towers; therefore, the turbine towers will be uniform in appearance. Blades used in the proposed Project will be white or grey. The turbines and associated facilities necessary to harvest the wind for energy are not inconsistent with existing agricultural practices.

55. Wind facilities can be perceived as a visual intrusion on the natural aesthetic value on the landscape or having their own aesthetic quality. Existing wind facilities have altered the landscape elsewhere in Minnesota from agricultural to wind plant/agricultural. This Project will modify the visual character of the area. Wind generation development is likely to continue in Freeborn County. Visually, the Shell Rock Wind Farm will be similar to other LWECS projects located elsewhere in the state.

Public Health and Safety

56. A review of the AirNav, LLC database identified the Albert Lea Municipal Airport as the only airport within five miles of the Project, which is located three miles east of the Project. There is one public airport located within 10 miles of the Project area. A review of the AirNav, LLC database identified the Lake Mills Municipal Airport and the Northwood Municipal Airport within 15 miles of the Project area. The AirNav, LLC database showed several private airports, but none are located within 15 miles of the Project area. Shell Rock reached out to the licensing staff at the Minnesota Department of Transportation (Mn/DOT), which determined that the Albert Lea Municipal Airport is the only licensed airport in Freeborn County.[64] The Applicant has not yet been issued a "no hazard" determination from the Federal Aviation Administration (FAA) and has not yet pursued tall tower permits from the Minnesota Department of Transportation, since a final turbine choice and micrositing have not been completed. Section 4.12 of the site

[64] *Id*. at 40.

permit requires the Applicant to avoid placing wind turbines or associated facilities in a location that could create an obstruction to navigable airspace to certain airports. The Applicant must comply with the requirements of the Minnesota Department of Transportation, Department of Aviation, and FAA (site permit sections 10.5.1 and 4.12).

57. The addition of up to 29 wind turbines in active croplands and one permanent free standing meteorological towers increase the potential for collisions with crop-dusting aircraft. The turbines would be visible from a distance and lighted according to FAA requirements (see section 7.18 of the site permit). The permanent meteorological towers will be free standing and have lighting consistent with the turbines. The Minnesota Aeronautical Chart produced by the Minnesota Department of Transportation is available and shows wind turbine locations throughout the state.

58. As with any large construction project, some risk of worker or public injury exists during construction. Shell Rock Wind and its construction representatives and workers will prepare and implement work plans and specifications in accordance with applicable worker safety requirements during construction of the Project. Shell Rock Wind will also control public access to the Project during construction and operation. Shell Rock Wind will provide security during construction and operation of the project, including fencing, warning signs, and locks on equipment and facilities (site permit section 7.15).

59. Each turbine will be clearly labeled to identify each unit and a map of the site with the labeling system will be provided to local authorities as part of the emergency response plan (site permit sections 7.17 and 7.16).

60. Possible health effects associated with wind turbines and transmission of electricity generally include those from electric and magnetic fields (EMF). The term EMF refers to electric and magnetic fields that are present around electrical devices. Electric fields arise from the voltage or electrical charges and magnetic fields arise from the flow of electricity or current that travels along transmission lines, power collection (feeder) lines, substation transformers, house wiring and electrical appliances. The intensity of the electric field is related to the voltage of the line and the intensity of the magnetic field is related to the current flow through the conductors (transmission line wire).

61. The Applicant believes that the Project will not add significantly to the minimal presence of EMFs that may already occur in the Project area.[65] While there is no conclusive evidence that EMFs from power lines and wind turbines pose a significant health impact, turbines will be installed no closer than 1,000 feet from residences, where EMFs are expected to be at background levels. Based on the most current research on EMFs, and the distance between any turbines or collector lines and homes, the proposed Project is not anticipated to have significant impact to public health and safety due to EMFs.

62. In winter months ice may accumulate on the wind turbine blades when the turbines are stopped or operating very slowly. Furthermore, the anemometer may ice up at the same time, causing the turbine to shut down during any icing event. As weather conditions

[65] *Id.*

change, any ice will normally drop off the blades in relatively small pieces before the turbines resume operation. This is due to flexing of the blades and the blades' smooth surface. Although turbine icing is an infrequent event (2.5 days per year), it remains important that the turbines are not sited in areas where regular human activity is expected below the turbines during the winter months. The turbine setbacks from residences and roads will minimize impacts from ice throw (see sections 4.2, 4.4, and 13.1(d) of the site permit).

Public Services and Infrastructure

63. The proposed Project is expected to have minimal effects on existing public infrastructure. The proposed Project would not generate an increase in traffic volumes or daily human activity, except for a short period of time during construction and occasionally during operation and maintenance activities. The construction contractor will repair any road damage that may occur during the construction of the Project (see site permit section 7.8).

64. Other than short-term impacts, no significant permanent changes in road traffic patterns or volume are expected. The busiest traffic would occur when the majority of the foundation and tower assembly is taking place. Township and county officials will receive advance notice of the construction schedule at the pre-construction meeting, including the timing of the delivery of towers and turbines and arrival of the crane to erect project equipment (site permit section 5.6). Shell Rock Wind will work with all parties involved to address concerns related to roadway use, and adhere to state, county, and township requirements for transportation infrastructure.

65. Construction of the proposed Project requires the addition of access roads that will be located on private property. Access roads would be built adjacent to the turbine towers, allowing access both during and after construction. The access roads will be sited in consultation with local landowners and completed in accordance with specified design requirements, and will be located to facilitate both construction (e.g., cranes) and continued operation and maintenance. Siting roads in areas with unstable soil will be avoided wherever possible. Roads may include appropriate drainage and culverts while still allowing for the crossing of farm equipment. The permanent access roads would comprise between 7.2 and 7.5 miles.[66] Permanent access roads will be approximately 16 feet wide.[67] Local requirements would be followed wherever access roads join state or local roadways. During construction only, temporary access roads will be approximately 40 to 45 feet wide to accommodate delivery of turbines, towers, and other related equipment.[68] During construction, additional traffic will be generated on local roads. The Applicant anticipates it will enter into a Development Agreement with Freeborn County.[69] Once construction is completed, roads will be re-graded, filled, and dressed as needed.

[66] *Id*. at 10.
[67] *Id*.
[68] *Id*.
[69] *Id*. at 13.

66. If access roads are installed across streams or drainage ways, the Applicant, in consultation with Minnesota Department of Natural Resources, will design and locate the roads so the original water flow or drainage patterns are not altered. Any work required below the ordinary high water line, such as road crossings or culvert installation, will require a permit from Minnesota Department of Natural Resources. See section 10.5 of the site permit for a list of other permits that may be required.

67. There is an underground petroleum products pipeline within the Project area that runs in a general southeast to northwest direction thorough the northeastern corner of section nine.[70] A natural gas pipeline is located approximately ¾ of a mile outside the Project area.[71] ITC Midwest, LLC has a 69 kV transmission line running across the northern portion of the Project area.[72] Dairyland Power Cooperative has a 69 kV transmission line that runs north-south approximately one mile west of the Project area.[73]

68. The proposed Project will have approximately 12.1 miles of underground 34.5 kV electrical collector lines within the Project area.[74] Placement of collector and feeder lines is addressed in the site permit at sections 4.15 and special condition 13.1(h).

69. Prior to construction, Gopher State One Call will be contacted to locate underground facilities so they can be avoided. Further, section 7.15 of the site permit requires the Applicant to submit the location of all its underground cables and collector and feeder lines to Gopher State One Call. To the extent Project facilities cross or otherwise affect existing telephone lines or equipment, Shell Rock Wind will make arrangements with applicable service providers to avoid interference with such facilities.

70. The presence or operation of the Project could potentially impact the quality of television and radio reception in the area. Previous analysis on television reception issues indicates that in some cases new antennas or relocation of existing antennas can restore television signal strength reception. Telecommunication copper cables could be affected by the presence of feeder lines associated with a wind facility. Telephone service is provided by Winnebago Cooperative Telephone Association in addition to other local telephone companies.[75] Prior to construction, the Applicant will locate underground telephone cables and coordinate the placement of its underground electrical system with local providers.[76] There is one microwave beam path that intersects the Project boundary in the far southeastern corner of section 29. The Applicant determined that as long as wind turbines are located outside the identified Fresnel zone (see Figure 3 in Appendix E of the site permit application), there should be no impact to the microwave beam path.[77] Comsearch identified several radio stations within a 25-miles radius of the Project area in addition to seven fixed land mobile stations and 18 operating television stations in the

[70] *Id*. at 31.
[71] *Id*.
[72] *Id*. at 32.
[73] *Id*.
[74] *Id*. at 9.
[75] *Id*. at 29.
[76] *Id*.
[77] *Id*. at 29.

vicinity (see Appendix E of the site permit application).[78] The Applicant will not operate the wind farm so as to cause microwave, radio, telecommunications, television, or navigation interference in violation of Federal Communications Commission regulations or other applicable law (site permit section 6.4). If operation of the Project causes such interference, Shell Rock Wind will take steps necessary to correct the problem in a timely manner (site permit section 6.4). Section 6.4 of the site permit requires the Applicant to submit a plan to conduct an assessment of television and radio signal reception, microwave signal patterns, and telecommunications in the Project area prior to construction. Section 4.15 of the site permit requires the Applicant to comply with all Institute of Electrical and Electronics Engineers, Inc. standards.

71. Construction, operation, and maintenance of the proposed Project will comply with all of the required federal, state, and local permit requirements. See section 10.5 of the site permit.

<u>Recreational Resources</u>

72. There are six Wildlife Management Areas (WMA) located within five miles of the Project and 12 WMAs located within 10 miles.[79] WMAs are managed to provide wildlife habitat, improve wildlife production, and provide public hunting. [*list WMAs and more info if needed*] Section 4.5 of the site permit requires that a setback of three RD in non-prevailing wind directions and five RD in prevailing wind directions from all WMAs. The closest WMA is approximately one mile from the Project area.

73. There are six Waterfowl Production Areas (WPA) located within five miles of the Project area and two additional WPAs located within six miles of the Project area.[80] [*list WPAs and more info if needed*] WPAs are managed to protect habitat used for breeding, foraging, shelter, and migration for waterfowl. Section 4.5 of the site permit requires that a setback of three RD in non-prevailing wind directions and five RD in prevailing wind directions from all WPAs. The closest WPA is approximately 0.5 miles from the Project area.

74. There is one Scientific and Natural Area (SNA) located approximately eight miles southwest of the Project area. SNAs are designated areas to protect rare and endangered species habitat, unique plant communities, and significant geologic features. This SNA is located well beyond the setbacks required in the site permit.

75. The RIM Reserve program is the primary land acquisition program for state-held conservation easements and restoration of wetlands and native grasslands on privately owned land in Minnesota. RIM easements are permanent conservation easements. No RIM lands exist in the project boundary. Other conservation easements, such as Conservation Reserve Program (CRP) land, were identified within the Project area.[81] Section 6.1 of the site permit requires certain inventories to be conducted of potentially

[78] *Id*. at 29 – 30.
[79] *Id*. at 36.
[80] *Id*. at 37.
[81] *Id*. at 17

impacted land. Therefore, CRP or additional RIM land would be identified if potentially impacted.

76. The Myre-Big Island State Park is located approximately 7.5 miles from the Project area along the northern shore of Albert Lea Lake .[82] Approximately 103,000 people visit the park annually for activities such as bird watching, hiking, canoeing and camping.[83] The park is located well beyond the setbacks required in the site permit, but may have some visual impact on visitors to the park.

