

BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

LeRoy Koppendrayer
David Boyd
Marshall Johnson
Thomas Pugh
Phyllis A. Reha

Chair
Commissioner
Commissioner
Commissioner
Commissioner

**In the Matter of a Large Wind Energy
Conversion System Site Permit
Application by Minnesota Power for the
up to 25 MW Taconite Ridge I Wind
Energy Center in St. Louis County**

ISSUE DATE: September 11, 2007

DOCKET No. E-015/WS-07-676

**FINDINGS OF FACT, CONCLUSIONS
AND ORDER**

The above-entitled matter came before the Minnesota Public Utilities Commission (PUC), pursuant to an application by Minnesota Power for a site permit to construct, operate, maintain and manage the Taconite Ridge I Wind Energy Center, a 25-Megawatt (MW) nameplate capacity Large Wind Energy Conversion System (LWECS) and associated facilities in the city of Mountain Iron in St. Louis County, Minnesota. The Site permit is to be issued to Minnesota Power.

All of the proposed wind turbines, foundations, transformers, feeder lines and collection lines will be located in St. Louis County, Minnesota. Other associated facilities will include pad mounted step-up transformers for each wind turbine, access roads, a 34.5 kV electrical collection and feeder system, an operations and maintenance building and a permanent meteorological tower. The Project will connect to Minnesota Power's existing Minntac Substation. Minnesota Power will use the entire output of the Project to serve their load.

STATEMENT OF ISSUE

Should Minnesota Power be granted a site permit under Minnesota Statutes section 216F.04 to construct a 25-megawatt Large Wind Energy Conversion System in St. Louis County, Minnesota?

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

FINDINGS OF FACT

Background and Procedure

1. On May 29, 2007, Minnesota Power filed a complete site permit application for the Taconite Ridge I Wind Energy Center, with the PUC for 25- megawatts of nameplate wind power generating capacity. (**Exhibit 1**)
2. Department of Commerce (DOC) staff determined that the May 29, 2007, application complied with the application requirements of Minnesota Rules, part 4401.0450. In a briefing paper to the PUC, dated June 6, 2007, DOC Energy Facility Permitting (EFP) staff recommended that the PUC accept the application. (**Exhibit 2**).
3. On June 19, 2007, the PUC issued an order accepting Minnesota Power's application for the Taconite Ridge I Wind Energy Center and associated facilities. The June 19, 2007, PUC Order also made a preliminary determination to issue a draft site permit for review and comment. (**Exhibit 3**).
4. DOC EFP staff prepared a notice for the public information meeting (July 11, 2007), to receive comments on the site permit application and the draft site permit. The notice also provided a deadline for submitting comments on the application and draft site permit. The notice was mailed to the Project mailing list on June 28, 2007. (**Exhibit 4**)
5. DOC EFP staff published notice of the July 11, 2007, public information meeting in Virginia, Minnesota, and the availability of the draft site permit, in the *EOB Monitor*, Volume 31, No. 14, July 2, 2007. (**Exhibit 5**). The published notice contained all of the information required by Minnesota Rules part 4401.0550 subp. 1. Notice also appeared on the PUC web site.
6. Published notice of the site permit application, DOC public information meeting and opportunity to comment on the draft site permit appeared in the *Mesabi Daily News* on June 26 and July 8, 2007. (**Exhibit 6**). The published notice provided: a) location and date of the public information meeting; b) description of the proposed Project; c) deadline for public comments on the application and draft site permit (August 1, 2007); d) description of the PUC site permit review process; and e) identification of the public advisor. The notice published meets the requirements of Minnesota Rules part 4401.0550 subp. 2.
7. Minnesota Power distributed the site permit application, draft site permit and notice of public information meeting to each landowner affected by the proposed Project and those persons required by Minnesota Rules Part 4401.0460 subp. 3 on June 27, 2006 (**Exhibit 7**).
8. The DOC EFP staff held a public information meeting on July 11, 2007, in Virginia, Minnesota, to receive comments on the site permit application and draft site permit. Twenty-two people signed in at the meeting. Representatives from Minnesota Power

were also present at the meeting. DOC EFP staff provided an overview of the permitting process and draft site permit and responded to questions about the permitting process. The Applicant provided an overview of the Project and responded to questions about the Project. There were questions about whether the proposed Project would allow Minnesota Power to reduce the use of coal, what effect the proposed Project would have on Minnesota Power's ratepayers, and the extent of future wind development in northeastern Minnesota. Two participants also provided comments on the aesthetic impacts of the proposed Project and wind turbines generally; one stated that the proposed Project to be a negative aesthetic impact and one person stated that the proposed Project would have negligible aesthetic impact on the surrounding area. No significant issues or concerns were raised about the permitting process or conditions in the draft site permit at the public meeting. The public comment period on the Project closed on August 1, 2007. Four comments were received by the close of the public comment period.

9. No requests for a Contested Case Hearing on the proposed Project were submitted to the PUC.

The Permittee

10. The Applicant (Minnesota Power) will own the Project including all equipment up to Minnesota Power's Minntac Substation.

Project Description

11. The proposed Project will use 10 Clipper 2.5-MW Liberty wind turbines for an installed nameplate capacity of 25 MW. The turbines will have a hub height of approximately 263 feet (80M). The turbine blades are approximately 153 feet long, resulting in a rotor diameter of approximately 315 feet. The rotor consists of three blades mounted to a rotor hub. The hub is attached to the nacelle, which houses the gearbox, generator, brake, cooling system, and other electrical and mechanical systems. The rotor swept area is between 73,084 and 77,897 square feet. The maximum overall height of the wind turbines, with a turbine blade fully extended, is approximately 420 feet above grade. The rotor speed will be 14.4 revolutions per minute corresponding to a maximum rotor tip speed of 150 to 190 miles per hour.
12. Other components of the Project include a concrete and steel foundation for each tower, pad-mounted step-up transformer for each turbine, all-weather class 5 roads of taconite tailings or similar material, an underground electric energy collection system, and one permanent meteorological tower. The Project may include an operations and maintenance center.
13. Each turbine is interconnected primarily through an underground electrical collection system at 34.5 kV. Some overhead collector lines may be required to minimize environmental impacts from the Project. The collector lines will feed into an overhead 34.5 kV feeder line, approximately 3,000 feet in length, which will be connected to the low side of a new step up transformer inside Minnesota Power's Minntac Substation.

The substation steps up the voltage from the 34.5 kV collection system to the transmission system level of 115 kV. Any overhead connection would accommodate vertical clearances for the US Steel haul trucks, as well as meeting requirements of the National Electric Safety Code (NESC).

14. Each tower will be secured by a concrete foundation that will vary in size depending on the soil and rock conditions. Foundation sizes for other turbines of this size are generally octagonal, measuring 50 feet by 50 feet.
15. A control panel that houses communication and electronic circuitry is placed in each tower. In addition, a step-up, pad-mounted transformer is necessary for each turbine to collect the power from the turbine and transfer it to a 34.5 kV collection system via underground cables.
16. All turbines and meteorological tower systems will be interconnected with fiber optic communication cables that will be installed underground. The communication cables will run back to a central host computer which will be at the operations and maintenance facility where a supervisory control and data acquisition (SCADA) system will be located. Signals from the current and potential transformers at each of the delivery points will also be fed to the central SCADA host computer. The SCADA system will be able to give status indications of the individual wind turbines and the substation and allow for remote control of the wind turbines locally or from a remote computer. This computerized SCADA network will provide detailed operating and performance information for each wind turbine. The Permittee will maintain a computer program and database for tracking each wind turbine's maintenance history and energy production.

Wind Resource Considerations

17. The Taconite Ridge I Wind Energy Center will be located in St. Louis County along the Laurentian Divide at 1,600-1,850 feet above sea level. The Project is located on US Steel's land at the Minntac Mining Facility. WindLogics modeled wind resources in the project area. That modeling showed wind speeds at an elevation of 262 feet (80 meters) to be 14.8 to 19.0 miles per hour, with an average annual wind speed of 17.07 miles per hour.
18. The wind turbines in this Project will be sited in a single string along the ridgeline within the site boundaries. The wind turbines are sited so as to have good exposure to winds from all directions with emphasis on exposure to the prevailing northwesterly and southerly winds. The turbine spacing, according to the site permit application, maximizes use of the available wind and minimizes wake and array losses within the topographical context of the site. The turbine string is oriented generally west-east. Individual, isolated turbine sites are avoided to minimize interconnection and access costs. Sufficient spacing between the turbines is utilized to minimize wake losses when the winds are blowing parallel to the turbine rows and is addressed in the permit at III.E.5.

19. The Applicant anticipates an annual energy production of 74,000 – 78,000 megawatt hours, assuming a net capacity factor of 34 – 36 percent. These estimates are consistent with other projects that have utilized similar technology.
20. The Project Site is located on an undeveloped portion of the Minntac Facility, east of a tailings basin and north of an area of waste stockpiles.
21. The Project site as proposed includes approximately 440 acres in Sections 23-27 of Township 59 North and Range 18 West, within the corporate city limits of Mountain Iron. The land is forested with a mix of aspen, paper birch, maple, and balsam fir and pine. The proposed wind turbine site layout in the site permit application shows where the proposed facilities, such as towers, roads and the underground electrical lines, could be located. These locations are subject to change. Minnesota Power estimates that the proposed facilities will result in the permanent disturbance of approximately 47 acres of land, primarily for roads and towers; this includes a total of approximately 23 acres, approximately 2.3 acres for each turbine, which will be permanently cleared of tall vegetation. In addition to the permanent disturbance area, approximately 25 acres of land will be temporarily disturbed during construction of the wind farm for contractor staging areas, foundation and road construction, underground power lines, and tower and turbine assembly. Roads are expected to be approximately 32 to 43 feet wide.

Land Rights and Easement Agreements

22. In order to build a wind plant, a developer needs to secure site leases and easement option 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.
23. The Applicant has obtained lease and easement option agreements and/or rights to such agreements with the landowner for land within the Project site boundary necessary for installation of the components of the wind farm. These rights and easements will be able to support the Project.