77. There are several natural lakes located within five miles of the Project area, including Pickerel Lake, Bear Lake, and Upper and Lower Twin Lakes.[84] The Project may be seen from recreational users of these lakes.

Community Benefits

78. Shell Rock Wind will pay a Wind Energy Production Tax to the county and townships each year, which is expected to be approximately $177,000 to 218,000 per year.[85] Landowners with wind turbines on their property will also receive payments from the Applicant. The Project is expected to create new job opportunities within the local community, both during construction and operation. The Applicant anticipates that 120 jobs will be created during the construction phase and three permanent jobs will be created.[86]

Effects on Land-Based Economies

79. The turbines and associated facilities are expected to occupy between 15 acres of agricultural land, which is less than one percent of the Project area. A typical turbine will permanently displace approximately 0.5 to 1.0 acre of agricultural land. The application notes the total number of acres that would be temporarily impacted due to construction activities associated with the Project (e.g., grading, soil compaction, access roads, turn around areas, and temporary construction staging areas) would be approximately 94 acres. [87] Overall, impact to agricultural lands as a result of the Project is anticipated to be short term, and is not expected to alter crop production. Once in operation, it may occasionally be necessary for Shell Rock Wind to complete repairs or clear vegetation around a turbine or facility, which could result in additional temporary impacts to agricultural operations. These interruptions are expected to be infrequent and short term. Section 7 of the site permit addresses mitigation measures for agricultural lands.

80. There is one gravel pit within the Project area.[88] The proposed Project does not adversely affect any sand or gravel operations.

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[82] *Id*. at 36 - 37.
[83] *Id*. at 36.
[84] *Id*.
[85] *Id*. at 50.
[86] *Id*. at 49.
[87] *Id*. at 59.
[88] *Id*. at 48.

Property Values

81. A study conducted by the Lawrence Berkley National Laboratory found an absence of negative impacts to property values from wind farms within a project view shed.[89] On June 1, 2010, the Stearns County Assessor's Office prepared "A Study of Wind Energy Conversion System in Minnesota," which did not find any changes in property valuation to properties hosting a wind tower based on information provided by assessors from Dodge, Jackson, Lincoln, Martin, Mower, and Murray counties. However, the study acknowledged that there is insufficient data to allow for a reasonable analysis of the development of wind facilities on property values. The Stearns County study also cited studies completed by the Renewable Energy Policy Project, which analyzed 25,000 sales inside and outside of view sheds of a wind facility and concluded that property values appear not be affected, and a study conducted by the Royal Institute of Chartered Surveyors, which examined the impact of wind facilities on property values in the United Kingdom and found that almost 30 percent of the respondents reported a decrease in property values.

Archaeological and Historical Resources

82. A review of the Minnesota State Historic Preservation Office (SHPO) records found one historic archaeological site within the Project area, which is the Concordia Lutheran Church and Cemetery.[90] There are a total of five historic archaeological sites within one mile of the Project area.[91]

83. An archaeological survey is recommended for all the proposed turbine locations, access roads, junction boxes, and other areas of Project construction impact to document any previously unrecorded archaeological sites within the Project site. Section 6.3 of the site permit requires the Applicant to conduct an archaeological reconnaissance survey (Phase I or Phase IA). An archaeological reconnaissance survey is used to determine if archaeological sites exist within the area or are potentially affected by the Project through literature review and, if warranted, field review including visual inspection and sampling. Depending upon the results of the reconnaissance survey, more detailed work may be necessary.

84. If archaeological sites are found during the Phase I survey, their integrity and significance should be addressed in terms of the site's potential eligibility for placement on the National Register of Historic Places (NRHP). If such sites are found to be eligible for the NRHP, appropriate mitigative measures will need to be developed in consultation with the SHPO, the State Archaeologist, and consulting American Indian communities. Section 6.3 of the site permit also requires the Applicant to stop work and notify the SHPO and the Commission if any unrecorded cultural resources are found during construction.

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[89] Ben Hoen et al., *The Impact of Wind Power Projects on Residential Property Values in the United States*, Lawrence Berkeley National Laboratory (Dec. 2009).
[90] Exhibit 1 at 33.
[91] *Id.*

Air and Water Emissions

85. No harmful air or water emissions are expected from the construction and operation of the Project.

Wildlife

86. DNR reviewers found that due to the location of the project area in a region including wetlands, lakes and conservation lands such as WMAs, WPAs, CREP and RIM properties, the project is a moderate risk for avian and bat fatalities. DNR concurs with language in Section 13.2 for the Avian and Bat Protection Plan. DNR also notes that due to Applicant efforts to avoid impacts to wildlife habitat within its project boundary area, no pre-construction surveys are recommended beyond those customarily required by the Permit Condition 6.1 Biological and Natural Resource Inventories.[92]

87. Recent studies indicate a broad range of avian and bat fatalities across the United States as a result of wind development, with the highest fatalities occurring in the eastern United States. In the Midwest, post-construction studies completed in Iowa, Minnesota, and Wisconsin confirm a broad range of fatalities. The highest bird and bat fatalities were found at the 145 MW Blue Sky Green Field wind facility in Wisconsin, which had bird fatalities at 12 birds per turbine per year and bat fatalities at 40 bats per turbine per year.[93] Fatalities range from one to four birds per turbine per year and from one to eight bats per turbine per year across most of the upper Midwest. Avian and bat studies conducted at the Buffalo Ridge, Minnesota, found an average of one to four bird fatalities per turbine per year and one to three bat fatalities per turbine per year. Projects in areas with similar habitat and cover types would likely have similar fatality rates, depending on migration patterns, known resting and foraging areas, and potential for bat hibernacula. However, as wind facilities increase and move into areas or landscapes where migration or use patterns are less understood, it becomes increasingly difficult to make landscape level comparisons between facilities and predict the impacts on avian and bat populations.

88. Section 6.7 of the site permit requires the Applicant to prepare an Avian and Bat Protection Plan, submit quarterly avian and bat reports, and report dead or injured avian and bats species under certain conditions. Section 6.1 requires the Applicant to conduct pre-construction desktop and field inventories of potentially impacted native prairies, wetlands, and any other biologically sensitive areas within the site and assess the presence of state threatened, endangered, or species of special concern or federally listed species. Section 4.5 requires that turbines and associated facilities will not be constructed in wildlife management areas, waterfowl production areas, or parks and a setback of five rotor diameter in prevailing winds and three rotor diameter in non-prevailing winds is applied to such public lands, which would minimize impacts to wildlife that utilize those public lands. Section 13.2 requires one year of post-construction avian and bat surveys.

[92] Exhibit 16

[93] West, Inc., *Post-Construction Bat and Bird Fatality Study at the Blue Sky Green Field Wind Energy Center, Fond du Lac County, Wisconsin* (December 17, 2009).

Rare and Unique Natural Resources

89. The Minnesota County Biological Survey data and NHIS data show no records within the Project Area. This includes Native Plant Communities, Sites of Biodiversity Significance, Railroad right-of-way prairies and NHIS rare species records.[94] There are NHIS records of the loggerhead shrike, common moorhen and bald eagle in Freeborn County. The project area lacks suitable grasslands for the loggerhead shrike and lacks breeding habitat for common moorhen and bald eagle, though each may occur in the area as migrants.[95]

90. As discussed in Finding 88, the Applicant will prepare an Avian and Bat Protection Plan, which will address rare and unique species. Further, Section 4.7 of the site permit requires a Prairie Protection and Management Plan if native prairie is identified in the surveys required under section 6.1 of the site permit.

Vegetation

91. No public waters, wetlands, or forested land are expected to be adversely affected by the Project. No groves of trees or shelterbelts will need to be removed to construct and operate the system. Native prairie will also be avoided. Section 4.7 of the site permit will require a Prairie Protection and Management Plan if native prairie is discovered in the biological and natural resource inventories required in section 6.1 of the site permit.

Soils

92. The site permit has requirements to implement sound water and soil conservation practices during construction and operation of the Project in order to protect topsoil and adjacent resources and to minimize soil erosion. The Project will be subject to the requirements of the National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) stormwater permit for construction activity. An erosion and sediment control plan and Storm Water Pollution Prevention Plan (SWPPP) will also be prepared for the Project and the disturbed areas will be seeded after construction to stabilize the area (site permit section 7.11).

Geologic and Ground Water Resources

93. The Project area is relatively flat and mostly tiled farmland. Turbines will be located on topographically elevated uplands and are not expected to affect streams, surface water bodies or floodplains. The Project area is served by an extensive network roads, which will provide site access and egress. There are 12 known domestic wells within the Project area, but there may be up to 52 given the number of residences.[96] Impacts to geologic and groundwater resources are not anticipated.

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[94] Exhibit 1 at 65
[95] *Id*. at 66-67
[96] Exhibit 1 at 53.

Surface Water and Wetlands

94. Wind turbines and associated facilities will not be located in public water wetlands, except that collector and feeder lines may cross if authorized by the appropriate permitting agency (site permit section 4.6). A permit may be required if surface waters are impacted (see section 10.5.1 of the site permit). There are three Designated Wildlife Lakes within four miles of the Project area.[97] There are a total of ___ acres of National Wetland Inventory (NWI) wetland types in the Project area.[98] Of the wetlands, __acres are seasonally flooded basin or floodplain, __ acres are shallow marsh, __ acres are deep marsh, and __ acres are shrub swamp wetlands.[99] A wetland delineation report will be completed to determine all wetland boundaries adjacent to areas of proposed turbine locations and the layout will be designed to avoid and minimize wetland impacts.[100] If wetland impacts cannot be avoided, the Applicant must apply for the applicable permits from the U.S. Army Corps of Engineers (see section 10.5 of the site permit regarding other permits or requirements).

Future Development and Expansion

95. Current information suggests windy areas in this part of the state are large enough to accommodate more wind facilities. In addition to existing wind projects, the future will likely bring Freeborn County and surrounding counties additional types and sizes of wind projects supplied by different vendors and installed at different times.

96. While large-scale projects have occurred elsewhere (Texas, Iowa, and California), little systematic study of the cumulative impact has occurred. Research on the total impact of many different projects in one area has not occurred. EFP staff will continue to monitor for impacts and issues related to wind energy development.

97. The Commission is responsible for siting of LWECS "in an orderly manner compatible with environmental preservation, sustainable development, and the efficient use of resources."[101] Section 4.1 of the site permit provides for buffers between adjacent wind generation projects to protect wind production potential.

Maintenance

98. Maintenance of the turbines will be on a scheduled, rotating basis with one or more units normally off for maintenance each day, if necessary. Maintenance on the interconnection points will be scheduled for low wind periods. Shell Rock Wind will have on-site service and maintenance activities, including routine inspections, regular preventive maintenance, unscheduled maintenance and repair, and routine minor maintenance on the wind turbines and associated facilities.

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[97] *Id*. at 54.
[98] *Id*. at ?.
[99] *Id.* ?
[100] *Id. ?*
[101] Minn. Stat. § 216F.03.

Decommissioning and Restoration

99. Section 9.2 of the site permit requires removal of wind facilities to a depth of four feet and restoration and reclamation of the site to the extent feasible. Section 9.2 also requires the Project site be restored within 18 months after expiration.

100. Decommissioning activities will include: (1) removal of all wind turbine components and towers; (2) removal of all pad mounted transformers; (3) removal of overhead and underground cables and lines; (4) removal of foundations; and (5) removal of surface road material and restoration of the roads and turbine sites to previous conditions to the extent feasible.

101. The Applicant has not yet determined a dollar amount necessary to cover decommissioning costs; however, the Applicant assures that adequate funds will be set aside with the oversight of an independent administrator.[102]

102. As provided in section 9.1 of the site permit, the Applicant will ensure that it carries out its obligations to provide for the resources necessary to fulfill its requirements to properly decommission the Project at the appropriate time. Section 9.1 requires the applicant to submit a Decommissioning Plan to the Commission prior to the pre-operation compliance meeting. In addition to any requirements under the site permit, each individual land lease requires proper decommissioning of turbines. The Applicant will be responsible for costs to decommission the Project and associated facilities.

Site Permit Conditions

103. All of the above findings pertain to the Applicant's requested permit for a 44 MW LWECS project.

104. Most of the conditions contained in the site permit were established as part of the site permit proceedings of other wind turbine projects permitted by the Environmental Quality Board and the Public Utilities Commission. Comments received by the Commission have been considered in development of the site permit. Minor changes and special condition additions that provide clarification or additional requirements have been made.

105. The site permit contains conditions that apply to site preparation, construction, cleanup, restoration, operation, maintenance, abandonment, decommissioning, and all other aspects of the Project.

[102] *Id.* at 81.

Based on the foregoing findings, the Minnesota Public Utilities Commission makes the following:

CONCLUSIONS OF LAW

1. Any of the foregoing findings, which more properly should be designated as conclusions, are hereby adopted as such.

2. The Minnesota Public Utilities Commission has jurisdiction over this matter pursuant to Minnesota Statutes section 216F.04.

3. The Applicant has substantially complied with the procedural requirements of Minnesota Statutes chapter 216F and Minnesota Rules chapter 7854.

4. The Minnesota Public Utilities Commission has complied with all procedural requirements required of Minnesota Statutes chapter 216F and Minnesota Rules chapter 7854.

5. The Minnesota Public Utilities Commission has considered all the pertinent factors relative to its determination of whether a site permit should be approved.

6. The Shell Rock Wind Farm is compatible with the policy of the state to site LWECS in an orderly manner compatible with environmental preservation, sustainable development, and the efficient use of resources under Minnesota Statutes section 216F.03.

7. The Minnesota Public Utilities Commission has the authority under section 216F.04 to place conditions in a permit and may deny, modify, suspend, or revoke a permit. The conditions in the site permit are reasonable and appropriate.

Based on the foregoing Findings of Fact and Conclusions of Law, the Minnesota Public Utilities Commission issues the following:

ORDER

A LWECS Site Permit is hereby issued to Shell Rock Wind Farm, LLC to construct and operate the up to 44 MW Shell Rock Wind Farm in Freeborn County in accordance with the conditions contained in the site permit and in compliance with the requirements of Minnesota Statutes section 216F.04 and Minnesota Rules chapter 7854 for Public Utilities Commission Docket No. IP-6858/WS-11-195.

The site permit is attached hereto, with maps showing the approved site and preliminary turbine layouts.

BY THR ORDER OF THE COMMISSION

_____

Burl W. Haar
Executive Secretary

(S E A L)

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STATE OF MINNESOTA PUBLIC UTILITIES COMMISSION

SITE PERMIT FOR A
LARGE WIND ENERGY CONVERSION SYSTEM

IN FREEBORN COUNTY

ISSUED TO
SHELL ROCK WIND FARM, LLC

PUC DOCKET NO. IP-6858/WS-11-195

In accordance with Minnesota Statutes section 216F.04 this site permit is hereby issued to:

Shell Rock Wind Farm, LLC

Shell Rock Wind Farm, LLC is authorized to construct and operate up to a 44 Megawatt Large Wind Energy Conversion System on the site identified in this site permit and in compliance with the conditions contained in this permit.

This permit shall expire thirty (30) years from the date of this approval.

Approved and adopted this _____day of December 2011

BY ORDER OF THE COMMISSION

_____

BURL W. HAAR
Executive Secretary

(S E A L)

This document can be made available in alternative formats (i.e., large print or audio) by calling 651-296-0391 (voice). Persons with hearing or speech disabilities may call us through Minnesota Relay at 1-800-627-3529 or by dialing 711.

Table of Contents

1. PROJECT DESCRIPTION 1

2. DESIGNATED SITE 1
2.1 PROJECT BOUNDARY 1
2.2 TURBINE LAYOUT 1

3. APPLICATION COMPLIANCE 2

4. SETBACKS AND SITE LAYOUT RESTRICTIONS 2
4.1 WIND ACCESS BUFFER 2
4.2 RESIDENCES 2
4.3 NOISE 2
4.4 ROADS 2
4.5 PUBLIC LANDS 3
4.6 WETLANDS 3
4.7 NATIVE PRAIRIE 3
4.8 SAND AND GRAVEL OPERATIONS 3
4.9 WIND TURBINE TOWERS 3
4.10 TURBINE SPACING 4
4.11 METEOROLOGICAL TOWERS 4
4.12 AVIATION 4
4.13 FOOTPRINT MINIMIZATION 4
4.14 COMMUNICATION CABLES 4
4.15 ELECTRICAL COLLECTOR AND FEEDER LINES 5

5. ADMINISTRATIVE COMPLIANCE PROCEDURES 5
5.1 SITE PLAN 5
5.2 NOTICE TO LOCAL RESIDENTS 6
5.3 NOTICE OF PERMIT CONDITIONS 6
5.4 FIELD REPRESENTATIVE 6
5.5 SITE MANAGER 6
5.6 PRE-CONSTRUCTION MEETING 7
5.7 PRE-OPERATION COMPLIANCE MEETING 7
5.8 COMPLAINTS 7

6. SURVEYS AND REPORTING 7
6.1 BIOLOGICAL AND NATURAL RESOURCE INVENTORIES 7
6.2 SHADOW FLICKER 7
6.3 ARCHAEOLOGICAL RESOURCES 7
6.4 INTERFERENCE 8
6.5 WAKE LOSS STUDIES 9
6.6 NOISE 9
6.7 AVIAN AND BAT PROTECTION PLAN 9

6.8 PROJECT ENERGY PRODUCTION 10
6.9 WIND RESOURCE USE 10
6.10 EXTRAORDINARY EVENTS 10

7. CONSTRUCTION AND OPERATION PRACTICES 10
7.1 SITE CLEARANCE 10
7.2 TOPSOIL PROTECTION 11
7.3 SOIL COMPACTION 11
7.4 LIVESTOCK PROTECTION 11
7.5 FENCES 11
7.6 DRAINAGE TILES 11
7.7 EQUIPMENT STORAGE 11
7.8 ROADS 11
7.9 CLEANUP 12
7.10 TREE REMOVAL 12
7.11 SOIL EROSION AND SEDIMENT CONTROL 12
7.12 RESTORATION 13
7.13 HAZARDOUS WASTE 13
7.14 APPLICATION OF HERBICIDES 13
7.15 PUBLIC SAFETY 13
7.16 EMERGENCY RESPONSE 14
7.17 TOWER IDENTIFICATION 14
7.18 FEDERAL AVIATION ADMINISTRATION LIGHTING 14

8. FINAL CONSTRUCTION 14
8.1 AS-BUILT PLANS AND SPECIFICATIONS 14
8.2 FINAL BOUNDARIES 14
8.3 EXPANSION OF SITE BOUNDARIES 14

9. DECOMMISSIONING, RESTORATION, AND ABANDONMENT 15
9.1 DECOMMISSIONING PLAN 15
9.2 SITE RESTORATION 15
9.3 ABANDONED TURBINES 15

10. AUTHORITY TO CONSTRUCT LWECS 15
10.1 WIND RIGHTS 15
10.2 POWER PURCHASE AGREEMENT 16
10.3 FAILURE TO COMMENCE CONSTRUCTION 16
10.4 PREEMPTION OF OTHER LAWS 16
10.5 OTHER PERMITS 16

11. COMMISSION POST-ISSUANCE AUTHORITIES 17
11.1 PERIODIC REVIEW 17
11.2 MODIFICATION OF CONDITIONS 17
11.3 REVOCATION OR SUSPENSION OF PERMIT 17

11.4 MORE STRINGENT RULES 18
11.5 TRANFER OF PERMIT 18
11.6 RIGHT OF ENTRY 18
11.7 PROPRIETAY INFORMATION 18

12. EXPIRATION DATE 19

13. SPECIAL CONDITIONS 19
13.1 APPLICATION OF COUNTY STANDARDS 19
13.2 AVIAN AND BAT PROTECTIONS PLAN 19

ATTACHMENT 1: Site Permit Location Map 1
ATTACHMENT 1A: GE Turbine Layout 1
ATTACHMENT 1B: Vestas Turbine Layout 1
ATTACHMENT 2: Complaint and Handling Procedures for Large Wind Energy Conversion Systems 1-3
ATTACHMENT 3: Compliance Filing Procedure for Permitted Energy Facilities 1
ATTACHMENT 4: Permit Compliance Filings 1-3

SITE PERMIT

This **SITE PERMIT** for a Large Wind Energy Conversion System (LWECS) authorizes Shell Rock Wind Farm, LLC (Permittee) to construct and operate the Shell Rock Wind Farm (Project), up to a 44 Megawatt (MW) nameplate capacity LWECS and associated facilities in Freeborn County, on a site of approximately 7,433 acres in accordance with the conditions contained in this permit.

SECTION 1
PROJECT DESCRIPTION

The up to 44 MW nameplate capacity LWECS authorized to be constructed in this permit will be developed and constructed by the Permittee. The Project will consist of up to 29 General Electric (GE) 1.5 MW wind turbine generators on 262.5 foot (80 meter) towers with a rotor diameter of 271 feet (82.5 meters) or up to 24 Vestas 1.8 MW wind turbine generators on 262.5 foot (80 meter) towers with a rotor diameter of 295 feet (90 meters) having a combined nominal nameplate capacity of approximately 44 MW. Associated facilities will include pad mounted step-up transformers for each wind turbine, access roads, an electrical collection system, feeder and collector lines, Supervisory Control and Data Acquisition (SCADA) communication lines, one permanent meteorological tower, and a Project substation. Power will ultimately be delivered to the existing ITC Midwest overhead 69 kV transmission line.

SECTION 2
DESIGNATED SITE

2.1 PROJECT BOUNDARY

The Project boundary is shown on the map at Attachment 1**.** The Project is located in Freeborn County in the Pickerel Lake Township (sections 7-9, 16-21, 28-30).

2.2 TURBINE LAYOUT

Two preliminary wind turbine and associated facility layouts are shown on maps at Attachments 1A and 1B. Each preliminary layout represents the approximate location of wind turbines and associated facilities within the Project boundary and identifies a layout that minimizes the overall potential human and environmental impacts, which were evaluated in the permitting process. The final layout depicting the location of each wind turbine and associated facility shall be located within the Project boundary. The Project boundary serves to provide the Permittee with the flexibility to do minor adjustments to the preliminary layout to accommodate landowner requests, unforeseen conditions encountered during the detailed engineering and design process, and federal and state agency requirements. Any modification of the location of a wind turbine and associated facility depicted in a preliminary layout shall be done in such a manner as to have comparable overall human and environmental impacts and shall be specifically identified in the site plan pursuant to Section 5.1. The Permittee shall submit the final site layout in the site plan pursuant to Section 5.1.

SECTION 3
APPLICATION COMPLIANCE

The Permittee shall comply with those practices set forth in its site permit application, dated March 15, 2011, and the record of this proceeding unless this permit establishes a different requirement in which case this permit shall prevail.