Written Comments and Letters Received by August 1, 2007

24. By the close of the comment period on August 1, 2007, the PUC had received four comment letters on the proposed Taconite Ridge I Wind Energy Center Project.
25. In a letter dated July 12, 2007, the Minnesota Power Department of Health stated that runoff from the Project should not degrade the water quality (**Exhibit 8**). The letter also provided further guidelines as to whether a well installed by the Project would be classified as a Public Water Supply Unit by the Minnesota Department of Health. These comments are addressed at Findings 47 and 60 and in the Permit at III.B.5.
26. In a comment letter dated July 17, 2007, Steve Falkowski requested additional information regarding the Project's impacts to avian species (**Exhibit 8**). Mr. Falkowski also attached copies of his raptor surveys from Lookout Mountain, located northeast of

the Project. The project design incorporates many of the design recommendations from the United States Fish and Wildlife Service's *Interim Guidelines to Avoid and Minimize Impacts to Wildlife from Wind Turbines* (USFWS, 2003). The Project is located in an area with a low use by migratory birds. The USFWS concurred with the project consultant's determination that the Project would have no effect on federally-listed threatened or endangered species. Neither the USFWS nor the Minnesota Department of Natural Resources has requested additional mitigation measures for the Project. Avian impacts are further addressed at Findings 56 and 57.

27. In a comment received July 27, 2007, Trent Wickman of the Superior National Forest stated that, although the Forest Service would not be filing comments on the Project representing the view of the Forest Service as a whole, from the perspective of the Forest Services Air Quality Program, the Project would have positive impacts on the air quality in the region (**Exhibit 8**).
28. In comments filed August 1, 2007, Minnesota Power clarified the Project's impacts in some areas (tree clearing, wetland impacts, turbine spacing) and location of the Project in relation to residences, roads, and sensitive natural resources (**Exhibit 8**). Minnesota Power also requested that they not be required to conduct a noise study, and that additional wind rights obtained beyond the project area shown in the application be classified as trade secret. These comments are addressed at Findings 36, 59 and 67 and in the Permit at: III.B.7; III.C.1, 2, 3, 4, and 5; III.E.5; III.I.2; and III.J.1.

Site Criteria

29. Minnesota Rules chapter 4401 applies to the siting of Large Wind Energy Conversion Systems. The rules require applicants to provide a substantial amount of information to allow the PUC 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. Minn. Rules parts 4401.0450 through 4401.0600. The following analysis addresses the relevant criteria that are to be applied to a LWECS project.

Human Settlement, Public Health and Safety

30. The site is in an area of low population density, located within a large mining and processing site. As a result, the impact of the proposed LWECS on human settlement, public health and safety will be minimal. The site permit conditions (III. C.2 and 3) specify conditions for setbacks from residences and roads. The proposed wind turbine layout exceeds those requirements. The proposed Project is not expected to affect any water wells (used, unused or unsealed) or any rural water system that services the area.
31. There will be no displacement of existing residences or structures in siting the wind turbines and associated facilities.
32. The Project will comply with the Federal Aviation Administration requirements with respect to lighting. See site permit condition III.E.4.

33. Minnesota Power will provide security during construction and operation of the Project, including any appropriate fencing, warning signs, and locks on equipment and facilities. Minnesota Power will also provide Minntac (the landowner) and interested persons with safety information about the Project and its facilities. See site permit condition III.B.11.
34. 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 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, it remains important that the turbines are not sited in areas where regular human activity is expected below the turbines or in the immediate proximity during the winter months. There is no regular human activity expected near the turbines during winter months.
35. 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 fire protection plan.

Noise

36. Wind turbines do generate noise. According to sound pressure level tests and estimations provided by Minnesota Power in its application for a site permit, the sound pressure level is expected to be lower than the Pollution Control Agency noise standard of 50 dB(A) measured at the closest residence. See Minn. Rules part 7030.0040. The nearest residence is 8,400 feet from the nearest turbine. Noise modeling indicates that the anticipated noise impacts from the Project at the nearest residence will be somewhat more than 30 dB(A), well under the PCA's Nighttime L50 standard of 50 dB(A). This model is considered a worst-case scenario in that it only incorporates atmospheric attenuation, and does not allow for all noise attenuation that may occur from terrain and trees. Because the nearest residence is located more than a mile from the Project, noise impacts from this Project are not significant.

Visual Values

37. The placement of 10 turbines will affect the appearance of the area. The wind turbines will be mounted on tubular towers that are up to 262 feet tall. The rotor blades will have a diameter of up to 315 feet. The turbine towers and rotor blades will be prominent features on the landscape. The turbines will be visible from Mountain Iron and Virginia and from the Superior National Forest. The turbines will also be visible to passing motorists on local, county and state highways. Although there are no public roads within the Project site, motorists and drivers on local, township and county roads will travel within approximately one mile of some turbines.
38. Several mitigation measures will be taken to minimize visual impact. All site permits issued by the PUC require the use of tubular towers; therefore, the turbine towers will be

uniform in appearance. In order to comply with FAA requirements, turbines 1, 4, 7, & 10 will be lit with synchronized flashing red lights at night. As the turbines are painted white, no daytime lighting will be required. Tree clearing at the Project will be minimized to ensure the safe and efficient operation of the Project.

39. From one perspective, the proposed Project might be perceived as a visual intrusion on the natural aesthetic value on the landscape, characterized by up to 10 tubular steel having an overall height of approximately 420 feet when one blade is in the vertical position. From another perspective, the proposed Project could be seen as an extension of the resource utilization that has characterized the Iron Range for several generations. Wind plants have their own aesthetic quality, distinguishing them from other non-agricultural uses. The existing wind plants in Mower County and on the Buffalo Ridge have altered the landscape in the area from agricultural to wind plant/agricultural. This Project will increase the visual impact in an area predominated by mineral extraction and forests. The wind turbines in this Project, while prominent on the landscape, will also be consistent with the industrial and resource extraction character that is part of the Iron Range.