Attachment 4 contains a summary of compliance filings required under this permit. Attachment 4 is provided solely for the convenience of the Permittee and shall not be construed as a substitute for the conditions contained in this permit.

SECTION 4
SETBACKS AND SITE LAYOUT RESTRICTIONS

4.1 WIND ACCESS BUFFER

Wind turbine towers shall not be placed less than five (5) rotor diameters (RD) on the prevailing wind directions and three (3) RD on the non-prevailing wind directions from the perimeter of the property where the Permittee does not hold the wind rights, without the approval of the Commission. This section does not apply to public roads and trails.

4.2 RESIDENCES

In accordance with the Permittee's site permit application and the Freeborn County Wind Energy Ordinance, wind turbine towers shall not be located closer than 1,000 feet from residences or the distance required to comply with the noise standards pursuant to Minnesota Rule 7030.0040 established by the Minnesota Pollution Control Agency (PCA), whichever is greater.

4.3 NOISE

The wind turbine towers shall be placed such that the Permittee shall comply with noise standards established as of the date of this permit by the PCA at all times at all appropriate locations. The noise standards are found in Minnesota Rules chapter 7030. Turbine operation shall be modified or turbines shall be removed from service if necessary to comply with these noise standards. The Permittee or its contractor may install and operate turbines as close as the minimum setback required in this permit, but in all cases shall comply with PCA noise standards. The Permittee shall be required to comply with this condition with respect to all residences or other receptors in place as of the time of construction, but not with respect to such receptors built after construction of the towers.

4.4 ROADS

Wind turbine and meteorological towers shall not be located closer than 250 feet from the edge of the nearest public road right-of-way.

4.5 PUBLIC LANDS

Wind turbines and associated facilities including foundations, access roads, underground cable and transformers, shall not be located in public lands, including Waterfowl Production Areas, Wildlife Management Areas, Scientific and Natural Areas or county parks, and wind turbine towers shall also comply with the setbacks of Section 4.1.

4.6 WETLANDS

Wind turbines and associated facilities including foundations, access roads, underground cable and transformers, shall not be placed in public waters wetlands, as defined in Minnesota Statutes section 103G.005, subdivision 15a, except that electric collector or feeder lines may cross or be placed in public waters or public waters wetlands subject to permits and approvals by the Minnesota Department of Natural Resources (DNR) and the United States Army Corps of Engineers (USACE).

4.7 NATIVE PRAIRIE

The Permittee shall, in consultation with the Commission and DNR, prepare a Prairie Protection and Management Plan and submit it to the Commission and DNR at least ten (10) working days prior to the pre-construction meeting if native prairie, as defined in Minnesota Statutes section 84.02, subdivision 5, is identified in any biological and natural resource inventories conducted pursuant to Section 6.1. The plan shall address steps taken to avoid impacts to native prairie and mitigation to unavoidable impacts to native prairie by restoration or management of other native prairie areas that are in degraded condition, by conveyance of conservation easements, or by other means agreed to by the Permittee and Commission. Wind turbines and associated facilities, including foundations, access roads, collector and feeder lines, underground cable, and transformers, shall not be placed in native prairie unless addressed in a Prairie Protection and Management Plan. Construction activities, as defined in Minnesota Statutes section 216E.01, shall not impact native prairie unless addressed in a Prairie Protection and Management Plan. Wind turbines and associated facilities, including foundations, access roads, collector and feeder lines, underground cable, and transformers, shall not be located in areas enrolled in the Native Prairie Bank Program.

4.8 SAND AND GRAVEL OPERATIONS

Wind turbines and all associated facilities, including foundations, access roads, underground cable and transformers, shall not be located within active sand and gravel operations, unless otherwise negotiated with the landowner with notice given to the owner of the sand and gravel operation.

4.9 WIND TURBINE TOWERS

Structures for wind turbines shall be self-supporting tubular towers. The towers may be up to 80 meters (262 feet).

4.10 TURBINE SPACING

The turbine towers shall be constructed within the site boundary as shown in Attachment 1. The turbine towers shall be spaced no closer than three (3) RD in the non-prevailing wind directions and five (5) RD on the prevailing wind directions. If required during final micro-siting of the turbine towers to account for topographic conditions, up to 20 percent of the towers may be sited closer than the above spacing but the Permittee shall minimize the need to site the turbine towers closer.

4.11 METEOROLOGICAL TOWERS

Permanent towers for meteorological equipment shall be free standing. Permanent meteorological towers shall not be placed less than 250 feet from the edge of the nearest public road right-of-way and from the boundary of the Permittee's site control, or in compliance with the county ordinance regulating meteorological towers in the county the tower is built, whichever is more restrictive. Meteorological towers shall be placed on property the Permittee holds the wind or other development rights.

Meteorological towers shall be marked as required by the Federal Aviation Administration (FAA). There shall be no lights on the meteorological towers other than what is required by the FAA. This restriction shall not apply to infrared heating devices used to protect the wind monitoring equipment.

4.12 AVIATION

The Permittee shall not place wind turbines or associated facilities in a location that could create an obstruction to navigable airspace of public and private airports (as defined in Minnesota Rule 8800.0100, subparts 24a and 24b) in Minnesota, adjacent states, or provinces. The Permittee shall apply the minimum obstruction clearance for private airports pursuant to Minnesota Rule 8800.1900, subpart 5. Setbacks or other limitations shall be followed in accordance with the Minnesota Department of Transportation (DOT), Department of Aviation, and the FAA. The Permittee shall notify owners of all known airports within six (6) miles of the Project prior to construction.

4.13 FOOTPRINT MINIMIZATION

The Permittee shall design and construct the LWECS so as to minimize the amount of land that is impacted by the LWECS. Associated facilities in the vicinity of turbines such as electrical/electronic boxes, step-up transformers, and monitoring systems shall, to the greatest extent feasible, be mounted on the foundations used for turbine towers or inside the towers unless otherwise negotiated with the affected landowner(s).

4.14 COMMUNICATION CABLES

The Permittee shall place all supervisory control and data acquisition (SCADA) communication cables underground and within or adjacent to the land necessary for turbine access roads unless otherwise negotiated with the affected landowner(s).

4.15 ELECTRICAL COLLECTOR AND FEEDER LINES

The electrical collection system comprises collector and feeder lines. In accordance with the Permittee's site permit application, collector and feeder lines shall be buried. If feeder lines are located within public rights-of-way, the Permittee shall obtain approval from the governmental unit responsible for the affected right-of-way.

Collector and feeder line locations shall be located in such a manner as to minimize interference with agricultural operations including, but not limited to, existing drainage patterns, drain tile, future tiling plans, and ditches. The Permittee shall submit the engineering drawings of all collector and feeder lines in the site plan pursuant to Section 5.1.

The Permittee must fulfill, comply with, and satisfy all Institute of Electrical and Electronics Engineers, Inc. (IEEE) standards applicable to this Project including, but not limited to, IEEE 776 [Recommended Practice for Inductive Coordination of Electric Supply and Communication Lines], IEEE 519 [Harmonic Specifications], IEEE 367 [Recommended Practice for Determining the Electric Power Station Ground Potential Rise and Induced Voltage from a Power Fault], and IEEE 820 [Standard Telephone Loop Performance Characteristics] provided the telephone service provider(s) have complied with any obligations imposed on it pursuant to these standards. Upon request by the Commission, the Permittee shall report to the Commission on compliance with these standards.

SECTION 5
ADMINISTRATIVE COMPLIANCE PROCEDURES

The following administrative compliance procedures shall be executed in accordance with the Permit Compliance Filings at Attachments 3 and 4.

5.1 SITE PLAN

At least ten (10) working days prior to the pre-construction meeting, the Permittee shall submit to the Commission:

(a) a site plan for all turbines, roads, electrical equipment, collector and feeder lines, and other associated facilities to be constructed;

(b) engineering drawings for site preparation, construction of the facilities; and

(c) a plan for restoration of the site due to construction.

Construction is defined under Minnesota Statutes section 216E.01. The Permittee may submit a site plan and engineering drawings for only a portion of the Project if the Permittee intends to commence construction on certain parts of the Project before completing the site plan and engineering drawings for other parts of the Project. The Permittee shall document, through GIS mapping, compliance with the setbacks and site layout restrictions required by this permit, including compliance with the noise standards pursuant to Minnesota Rules chapter 7030. In the

event that previously unidentified environmental conditions are discovered during construction that by law or pursuant to conditions outlined in this permit would preclude the use of that site as a turbine site, the Permittee shall have the right to move or relocate turbine site. The Permittee shall notify the Commission of any turbines that are to be relocated before the turbine is constructed on the new site and demonstrate compliance with the setbacks and site layout restrictions required by this permit.

5.2 NOTICE TO LOCAL RESIDENTS

Within ten (10) working days of approval of this permit, the Permittee shall send a printed copy of the permit to the office of the auditor of each county in which the site is located and to the clerk of each city and township within the site boundaries. If applicable, the Permittee shall, within ten (10) working days of permit approval, send a printed copy of this permit to each regional development commission, local fire district, soil and water conservation district, watershed district, and watershed management district office with jurisdiction in the county where the site is located. Within thirty (30) days of approval of this permit, the Permittee shall send a printed copy of the permit to each landowner within the Project boundary. In no case shall the landowner receive this site permit and complaint procedure, developed pursuant to Section 5.8, less than five (5) days prior to the start of construction on their property.

5.3 NOTICE OF PERMIT CONDITIONS

Prior to the start of construction, the Permittee shall inform all employees, contractors, and other persons involved in the construction and ongoing operation of the Project of the terms and conditions of this permit.

5.4 FIELD REPRESENTATIVE

At least ten (10) working days prior to the pre-construction meeting and continuously throughout construction, including site restoration, the Permittee shall designate a field representative responsible for overseeing compliance with the conditions of this permit during the construction phase of this Project. This person (or a designee) shall be accessible by telephone during normal working hours. This person's address, phone number, and emergency phone number shall be provided to the Commission, which may make the number available to local residents and officials and other interested persons. The Permittee may change the field representative by notification to the Commission.

5.5 SITE MANAGER

The Permittee shall designate a site manager responsible for overseeing compliance with the conditions of this permit during the commercial operation and decommissioning phases of this Project. The Permittee shall provide the Commission with the name, address, and phone number, and emergency phone number of the site manager prior to placing any turbine into commercial operation. This information shall be maintained current by informing the Commission of any changes, as they become effective.

5.6 PRE-CONSTRUCTION MEETING

Prior to the start of any construction, the Permittee shall conduct a pre-construction meeting with the Field Representative and the State Permit Manager designated by the Commission to coordinate field monitoring of construction activities.

5.7 PRE-OPERATION COMPLIANCE MEETING

At least ten (10) working days prior to commercial operation, the Permittee shall conduct a pre-operation compliance meeting with the Site Manager and the State Permit Manager designated by the Commission to coordinate field monitoring of operation activities.

5.8 COMPLAINTS

At least ten (10) working days prior to the pre-construction meeting, the Permittee shall submit to the Commission the company's procedures to be used to receive and respond to complaints. The Permittee shall report to the Commission all complaints received concerning any part of the Project in accordance with the procedures provided in Attachments 2 and 3 of this permit.