Recreational Resources

40. Recreational opportunities in St. Louis County include: hunting, boating, fishing, camping, skiing, hiking, snowmobiling and wildlife viewing. Hunting is permitted in designated state Minnesota Department of Natural Resources Wildlife Management Areas (WMAs), unless otherwise posted.
41. Federal land within the Superior National Forest is located approximately 0.75 miles north of the proposed Project. The closest WMA, Great Scott WMA, is located 12 miles southwest of the project site.
42. Recreational activities will not be significantly impacted by the Project. Turbines will not be located in WMAs or in any local parks. Turbine operations are not expected to affect the natural areas in any material way and no adverse impact on wildlife management areas or practices is expected.

Infrastructure

43. The Project is expected to have a minimal effect on the existing infrastructure. The proposed Project will primarily use underground cables for the collector lines. The Applicant anticipates installing overhead 34.5 kV feeder lines for approximately 3,000 feet to the Minntac Substation. Placement of collector and feeder lines is addressed in the site permit at III.E.7 and 8.
44. The Project will require the use of public roads to deliver construction supplies and materials to the work site. Site permit condition III.B.4(a) addresses this topic. Construction of the Project requires the construction of approximately three (3) miles of access roads that will be located at the project site. The typical access road will be 32 to

43 feet in width and covered with taconite tailings. The site permit at III.B. 4 (b) addresses this topic. During operation and maintenance of the wind plant, operation and maintenance crews, while inspecting and servicing the wind turbines, will use access roads. Periodic grading or other methods will maintain the roads necessary to maintain road integrity. The Permittee may do this work or contract it out.

45. If access roads must be installed across streams or drainage ways, the Permittee in consultation with the Minnesota Department of Natural Resources will design, shape and locate the road so as not to alter the original water flow or drainage patterns. Any work required below the ordinary high water line, such as road crossings or culvert installation, will require a permit from the Minnesota Department of Natural Resources.
46. The Project will not affect water supplies, railroads, telecommunication facilities, and radio reception. The presence or operation of the wind plant could potentially impact the quality of television reception in the area. Previous work on television reception issues indicates that in some cases new antennas or relocation of existing antennas can restore television signal strength reception. Minnesota Power will address the concerns of residents in the area of the project site before and after the Project construction to document and mitigate any television reception impacts that might occur. This is addressed in the site permit at III.D.3.
47. Construction, operation, and maintenance of the proposed wind plant will comply with all federal and state permit requirements.

Community Benefits

48. The Project will provide local tax revenues from a production tax on the wind turbines. No significant adverse impact on public services is expected. Wear and tear on roads will occur as a result of the transport of heavy equipment and other materials. The site permit at III.B.4 addresses road damages. The landowner will also receive easement payments from the Permittee.
49. To the extent that local workers and local contractors are capable, qualified, and available, Minnesota Power will seek to hire them to construct the proposed Project. The hiring of local people will expand employment opportunities in this area of the state and keep money in the local economy. Once constructed, the Project will be staffed with several full time site technicians and a wind plant supervisor.

Effects on Land-Based Economies

50. Although the proposed Project is located at U.S. Steel's Minntac facility, no mining operations are affected by Project. The proposed Project does not affect any agricultural, forestry or mineral extraction operations.

Archaeological and Historical Resources

51. A records review of the Minnesota State Historic Preservation Office (SHPO) computer database and Office of the State Archaeologist (OSA) did not locate any historic structures, historic sites, National Register of Historic Places (NRHP) properties or archaeological sites within the project site. Records at the OSA show one historic/archaeological site within one mile of the proposed Project and two historical/archaeological sites within three miles of the proposed Project. All three sites shown in the OSA records are in the Superior National Forest; no further detail on the nature of these sites is available. The Project is located in an area characterized as having moderate potential for unidentified archaeological sites and structures. Portions of the Project located at higher elevations with exposed bedrock and large deposits of Banded Iron Formation chert have somewhat higher probabilities for unidentified archaeological sites.
52. A Phase I Field Survey including a records review and pedestrian survey of the proposed areas of disturbance was conducted at the project site in June and July of 2007. The survey concluded that the proposed Project would not affect any Historic Properties and would have no adverse effects to archaeological sites. The results of the survey were sent to the Minnesota SHPO. The site permit at III. D.2 requires Minnesota Power to consult with the Minnesota Historical Society.
53. The site permit at III.D.2 requires that construction workers be trained about the need to avoid cultural properties, identification of cultural properties, and procedures to follow if undocumented cultural properties are found during construction. If any archaeological sites, including gravesites, 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 NRHP. If such sites are found to be eligible for the NRHP, appropriate mitigative measures will need to be developed in consultation with the Minnesota State Historic Preservation Officer, the State Archaeologist, and consulting American Indian communities. The site permit also requires the Permittee to stop work and notify the Minnesota Historical Society and PUC if any unrecorded cultural resources are found during construction.