SECTION 6
SURVEYS AND REPORTING

6.1 BIOLOGICAL AND NATURAL RESOURCE INVENTORIES

The Permittee, in consultation with the Commission and DNR, shall design and conduct pre-construction desktop and field inventories to identify potentially impacted native prairies, wetlands, and any other biologically sensitive areas within the site and assess the presence of state threatened, endangered, or species of special concern or federally listed species. The results of any surveys shall be submitted to the Commission and DNR at least thirty (30) days prior to the pre-construction meeting to confirm compliance of conditions in this permit.

The Permittee shall provide to the Commission any biological surveys or studies conducted on this Project, including those not required under this permit. Section 11.7 may apply to data provided pursuant to this section.

6.2 SHADOW FLICKER

At least ten (10) working 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. Information shall include the results of modeling used, assumptions made, and the anticipated duration of shadow flicker for each residence. The Permittee shall provide documentation on its efforts to minimize shadow flicker impacts.

6.3 ARCHAEOLOGICAL RESOURCES

The Permittee shall work with the State Historic Preservation Office (SHPO) and the State Archaeologist. The Permittee shall carry out a Phase 1 or 1A Archaeology survey for all

proposed turbine locations, access roads, junction boxes, and other areas of Project construction impact to determine whether additional archaeological work is necessary for any part of the proposed Project. The Permittee shall contract with a qualified archaeologist to complete such surveys, and shall submit the results to the Commission, the SHPO, and the State Archaeologist at least ten (10) working days prior to the pre-construction meeting.

The SHPO and the State Archaeologist will make recommendations for the treatment of any significant archaeological sites which are identified. Any issues in the implementation of these recommendations will be resolved by the Commission in consultation with SHPO and the State Archaeologist. The Permittee shall not excavate at such locations until so authorized by the Commission in consultation with the SHPO and the State Archaeologist.

If human remains are encountered during construction, the Permittee shall immediately halt construction at that location and promptly notify local law enforcement authorities and the State Archaeologist. Construction at the human remains location shall not proceed until authorized by local law enforcement authorities or the State Archaeologist.

If any federal funding, permit, or license is involved or required, the Permittee shall notify the SHPO as soon as possible in the planning process to coordinate section 106 (36 C.F.R. part 800) review.

Prior to construction, construction workers shall be trained about the need to avoid cultural properties, how to identify cultural properties, and procedures to follow if undocumented cultural properties, including gravesites, are found during construction. If any archaeological sites are found during construction, the Permittee shall immediately stop work at the site and shall mark and preserve the site and notify the Commission, SHPO, and State Archaeologist about the discovery. The Commission and SHPO shall have three working days from the time the agency is notified to conduct an inspection of the site if either agency shall choose to do so. On the fourth day after notification, the Permittee may begin work on the site unless the SHPO has directed that work shall cease. In such event, work shall not continue until the SHPO determines that construction can proceed.

6.4 INTERFERENCE

At least ten (10) working days prior to the pre-construction meeting, the Permittee shall submit to the Commission the results of an assessment of television and radio signal reception, microwave signal patterns, and telecommunications in the Project area. The assessment shall be designed to provide data that can be used in the future to determine whether the turbines and associated facilities are the cause of disruption or interference of television or radio reception, microwave patterns, or telecommunications in the event residents should complain about such disruption or interference after the turbines are placed in operation. The Permittee shall be responsible for alleviating any disruption or interference of these services caused by the turbines or any associated facilities.

The Permittee shall not operate the Project so as to cause microwave, television, radio, telecommunications, or navigation interference in violation of Federal Communications

Commission regulations or other law. In the event the Project or its operations cause such interference, the Permittee shall take timely measures necessary to correct the problem.

6.5 WAKE LOSS STUDIES

At least ten (10) working days prior to the pre-construction meeting, the Permittee shall provide to the Commission the pre-construction micro-siting analysis leading to the final tower locations and an estimate of total Project wake losses. The Permittee shall provide to the Commission any operational wake loss studies conducted on this Project.

6.6 NOISE

The Permittee shall submit a proposal to the Commission at least ten (10) working days prior to the pre-operation compliance meeting for the conduct of a post-construction noise study. Upon the approval of the Commission, the Permittee shall carry out the study. The study shall be designed to determine the operating LWECS noise levels at different frequencies and at various distances from the turbines at various wind directions and speeds. The Permittee shall submit the study within eighteen (18) months after commercial operation.

6.7 AVIAN AND BAT PROTECTION PLAN

The Permittee shall, in consultation with the Commission and DNR, prepare an Avian and Bat Protection Plan and submit it to the Commission at least ten (10) working days prior to the pre-construction meeting. The plan shall address steps to be taken to identify and mitigate impacts to avian and bat species during the construction phase and the operation phase of the Project. The plan shall also include formal and informal monitoring, training, wildlife handling, documentation (e.g., photographs), and reporting protocols for each phase of the Project.

The Permittee shall submit quarterly avian and bat reports to the Commission. Quarterly reports are due by the 15th of each January, April, July, and October commencing the day following commercial operation and terminating upon the expiration of this permit. Each report shall identify any dead or injured avian and bat species, location of find by turbine number, and date of find for the reporting period in accordance with the reporting protocols. If a dead or injured avian or bat species is found, the report shall describe the potential cause of the occurrence and the steps taken to avoid future occurrences.

The Permittee shall notify the Commission, United States Fish and Wildlife Service (USFWS), and DNR within twenty-four (24) hours of the discovery of any of the following within the vicinity of the rotor swept area:

(a) five or more dead or injured non-protected avian or bat species within a reporting period;

(b) one or more dead or injured migratory avian or bat species;

(c) one or more dead or injured state threatened, endangered, or species of special concern; or

(d) one or more dead or injured federally listed species.

6.8 PROJECT ENERGY PRODUCTION

The Permittee shall submit a report no later than February 1st following each complete year of Project operation. The report shall include:

(a) The rated nameplate capacity of the permitted Project;

(b) The total monthly energy generated by the Project in MW hours;

(c) The monthly capacity factor of the Project;

(d) Yearly energy production and capacity factor for the Project;

(e) The operational status of the Project and any major outages, major repairs, or turbine performance improvements occurring in the previous year; and

(f) Any other information reasonably requested by the Commission.

This information shall be considered public and must be submitted electronically.

6.9 WIND RESOURCE USE

The Permittee shall, upon the request of the Commission, report to the Commission on the monthly energy production of the Project and the average monthly wind speed collected at one permanent meteorological tower selected by the Commission during the preceding year or partial year of operation. Section 11.7 shall apply to data provided pursuant to this section.

6.10 EXTRAORDINARY EVENTS

Within twenty-four (24) hours of an occurrence, the Permittee shall notify the Commission of any extraordinary event. Extraordinary events include but shall not be limited to: fires, tower collapse, thrown blade, collector or feeder line failure, and injured LWECS worker or private person. The Permittee shall, within thirty (30) days of the occurrence, submit a report to the Commission describing the cause of the occurrence and the steps taken to avoid future occurrences.

SECTION 7
CONSTRUCTION AND OPERATION PRACTICES

7.1 SITE CLEARANCE

The Permittee shall disturb or clear the site only to the extent necessary to assure suitable access for construction, safe operation, and maintenance of the Project.

7.2 TOPSOIL PROTECTION

The Permittee shall implement measures to protect and segregate topsoil from subsoil in cultivated lands unless otherwise negotiated with the affected landowner(s).

7.3 SOIL COMPACTION

The Permittee shall implement measures to minimize soil compaction of all lands during all phases of the Project's life and shall confine compaction to as small an area as practicable.

7.4 LIVESTOCK PROTECTION

The Permittee shall take precautions to protect livestock during all phases of the Project's life.

7.5 FENCES

The Permittee shall promptly replace or repair all fences and gates removed or damaged during all phases of the Project's life unless otherwise negotiated with the affected landowner(s). When the Permittee installs a gate where electric fences are present, the Permittee shall provide for continuity in the electric fence circuit.

7.6 DRAINAGE TILES

The Permittee shall take into account the location of drainage tiles during Project layout and construction. The Permittee shall promptly repair or replace all drainage tiles broken or damaged during all phases of the Project's life unless otherwise negotiated with the affected landowner(s).

7.7 EQUIPMENT STORAGE

The Permittee shall not locate temporary equipment staging areas on lands under its control unless negotiated with affected landowner(s). Temporary staging areas shall not be located in wetlands or native prairie as defined in Sections 4.6 and 4.7.

7.8 ROADS

7.8.1 PUBLIC ROADS

At least ten (10) working days prior to the pre-construction meeting, the Permittee shall identify all state, county, or township roads that will be used for the Project and shall notify the Commission and the state, county, or township governing body having jurisdiction over the roads to determine if the governmental body needs to inspect the roads prior to use of these roads. Where practical, existing roadways shall be used for all activities associated with the Project. Where practical, all-weather roads shall be used to deliver cement, turbines, towers, assembled nacelles, and all other heavy components to and from the turbine sites.

The Permittee shall, prior to the use of such roads, make satisfactory arrangements with the appropriate state, county, or township governmental body having jurisdiction over roads to be used for construction of the Project for maintenance and repair of roads that will be subject to extra wear and tear due to transportation of equipment and Project components. Upon request of the Commission, the Permittee shall notify the Commission of such arrangements.

7.8.2 TURBINE ACCESS ROADS

The Permittee shall construct the least number of turbine access roads it can. Access roads shall be low profile roads so that farming equipment can cross them and shall be covered with Class five gravel or similar material. Access roads shall not be constructed across streams and drainage ways without required permits and approvals from the DNR, USFWS, and/or USACE. When access roads are constructed across streams and drainage ways, the access roads shall be designed in a manner so runoff from the upper portions of the watershed can readily flow to the lower portion of the watershed. Access roads shall also be constructed in accordance with all necessary township, county, or state road requirements and permits.

7.8.3 PRIVATE ROADS

The Permittee shall promptly repair private roads or lanes damaged when moving equipment or when obtaining access to the site, unless otherwise negotiated with the affected landowner(s).

7.9 CLEANUP

The Permittee shall remove all waste and scrap that is the product of construction, operation, restoration, and maintenance from the site and properly dispose of it upon completion of each task. Personal litter, bottles, and paper deposited by site personnel shall be removed on a daily basis.

7.10 TREE REMOVAL

The Permittee shall minimize the removal of trees and the Permittee shall not remove groves of trees or shelter belts without notification to the Commission and the approval of the affected landowner(s).

7.11 SOIL EROSION AND SEDIMENT CONTROL

The Permittee shall develop a Soil Erosion and Sediment Control Plan and submit the Plan to the Commission at least ten (10) working days prior to the pre-construction meeting. This Plan may be the same as the Storm Water Pollution Prevention Plan (SWPPP) submitted to the PCA as part of the National Pollutant Discharge Elimination System (NPDES) permit application.

The Soil Erosion and Sediment Control Plan shall address what types of erosion control measures will be implemented during each Project phase and shall at a minimum identify: plans for grading, construction, and drainage of roads and turbine pads; necessary soil information; detailed design features to maintain downstream water quality; a comprehensive re-vegetation plan to maintain and ensure adequate erosion control and slope stability and to restore the site

after temporary Project activities; and measures to minimize the area of surface disturbance. Other practices shall include containing excavated material, protecting exposed soil, and stabilizing restored material and removal of silt fences or barriers when the area is stabilized. The plan shall identify methods for disposal or storage of excavated material. Erosion and sedimentation control measures shall be implemented prior to construction and maintained throughout the Project's life.

The Permittee shall develop an invasive species prevention plan to prevent the introduction of invasive species on lands disturbed by project construction activities. This requirement may be included as an element of the Soil Erosion and Sediment Control Plan.