Air and Water Emissions

54. No harmful air or water emissions are expected from the construction and operation of the LWECS.

Animals and Wildlife

55. Neither construction nor operation of the Project is expected to significantly impact wildlife.
56. The project design incorporates some of the recommendations from the USFWS *Interim Guidelines to Avoid and Minimize Impacts to Wildlife from Wind Turbines*. The project

site was selected, in part, due to the low use of the area by migratory birds and relatively low value of the area for wildlife habit relative to other portions of the state. The design of the Clipper Liberty turbines proposed for the Project is consistent with the recommendations of the USFWS and minimize perching and nesting opportunities. The permanent meteorological tower will not be guyed.

57. Mitigation measures are also prescribed in the site permit and include but are not limited to: a) a pre-construction inventory of existing biological resources, state listed and threatened species and wetlands in the project area; b) turbines and associated facilities will not be constructed in wildlife management areas, recreation and state and scientific natural areas; c) tree clearing will be limited to that necessary to ensure efficient and safe operation of the LWECS; d) sound water and soil conservation practices will be implemented during construction and operation of the Project to protect topsoil and adjacent resources and to minimize soil erosion will be taken. This also applies to any work in proximity to watercourses.

Vegetation

58. No public waters or forested land are expected to be adversely affected by the Project. Tree clearing will be limited to that necessary for the safe and efficient operation of the LWECS.

Soils

59. Construction of the wind turbines and access roads increases the potential for erosion during construction and converts prime farmland to industrial use. The site permit at III.B.5 requires a soil erosion and sediment control plan. The Project will also require a storm water run-off permit from the Minnesota Pollution Control Agency.

Surface Water and Wetlands

60. No towers, access roads or utility lines will be located in public water wetlands. Temporary and permanent staging areas are designed to minimize impacts to wetlands. The Permittee will obtain all necessary wetland permits for the Army Corps of Engineers and local governmental units prior to construction in wetlands. See site permit at III.B.3 and III.C.5.

Future Development and Expansion

61. The Project is the first LWECS in northeastern Minnesota. While other LWECS may be developed in this area, EFP staff are not aware of any other others currently proposed or in development.
62. The PUC anticipates more site permit applications under Minnesota Statutes 216F.04 (a). The PUC is responsible for siting of LWECS "in an orderly manner compatible with

environmental preservation, sustainable development, and the efficient use of resources." Minnesota Statutes 216F.03.

63. Minnesota Statutes 216E.03, subd. 7 requires consideration of design options that might minimize adverse environmental impacts. By using larger turbines, fewer turbines are required, reducing siting needs for turbines and related facilities. Turbines must also be designed to minimize noise and aesthetic impacts. Buffers between strings of turbines are designed to protect the turbines' production potential. The site permit also provides for buffers between adjacent wind generation projects to protect production potential. See site permit at III.C.1.
64. The location and spacing of the turbines are critical to the issues of orderly development and the efficient use of wind resources. Turbines are likely to be located in the best winds, and the spacing dictates, among other factors, how much land area the project occupies. There is strong public support for orderly development of wind energy in Minnesota.
65. One efficiency issue is the loss of wind in the wake of turbines. When wind is converted to rotational energy by the blades of a wind turbine, energy is extracted from the wind. Consequently, the wind flow behind the turbine is not as fast and is more turbulent than the free-flowing wind. This condition persists for some distance behind the turbine as normal wind flow is gradually restored. If a turbine is spaced too close downwind of another, it produces less energy and is less cost-effective. This is the wake loss effect. If the spacing is too far, wind resources are wasted and the projects' footprint on the land is unnecessarily large.
66. For this Project, turbine spacing maximizes use of the available wind resources and minimizes wake and array losses within the topographical context of the site. Site topography and wind resources did not lead to a layout involving long strips of turbines running parallel to each other and perpendicular to the prevailing wind. Instead, the site uses shorter strings. The objective was to capture the most net energy possible from the best available wind resource. Minnesota Power arrived at an average turbine spacing of approximately 3 RD in the east-west direction.

Maintenance

67. Maintenance of the turbines will be on a scheduled, rotating basis. Additional unscheduled maintenance will be conducted on an as-needed basis. Maintenance on the interconnection points will be coordinated with Minnesota Power transmission personnel. The Project will be staffed with site technical and lead or supervisory personnel. The Permittee may construct a facility to support the operation and maintenance efforts for the Project. Alternatively, or in conjunction with any on-site facility, an appropriate existing facility near the project location may be used to support operations and maintenance for the Project.

Site Restoration

68. Decommissioning and site restoration activities will include (1) removal of all turbines and towers; (2) removal of all pad mounted transformers; (3) removal of all above-ground distribution facilities; (4) removal of foundations to a depth of four feet below grade, unless otherwise agreed to by the landowner; and (5) removal of surface road material and restoration of the roads and turbine sites to previous conditions to the extent feasible, consistent with the landowner's desires.

Decommissioning Economics

69. The estimated decommissioning cost for the Project is approximately \$300,000 in 2007 dollars, based on decommissioning costs of similar projects. The Permit, at III.G.1, requires the Permittee to submit a Decommissioning Plan to the PUC that describes how the Permittee will ensure that the resources are available to pay for decommissioning the Project at the appropriate time.
70. To assure that Minnesota Power will meet its obligation, should the Project be decommissioned, the Permittee will set aside decommissioning funds consistent with its obligations as a public utility under Minnesota Statutes 216B.11 and Minnesota Rules, parts 7825.0600 and 7825.0700.

Site Permit Conditions

71. Nearly all 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. No significant comments were received concerning the requirements and conditions in the draft site permit distributed for comment on June 28, 2007. Minor changes that provide for clarifications of the draft site permit conditions have been made.
72. The site permit contains conditions that apply to site preparation, construction, cleanup, restoration, operation, maintenance, abandonment, decommissioning and all other aspects of the Project.

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 under Minnesota Statutes section 216F.04 over the site permit applied for by Minnesota Power.

3. The Taconite Ridge I Wind Energy Center application for a site permit was properly filed and noticed as required by Minnesota Statutes section 216F.04 and Minnesota Rules parts 4401.0460 subp 2 and 4401.0550 subp. 2.
4. The Minnesota Public Utilities Commission has afforded all interested persons an opportunity to participate in the development of the site permit and has complied with all applicable procedural requirements of Minnesota Statutes Chapter 216F and Minnesota Rules Chapter 4401.
5. The Minnesota Public Utilities Commission has jurisdiction under Minnesota Statutes section 216F.04 over the site permit applied for by Minnesota Power.
6. The proposed Taconite Ridge I Wind Energy Center 25-megawatt LWECs project will not create significant human or environmental impacts and is compatible with environmental preservation, sustainable development, and the efficient use of resources.
7. The Minnesota Public Utilities Commission has the authority under Minnesota Statutes section 216F.04 to establish conditions in site permits relating to site layout and construction and operation and maintenance of an LWECs. The conditions contained in the site permit issued to Minnesota Power are appropriate and necessary and within the Minnesota Public Utilities Commission's authority.

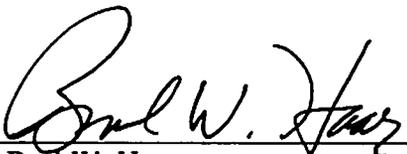
Based on the foregoing Findings of Fact and Conclusions of Law, the Minnesota Public Utilities Commission issues the following:

ORDER

The Attached Site Permit is hereby issued to Minnesota Power for up to a 25-MW Large Wind Energy Conversion System in St. Louis County, Minnesota. The site permit issued by the PUC authorizes Minnesota Power to construct and operate the proposed Large Wind Energy Conversion System 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 4401.

Approved and adopted this 11 day of September, 2007.

BY ORDER OF THE COMMISSION



Burl W. Haar,
Executive Secretary

**SITE PERMIT FOR
TACONITE RIDGE I WIND ENERGY CENTER
LARGE WIND ENERGY CONVERSION SYSTEM
IN
ST. LOUIS COUNTY
ISSUED TO
MINNESOTA POWER
PUC DOCKET NO. E-015/WS-07-676**

In accordance with Minnesota Statutes Section 216F.04 this Site Permit is hereby issued to:

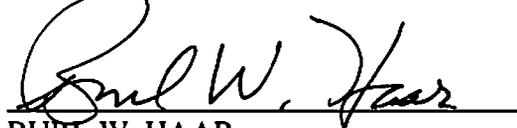
MINNESOTA POWER

Minnesota Power is authorized to construct and operate up to a 25-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 30 years from the date of issuance.

Dated: September 11 2007

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 tape) by calling 651-201-2202 (Voice), 651-297-1200 (TTY).

www.puc.state.mn.us

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I. SITE PERMIT

This Site Permit for a Large Wind Energy Conversion System (LWECS) authorizes Minnesota Power (hereinafter "Permittee") to construct up to a 25-Megawatt LWECS and associated facilities known as the Taconite Ridge I Wind Energy Center in St. Louis County, on a site of approximately 440 acres in accordance with the conditions contained in this Permit. The site boundary is shown on the map that is attached hereto as Exhibit 1.

II. PROJECT DESCRIPTION

The 25-Megawatt (MW) LWECS authorized to be constructed in this Permit is referred to as the Taconite Ridge I Wind Energy Center and will be owned and operated by Minnesota Power. The project will consist of up to ten 2.5 MW Clipper Liberty wind turbines with a nominal nameplate capacity of 25-Megawatts. Turbines are interconnected by communication and electrical power collection facilities within the wind farm. These facilities will include transformers and underground collector lines, and feeder lines that will deliver wind-generated power to the Permittee's existing Minntac Substation, located at the site.

III. CONDITIONS

The following conditions shall apply to site preparation, construction, cleanup, restoration, operation, maintenance, abandonment, decommissioning and all other phases of the LWECS. The PUC preserves all available remedies for violation of any of these Permit conditions, including revocation or modification of the Permit.

A. GENERAL CONSTRUCTION CONDITIONS

1. SITE PLAN

Prior to commencing construction, the Permittee shall submit to the PUC a site plan for all turbines, roads, electrical equipment, collector and feeder lines and other associated facilities to be constructed and engineering drawings for site preparation, construction of the facilities, and a plan for restoration of the site due to construction. The Permittee may submit a site plan and engineering drawings for only a portion of the LWECS if the Permittee is prepared to commence construction on certain parts of the project before completing the site plan and engineering drawings for other parts of the LWECS. The Permittee shall have the right to move or relocate turbine sites due to the discovery of environmental conditions during construction, not previously identified, which by law or pursuant to this Permit would prevent such use. The Permittee shall notify the PUC of any turbines that are to be relocated before the turbine is constructed on the new site.