7.12 RESTORATION

The Permittee shall, as soon as practical following construction of each turbine, considering the weather and preferences of the affected landowner(s), restore the area affected by any Project activities to the condition that existed immediately before construction began, to the extent possible. The time period may be no longer than twelve (12) months after completion of construction of the turbine, unless otherwise negotiated with the affected landowner(s). Restoration shall be compatible with the safe operation, maintenance, and inspection of the Project.

7.13 HAZARDOUS WASTE

The Permittee shall be responsible for compliance with all laws applicable to the generation, storage, transportation, clean-up, and disposal of hazardous wastes generated during any phase of the Project's life.

7.14 APPLICATION OF HERBICIDES

The Permittee shall restrict herbicide use to those herbicides and methods of application approved by the Minnesota Department of Agriculture and the U.S. Environmental Protection Agency. Selective foliage or basal application shall be used when practicable. The Permittee shall contact the landowner or his designee to obtain approval for the use of herbicide prior to any application on their property. The landowner may request that there be no application of herbicides on any part of the site within the landowner's property. All herbicides shall be applied in a safe and cautious manner so as to not damage property, including crops, orchards, tree farms, or gardens. The Permittee shall also, at least ten (10) working days prior to the application, notify beekeepers with an active apiary within one mile of the proposed application site of the day the company intends to apply herbicide so that precautionary measures may be taken by the beekeeper.

7.15 PUBLIC SAFETY

The Permittee shall provide educational materials to landowners within the site boundary and, upon request, to interested persons about the Project and any restrictions or dangers associated with the Project. The Permittee shall also provide any necessary safety measures, such as warning signs and gates for traffic control or to restrict public access. The Permittee shall submit

the location of all underground facilities, as defined in Minnesota Statutes section 216D.01, subdivision 11, to Gopher State One Call.

7.16 EMERGENCY RESPONSE

The Permittee shall prepare an emergency response plan (fire protection and medical emergency plan) in consultation with the emergency responders having jurisdiction over the area prior to Project construction. The Permittee shall submit a copy of the plan to the Commission at least ten (10) working days prior to the pre-construction meeting and a revised plan, if any, at least ten (10) working days prior to the pre-operation compliance meeting. The Permittee shall also register the Project with the local governments' emergency 911 services.

7.17 TOWER IDENTIFICATION

All turbine towers shall be marked with a visible identification number.

7.18 FEDERAL AVIATION ADMINISTRATION LIGHTING

Towers shall be marked as required by the FAA. There shall be no lights on the towers other than what is required by the FAA. This restriction shall not apply to infrared heating devices used to protect the wind monitoring equipment.

SECTION 8
FINAL CONSTRUCTION

8.1 AS-BUILT PLANS AND SPECIFICATIONS

Within sixty (60) days after completion of construction, the Permittee shall submit to the Commission a copy of the as-built plans and specifications. The Permittee must also submit this data in a GIS compatible format so that the Commission can place it into the Minnesota Geospatial Information Office's geographic data clearinghouse located in the Department of Administration.

8.2 FINAL BOUNDARIES

After completion of construction, the Commission shall determine the need to adjust the final boundaries of the site required for this Project. If done, this permit may be modified, after notice and opportunity for public hearing, to represent the actual site required by the Permittee to operate the Project authorized by this permit.

8.3 EXPANSION OF SITE BOUNDARIES

No expansion of the site boundaries described in this permit shall be authorized without the approval of the Commission. The Permittee may submit to the Commission a request for a change in the boundaries of the site for the Project. The Commission will respond to the requested change in accordance with applicable statutes and rules.

SECTION 9
DECOMMISSIONING, RESTORATION, AND ABANDONMENT

9.1 DECOMMISSIONING PLAN

At least ten (10) working days prior to the pre-operation compliance meeting, the Permittee shall submit to the Commission a Decommissioning Plan documenting the manner in which the Permittee anticipates decommissioning the Project in accordance with the requirements of Minnesota Rules 7854.0500, subpart 13. The Permittee shall ensure that it carries out its obligations to provide for the resources necessary to fulfill its requirements to properly decommission the Project at the appropriate time. The Commission may at any time request the Permittee to file a report with the Commission describing how the Permittee is fulfilling this obligation.

9.2 SITE RESTORATION

Upon expiration of this permit, or upon earlier termination of operation of the Project, or any turbine within the Project, the Permittee shall have the obligation to dismantle and remove from the site all towers, turbine generators, transformers, overhead and underground cables and lines, foundations, buildings, and ancillary equipment to a depth of four feet. To the extent feasible, the Permittee shall restore and reclaim the site to its pre-project topography and topsoil quality. All access roads shall be removed unless written approval is given by the affected landowner(s) requesting that one or more roads, or portions thereof, be retained. Any agreement for removal to a lesser depth or no removal shall be recorded with the county and shall show the locations of all such foundations. All such agreements between the Permittee and the affected landowner(s) shall be submitted to the Commission prior to completion of restoration activities. The site shall be restored in accordance with the requirements of this condition within eighteen (18) months after expiration.

9.3 ABANDONED TURBINES

The Permittee shall advise the Commission of any turbines that are abandoned prior to termination of operation of the Project. A Project, or any turbine within the Project, shall be considered abandoned after one (1) year without energy production and the land restored pursuant to Section 9.2 unless a plan is developed and submitted to the Commission outlining the steps and schedule for returning the Project, or any turbine within the Project, to service.

SECTION 10
AUTHORITY TO CONSTRUCT LWECS

10.1 WIND RIGHTS

At least ten (10) working days prior to the pre-construction meeting, the Permittee shall demonstrate that it has obtained the wind rights and any other rights necessary to construct and operate the Project within the boundaries of the LWECS authorized by this permit.

Nothing in this permit shall be construed to preclude any other person from seeking a permit to construct a WECS in any area within the boundaries of the Project covered by this permit if the Permittee does not hold exclusive wind rights for such areas.

10.2 POWER PURCHASE AGREEMENT

In the event the Permittee does not have a power purchase agreement or some other enforceable mechanism for sale of the electricity to be generated by the Project at the time this permit is issued, the Permittee shall provide notice to the Commission when it obtains a commitment for purchase of the power. This permit does not authorize construction of the Project until the Permittee has obtained a power purchase agreement or some other enforceable mechanism for sale of the electricity to be generated by the Project. In the event the Permittee does not obtain a power purchase agreement or some other enforceable mechanism for sale of the electricity to be generated by the Project within two years of the issuance of this permit, the Permittee must advise the Commission of the reason for not having such commitment. In such event, the Commission shall determine whether this permit should be amended or revoked. No amendment or revocation of this permit may be undertaken except in accordance with applicable statutes and rules, including Minnesota Rule 7854.1300.

10.3 FAILURE TO COMMENCE CONSTRUCTION

If the Permittee has not completed the pre-construction surveys required under this permit and commenced construction of the Project within two years of the issuance of this permit, the Permittee must advise the Commission of the reason construction has not commenced. In such event, the Commission shall make a determination as to whether this permit should be amended or revoked. No revocation of this permit may be undertaken except in accordance with applicable statutes and rules, including Minnesota Rule 7854.1300.

10.4 PREEMPTION OF OTHER LAWS

Pursuant to Minnesota Statutes section 216F.07, this site permit shall be the only site approval required for the location of this Project, and this permit shall supersede and preempt all zoning, building, and land use rules, regulations, and ordinances adopted by regional, county, local, and special purpose governments. Nothing in this permit shall release the Permittee from any obligation imposed by law that is not superseded or preempted by law.

10.5 OTHER PERMITS

The Permittee shall be responsible for acquiring any other federal, state, or local permits or authorizations that may be required to construct and operate a LWECS within the authorized site. The Permittee shall submit a copy of such permits and authorizations to the Commission upon request.

10.5.1 COMPLIANCE WITH FEDERAL AND STATE AGENCY PERMITS

The Permittee shall comply with all terms and conditions of permits or licenses issued by Federal, State, or Tribal authorities including but not limited to the requirements of the PCA

(Section 401 Water Quality Certification, National Pollutant Discharge Elimination System (NPDES)/State Disposal System (SDS) stormwater permit for construction activity, and other site specific discharge approvals), DNR (License to Cross Public Lands and Water, Public Water Works Permit, and state protected species consultation), SHPO (Section 106 Historic Consultation Act), FAA determinations, and DOT (Utility Access Permit, Highway Access Permit, Oversize and Overweight Permit, and Aeronautics Airspace Obstruction Permit).

10.5.2 COMPLIANCE WITH COUNTY, CITY, OR MUNICIPAL PERMITS

The Permittee shall comply with all terms and conditions of permits or licenses issued by the counties, cities, and municipalities affected by the Project that do not conflict with or are not pre-empted by federal or state permits and regulations.

SECTION 11
COMMISSION POST-ISSUANCE AUTHORITIES

11.1 PERIODIC REVIEW

The Commission shall initiate a review of this permit and the applicable conditions at least once every five (5) years. The purpose of the periodic review is to allow the Commission, the Permittee, and other interested persons an opportunity to consider modifications in the conditions of this permit. No modification may be made except in accordance with applicable statutes and rules.

11.2 MODIFICATION OF CONDITIONS

After notice and opportunity for hearing, this permit may be modified or amended for cause, including but not limited to the following:

(a) Violation of any condition in this permit;

(b) Endangerment of human health or the environment by operation of the Project; or

(c) Existence of other grounds established by rule.

11.3 REVOCATION OR SUSPENSION OF PERMIT

The Commission may take action to suspend or revoke this permit upon the grounds that:

(a) A false statement was knowingly made in the application or in accompanying statements or studies required of the Permittee, and a true statement would have warranted a change in the Commission's findings;

(b) There has been a failure to comply with material conditions of this permit, or there has been a failure to maintain health and safety standards; or

(c) There has been a material violation of a provision of an applicable statute, rule, or an order of the Commission.

In the event the Commission determines that it is appropriate to consider revocation or suspension of this permit, the Commission shall proceed in accordance with the requirements of Minnesota Rule 7854.1300 to determine the appropriate action. Upon a finding of any of the above, the Commission may require the Permittee to undertake corrective measures in lieu of having this permit suspended or revoked.

11.4 MORE STRINGENT RULES

The Commission's issuance of this site permit does not prevent the future adoption by the Commission of rules or orders more stringent than those now in existence and does not prevent the enforcement of these more stringent rules and orders against the Permittee.

11.5 TRANSFER OF PERMIT

The Permittee may not transfer this permit without the approval of the Commission. If the Permittee desires to transfer this permit, the holder shall advise the Commission in writing of such desire. The Permittee shall provide the Commission with such information about the transfer as the Commission requires to reach a decision. The Commission may impose additional conditions on any new Permittee as part of the approval of the transfer.

11.6 RIGHT OF ENTRY

Upon reasonable notice, presentation of credentials, and at all times in compliance with the Permittee's site safety standards, the Permittee shall allow representatives of the Commission to perform the following:

(a) To enter upon the facilities easement of the site property for the purpose of obtaining information, examining records, and conducting surveys or investigations;

(b) To bring such equipment upon the facilities easement of the property as is necessary to conduct such surveys and investigations;

(c) To sample and monitor upon the facilities easement of the property; and

(d) To examine and copy any documents pertaining to compliance with the conditions of this permit.

11.7 PROPRIETARY INFORMATION

Certain information required to be submitted to the Commission under this permit, including energy production and wake loss data, may constitute trade secret information or other type of proprietary information under the Data Practices Act or other law and is not to be made available by the Commission. The Permittee must satisfy requirements of applicable law to obtain the protection afforded by the law and Commission procedures.

SECTION 12
EXPIRATION DATE

This permit shall expire thirty (30) years after the date this permit was approved and adopted.

SECTION 13
SPECIAL CONDITIONS

Special conditions shall take precedence over any other permit conditions if there should be a conflict between the two.

13.1 APPLICATION OF COUNTY STANDARDS

The Permittee shall site all wind turbines and associated facilities consistent with the following standards adopted by ordinance by Freeborn County:

(a) Property Lines: Turbines shall have a setback of 1.0 times the total height of the turbine. The affected adjacent property owner may waive the setback.

(b) Residences: Turbines over 200 feet in height shall be no closer than 1,000 feet from the nearest residence.

(c) Municipality: Turbines over 200 feet in height shall be no closer than ½ mile of any municipality excluding Albert Lea. A waiver by resolution may reduce the setback to 1.1 times the tower height from the nearest residence within that municipality.

(d) Public Rights-of-Way: Turbines shall be at least 1.1 times the tower height from public roads, transmission lines, and communication towers;

(e) Drainage Tile/Ditches: Turbines shall be at least 30 feet from the center line of any buried public drain tile or 50 feet from the top edge of an open public ditch;

(f) Liability Insurance: Permittee shall maintain a current general liability policy covering bodily injury and property damage with a minimum coverage of $300,000; and

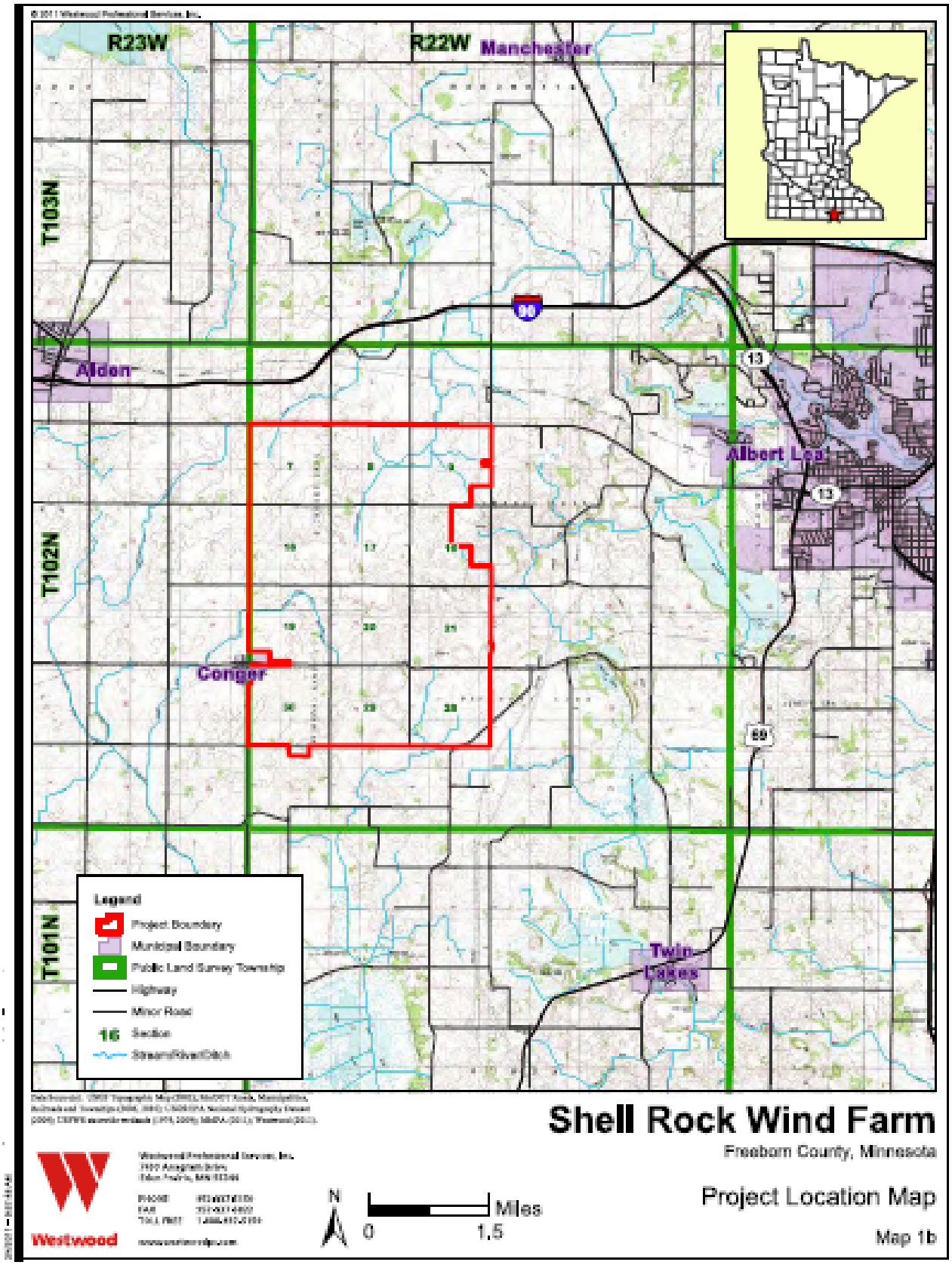
(g) Decommissioning Plan: At a minimum, the decommissioning plan shall include provisions for the removal of all structures, debris and cabling within 180 days after turbine abandonment. Soil and vegetation shall be restored within 270 days after turbine abandonment.

(h) Drainage Tile Clearance: Underground collector and feeder lines shall be located a minimum distance of 12 inches from drainage tile.

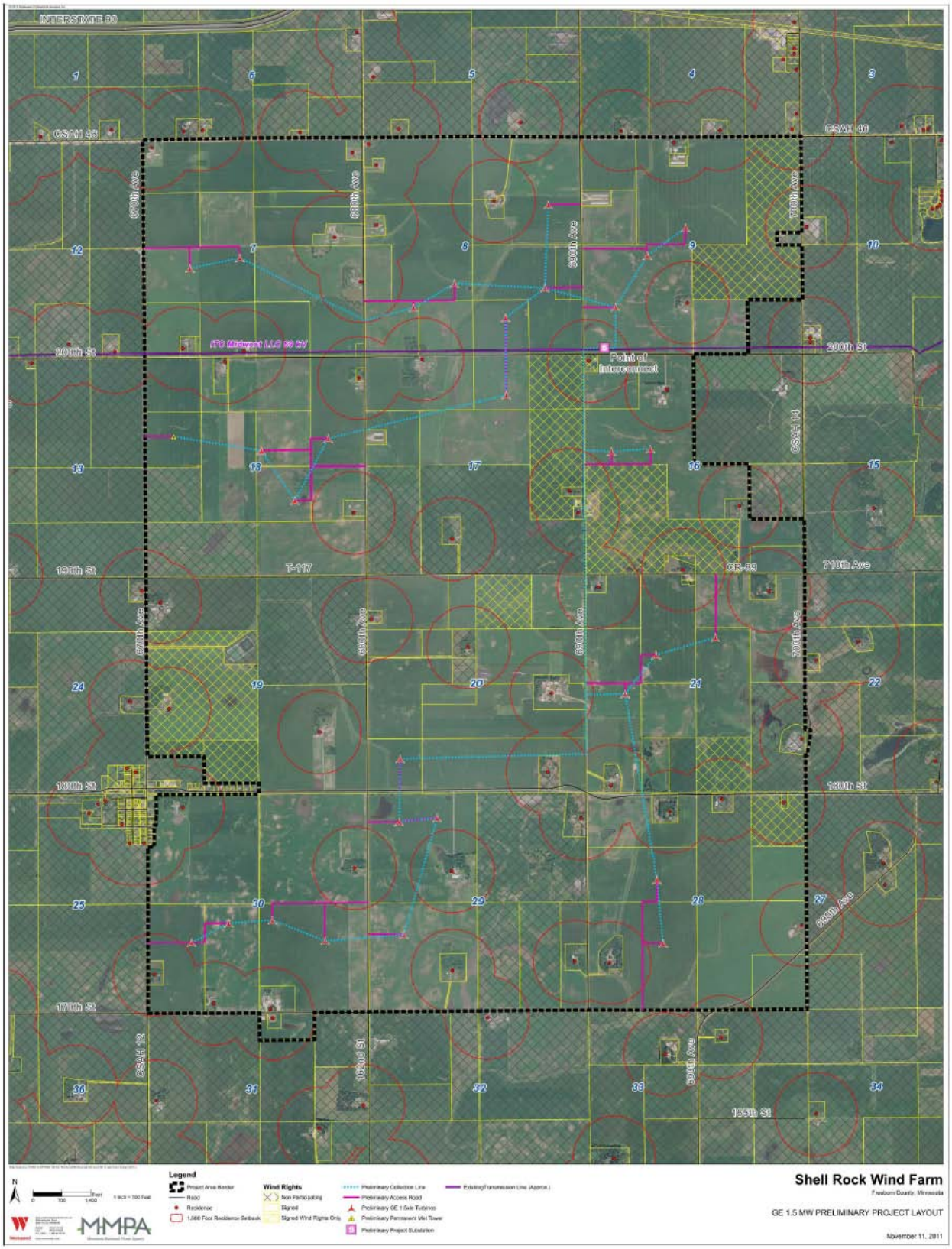
13.2 AVIAN AND BAT PROTECTION PLAN SPECIAL PROVISION

The Avian and Bat Protection Plan in Section 6.7 shall include survey plans and protocols to conduct post-construction avian and bat fatality surveys. The post-construction avian and bat fatality surveys shall be conducted for a minimum of one year. The results of the post-construction avian and bat surveys shall be submitted to the Commission. Based on those results, the Commission may modify conditions in this permit pursuant to Section 11.2.