2. FIELD REPRESENTATIVE

Prior to the start of construction and continuously throughout construction and site restoration, the Permittee shall designate a field representative responsible for overseeing compliance with the conditions of this Permit. This person (or a designee) shall be accessible by telephone during

normal business hours. This person's address, phone number and emergency phone number shall be provided to the PUC, who 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 PUC.

3. PRECONSTRUCTION MEETING

Prior to the start of any construction, the Permittee shall conduct a preconstruction meeting with the person designated by the PUC to coordinate field monitoring of construction activities.

4. NOTICE OF PERMIT CONDITIONS

The Permittee shall inform all employees, contractors, and other persons involved in the construction and ongoing operation of the LWECS of the terms and conditions of this Permit.

B. MITIGATION MEASURES

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 LWECS.

2. COMPACTION

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

3. EQUIPMENT STORAGE

Staging areas, both temporary and permanent, shall be designed to minimize impacts to wetlands. The Permittee will obtain all necessary permits from the Army Corps of Engineers and the applicable Local Governmental Unit under the Minnesota Wetlands Conservation Act prior to filling or construction affecting any wetland subject to Corps or local permitting.

4. ROADS

(a) Public Roads

Prior to commencement of construction, the Permittee shall identify all state, county or township roads that will be used for the LWECS project and shall notify the PUC 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 LWECS. Where practical, all-weather roads shall be used to deliver concrete, 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 LWECS for maintenance and repair of roads that will be subject to extra wear and tear due to transportation of equipment and LWECS components. The Permittee shall notify the PUC of such arrangements upon request of the PUC.

(b) Turbine Access Roads

The Permittee shall construct the smallest number of turbine access roads that are practicable. Access roads shall be low profile roads and shall be covered with Class 5 gravel or similar material. 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.

(c) 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.

5. SOIL EROSION AND SEDIMENT CONTROL

The Permittee shall develop a Soil Erosion and Sediment Control Plan prior to construction and submit the Plan to the PUC. This Plan may be the same as the Storm Water Pollution Prevention Plan (SWPP) included as part of the Minnesota Pollution Control Agency (MPCA) National Pollutant Discharge Elimination System (NPDES) General Stormwater Permit for Construction Activity the Permittee will acquire for the project. A goal of the Soil Erosion and Sediment Control Plan is to minimize soil erosion and, wherever possible, to allow for the establishment of appropriate plant species in cooperation with landowners.

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 installed prior to construction and maintained throughout the project's life.

6. 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. TREE REMOVAL

The Permittee shall minimize the removal of trees to the extent possible. The Permittee shall not remove trees without the approval of the affected landowner. The Permittee shall identify areas where trees were removed on a map submitted to the PUC within 60 days of construction.

8. RESTORATION

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

9. 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.

10. 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 its 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.

11. PUBLIC SAFETY

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

12. FIRE PROTECTION

The Permittee shall prepare a fire protection and medical emergency plan in consultation with the fire department having jurisdiction over the area prior to LWECS construction. The Permittee shall submit a copy of the plan to the PUC upon request.

13. TOWER IDENTIFICATION

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

C. SETBACKS

1. WIND ACCESS BUFFER

Wind turbine towers shall not be placed less than 5 rotor diameters (RD) from the perimeter of the site on the north-south axis and 3 RD on the east-west axis where the Permittee does not hold the wind rights, without the approval of the PUC.

2. RESIDENCES

Wind turbine towers shall not be located closer than 500 feet from the nearest occupied dwelling.

3. ROADS

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

4. WILDLIFE MANAGEMENT AREAS

Wind turbines and associated facilities including foundations, access roads, underground cable, and transformers, shall not be located in Waterfowl Protection Areas, State Wildlife Management Areas or Scientific and Natural Areas or in county parks. These areas may be used in establishing the wind access buffer required by paragraph III.C.1.

5. WETLANDS

Wind turbines and all 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, subd. 15a.

D. PRECONSTRUCTION SURVEYS

1. BIOLOGICAL PRESERVATION SURVEY

The Permittee, in consultation with DNR and other interested parties, shall conduct a pre-construction inventory of existing native forests, wetlands, and any other biologically sensitive areas within the site and assess the presence of state- or federally-listed or threatened species. The results of the survey shall be submitted to the PUC and DNR prior to the commencement of construction.

2. ARCHAEOLOGICAL RESOURCES

The Permittee shall work with the State Historic Preservation Office (SHPO) at the Minnesota Historical Society and the State Archaeologist as early as possible in the planning process to determine whether an archaeological survey is recommended for any part of the proposed project. The Permittee will contract with a qualified archaeologist to complete such surveys, and will submit the results to the PUC, the SHPO and the State Archaeologist. 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 PUC in consultation with SHPO and the State Archaeologist. In addition, the Permittee shall mark and preserve any previously unrecorded archaeological sites that are found during construction and shall promptly notify the SHPO, the State Archaeologist, and the PUC of such discovery. The Permittee shall not excavate at such locations until so authorized by the PUC 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 MHS as soon as possible in the planning process to coordinate section 106 (36 C.F.R 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 PUC and the MHS about the discovery. The PUC and the MHS 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 MHS has directed that work shall cease. In such event, work shall not continue until the MHS determines that construction can proceed.