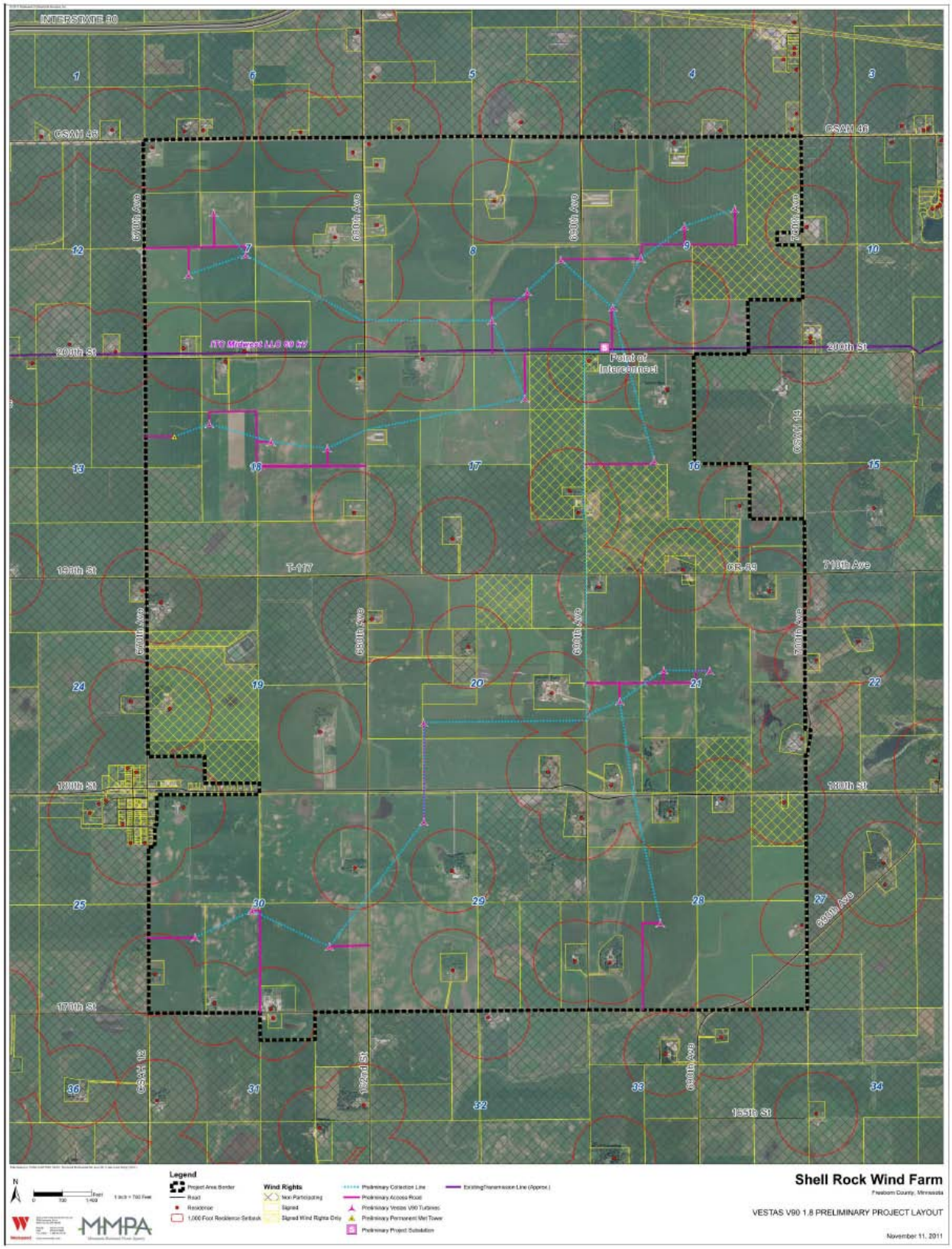
Attachment 1
Project Boundary Map



Attachment 1A
GE Turbine Layout



Attachment 1B
Vestas Turbine Layout



MINNESOTA PUBLIC UTILITIES COMMISSION COMPLAINT HANDLING PROCEDURES FOR LARGE WIND ENERGY CONVERSION SYSTEMS

A. Purpose:

To establish a uniform and timely method of reporting complaints received by the Permittee concerning Permit conditions for site preparation, construction, cleanup and restoration, operation, and resolution of such complaints.

B. Scope:

This document describes Complaint reporting procedures and frequency.

C. Applicability:

The procedures shall be used for all complaints received by the Permittee and all complaints received by the Commission under Minn. Rule 7829.1500 or 7829.1700 relevant to this Permit.

D. Definitions:

Complaint: A verbal or written statement presented to the Permittee by a person expressing dissatisfaction or concern regarding site preparation, cleanup or restoration, or other LWECS and associated facilities site permit conditions. Complaints do not include requests, inquiries, questions, or general comments.

Substantial Complaint: A written Complaint alleging a violation of a specific Site Permit condition that, if substantiated, could result in Permit modification or suspension pursuant to the applicable regulations.

Unresolved Complaint: A Complaint which, despite the good faith efforts of the permittee and a person(s), remains to both or one of the parties unresolved or unsatisfactorily resolved.

Person: An individual, partnership, joint venture, private or public corporation, association, firm, public service company, cooperative, political subdivision, municipal corporation, government agency, public utility district, or any other entity, public or private, however organized.

E. Complaint Documentation and Processing:

1. The Permittee shall document all Complaints by maintaining a record of all applicable information concerning the Complaint, including the following:

a. Name of complainant, address, phone number, and e-mail address.
b. Precise property description or parcel number.
c. Name of Permittee representative receiving Complaint and date of receipt.
d. Nature of Complaint and the applicable Site Permit conditions(s).
e. Activities undertaken to resolve the Complaint.
f. Final disposition of the Complaint.

2. The Permittee shall designate an individual to summarize Complaints to the Commission. This person's name, phone number and e-mail address shall accompany all complaint submittals.

3. A Person presenting the Complaint should to the extent possible, include the following information in their communications:

   a. Name, address, phone number, and e-mail address.
   b. Date
   c. Tract or parcel
   d. Whether the complaint relates to (1) a Site Permit matter, (2) a LWECS and associated facility issue, or (3) a compliance issue.

F. Reporting Requirements:

The Permittee shall report all complaints to the Commission according to the following schedule:

Immediate Reports: All substantial complaints shall be reported to the Commission the same day received, or on the following working day for complaints received after working hours. Such reports are to be directed to Wind Permit Compliance, 1-800-657-3794, or by e-mail to: DOC.energypermitcompliance@state.mn.us. Voice messages are acceptable.

Monthly Reports: By the 15th of each month, a summary of all complaints, including substantial complaints received or resolved during the preceding month, shall be eFiled to Dr. Burl W. Haar, Executive Secretary, Public Utilities Commission, using the Minnesota Department of Commerce eDocket system (see eFiling instructions attached to this permit).

If no Complaints were received during the preceding month, the permittee shall submit (eFile) a summary indicating that no complaints were received.

G. Complaints Received by the Commission or Department of Commerce:

Complaints received directly by the Commission from aggrieved persons regarding site preparation, construction, cleanup, restoration, operation and maintenance shall be promptly sent to the Permittee.

H. Commission Process for Unresolved Complaints:

Initial Screening: Commission staff shall perform an initial evaluation of unresolved Complaints submitted to the Commission. Complaints raising substantial LWECS Site Permit issues shall be processed and resolved by the Commission. Staff shall notify Permittee and appropriate person(s) if it determines that the Complaint is a Substantial Complaint. With respect to such Complaints, each party shall submit a written summary of its position to the Commission no later than ten (10) days after receipt of the Staff notification. Staff shall present Briefing Papers to the Commission, which shall resolve the Complaint within twenty days of submission of the Briefing Papers.

I. Permittee Contacts for Complaints:

Mailing Address: Complaints filed by mail shall be sent to the address below:

Shell Rock Wind Farm
Avant Energy, Inc.
200 South Sixth Street, Suite 300
Minneapolis, MN 55402

Tel: 612-349-6868

Email: bruce.freeman@avantenergy.com

ATTACHMENT 3

MINNESOTA PUBLIC UTILITIES COMMISSION
COMPLIANCE FILING PROCEDURE
FOR PERMITTED ENERGY FACILITIES

1. Purpose

To establish a uniform and timely method of submitting information required by the Commission energy facility permits.

2. Scope and Applicability

This procedure encompasses all compliance filings required by permit.

3. Definitions

Compliance Filing – A filing of required information to the Commission pursuant to a site or route permit.

4. Responsibilities

A) The permittee shall eFile all compliance filings with Dr. Burl Haar, Executive Secretary, Public Utilities Commission, through the Department of Commerce (DOC) eDocket system. The system is located on the DOC website: https://www.edockets.state.mn.us/EFiling/home.jsp

General instructions are provided on the website. Permittees must register on the website to eFile documents.

B) All filings must have a cover sheet that includes:
1) Date
2) Name of submitter / permittee
3) Type of Permit (Site or Route)
4) Project Location
5) Project Docket Number
6) Permit Section Under Which the Filing is Made
7) Short Description of the Filing

C) Filings that are graphic intensive (e.g., maps, plan and profile) must, in addition to being eFiled, be submitted as paper copies and on CD. Copies and CDs should be sent to: 1) Dr. Burl W. Haar, Executive Secretary, Minnesota Public Utilities Commission, 121 7th Place East, Suite 350, St. Paul, MN, 55101-2147, and 2) Department of Commerce, Energy Facility Permitting, 85 7th Place East, Suite 500, St. Paul, MN, 55101-2198. Additionally, the Commission may request a paper copy of any eFiled document.

SUMMARY OF PERMIT COMPLIANCE FILINGS[1]

PERMITTEE: Shell Rock Wind Farm, LLC
PERMIT TYPE: LWECS Site Permit
PROJECT LOCATION: Freeborn County
COMMISSION DOCKET IP-6858/WS-11-195

PRE-CONSTRUCTION MEETING

Permit Section	Description	Due Date	Notes	eDocket Doc. ID	Date Filed
4.7	Native Prairie Protection Plan	10 working days prior to pre-construction meeting, if required.	Develop in consultation with Commission and DNR.		
5.1	Site Plan	10 working days prior to pre-construction meeting.			
5.4	Field Representative	10 working days prior to pre-construction meeting.			
5.8	Complaint Reporting Procedures	10 working days prior to pre-construction meeting.			
6.1	Biological & Natural Resource Inventories	30 days prior to pre-construction Meeting.	Results may trigger need for a Native Prairie Protection Plan.		
6.2	Shadow Flicker Analysis	10 working days prior to pre-construction meeting.			
6.3	Archaeological Resources	10 working days prior to pre-construction meeting and as recommended by the State Historic Preservation Office.			
6.4	Interference	10 working days prior to pre-construction Meeting.			
6.5	Wake Loss	10 working days prior to pre-construction meeting.			

[1] This compilation of permit compliance filings is provided for the convenience of the permittee and the Commission. However, it is not a substitute for the permit; the language of the permit controls.

PRE-CONSTRUCTION MEETING

Permit Section	Description	Due Date	Notes	eDocket Doc. ID	Date Filed
6.7	Avian and Bat Protection Plan	10 days prior to pre-construction meeting.	Develop in consultation with Commission and DNR.		
7.8	Road Identification	10 working days prior to pre-construction meeting.			
7.11	Soil Erosion & Sediment Control Plan	10 working days prior to pre-construction.	May be the same as NPDES SWPPP.		
7.16	Emergency Response	10 working days prior to pre-construction meeting. Must register in 911 Program.			
10.1	Wind Rights	10 working days prior to pre-construction meeting.			

PRE-OPERATION COMPLIANCE MEETING

Permit Section	Description	Due Date	Notes	eDocket Doc. ID	Date Filed
5.7	Pre-operation compliance meeting	10 working days prior to commercial operation.			
6.6	Noise Study Protocol	10 working days prior to pre-operation meeting.			
9.1 & 9.3	Decommiss-ioning Plan	10 working days prior to commercial operation.			

OTHER REQUIREMENTS

Permit Section	Description	Due Date	Notes	eDocket Doc. ID	Date Filed
5.2	Notice to Landowners & Government Units	Within 30 working days of permit issuance.			
5.5	Site Manager	10 working days prior to prior to commercial operation.	Update contact information as necessary.		
5.8	Complaints	Complaint submittals on the 15th of each month or within 24 hours.	Must eFile report even if no complaints.		
6.6	Noise Study Results	Within 18 months of Commercial Operation.			
6.7	Avian and Bat Reporting Requirements	Quarterly reports due and within 24 hours of discovery of certain species.			
6.8	Project Energy Production	Due 2/1 each year.			
6.9	Wind Resource Use	Upon request of the Commission.			
6.10	Extraordinary Events	Within 24 hours and report on occurrence of event within 30 days.			
8.1	As Builts	Within 60 days of completion of construction.			
10.2	PPA or Enforceable Mechanism	Within 2 years of permit issuance.	If no PPA or other enforceable mechanism at time of permit issuance.		
10.3	Failure to Start Construction	Within 2 years of permit issuance.			