3. ELECTROMAGNETIC INTERFERENCE

Within 60 days after issuance of this Permit, the Permittee shall submit a plan to the PUC for conducting an assessment of television signal reception and microwave signal patterns in the project area prior to commencement of construction of the project. In the event that the assessment has been conducted prior to the issuance of the permit, the Permittee shall notify the PUC that such an assessment has been completed. 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 reception or microwave patterns in the event residents should complain about such disruption or interference after the turbines are placed in operation. The assessment shall be completed prior to operation of the turbines. 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 LWECS and associated facilities so as to cause microwave, television, radio, telecommunications or navigation interference contrary to Federal Communications Commission (FCC) regulations or other law. In the event the LWECS and its associated facilities or its operations cause such interference, the Permittee shall take timely measures necessary to correct the problem.

E. SITE LAYOUT RESTRICTIONS

1. WIND TURBINE TOWERS

Structures for wind turbines shall be self-supporting tubular towers. The towers shall not be more than 262 feet (80 meters) above grade.

2. METEOROLOGICAL TOWERS

Permanent towers up to 100 feet high for meteorological equipment shall be free standing. Temporary meteorological towers, which are those that will be removed after completion of construction, and all meteorological towers over 100 feet high may be guyed if the landowner has given written permission and the guys are properly marked with safety shields.

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 Minnesota Pollution Control Agency (PCA) at all times at all appropriate locations. Turbines shall be moved or modified or removed from service if necessary to comply with this condition. 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 standards. The Permittee shall be required to comply with this condition with respect to all homes or other receptors in place as of the time of construction, but not with respect to such receptors built after erection of the towers. On request of the PUC, the Permittee shall submit a proposal to the PUC for the conduct of a noise study to determine the noise levels at various distances from the turbines under different wind conditions and speeds. Upon PUC approval of the proposal the Permittee shall carryout the study.

4. FEDERAL AVIATION ADMINISTRATION

Towers shall be marked as required by the Federal Aviation Administration (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.

5. TURBINE SPACING

The turbine towers shall be constructed within the site as shown on the map attached as Exhibit 1 subject to modifications necessary to comply with the conditions of this permit. Unless otherwise agreed to on authority of the PUC the turbine towers shall be spaced no closer than 3 RD for

crosswind spacing (distance between turbines). If required during final micro siting of the turbine towers to account for topographic conditions, up to 20 percent of the towers (2 towers) may be sited closer than the above spacing but the Permittee shall minimize the need to site the turbine towers closer.

6. 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, 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.

7. ELECTRICAL CABLES

The Permittee shall place electrical lines, known as collectors, and communication cables underground when located on private property, unless otherwise agreed to by the affected landowner. Collectors and cables shall also be placed within or adjacent to the land necessary for turbine access roads unless otherwise negotiated with the affected landowner. This paragraph does not apply to feeder lines.

8. FEEDER LINES

The Permittee shall place overhead 34.5 kV electric lines, known as feeders, on public rights-of-way if a public right-of-way exists or the Permittee may place feeders on private property. A change in feeder line locations may be made as long as feeders remain on public rights-of-way and approval has been obtained from the governmental unit responsible for the affected right-of-way. When placing feeders on private property, the Permittee shall place the feeder in accordance with the easement negotiated with the affected landowner. The Permittee shall design and construct any overhead feeder lines spanning Minntac haul roads with vertical clearances sufficient to accommodate US Steel haul trucks as well as the requirements of the National Electric Safety Code. Notwithstanding any of the requirements in paragraph III.D to conduct surveys before any construction can commence, the Permittee may begin immediately upon issuance of this permit to construct the 34.5 kV feeder lines that will be required as part of this project. The Permittee shall submit the site plan and engineering drawings required under paragraph III.A.1. for the feeder lines before commencing construction. Any guy wires on the structures for feeder lines shall be marked with safety shields.

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, IEEE 519, and IEEE 367, provided the telephone service provider(s) have complied with any obligations imposed on it pursuant to these standards. Upon request by the PUC, the Permittee shall report to the PUC on compliance with these standards.

F. STUDIES

1. WAKE LOSS STUDIES

The Permittee shall provide to the PUC with the site plan required by paragraph III.A.1 the preconstruction micro siting analysis leading to the final tower locations and an estimate of total project wake losses. The Permittee shall provide to the PUC any operational wake loss studies conducted on this project.

G. DECOMMISSIONING/RESTORATION/ABANDONMENT

1. DECOMMISSIONING PLAN

Prior to commencement of construction, the Permittee shall submit to the PUC a Decommissioning Plan describing the manner in which the Permittee anticipates decommissioning the project in accordance with the requirements of Minn. Rules part 4401.0450, subp.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 PUC may at any time request the Permittee to file a report with the PUC describing how the Permittee is fulfilling this obligation.

2. SITE RESTORATION

Upon expiration of this Permit, or upon earlier termination of operation of the LWECs, the Permittee shall have the obligation to dismantle and remove from the site all towers, turbine generators, transformers, overhead and underground cables, foundations, buildings and ancillary equipment to a depth of four feet, unless otherwise agreed to by the landowner. To the extent possible 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 requesting that one or more roads, or portions thereof, be retained. Any agreement for removal to a lesser depth or for 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 shall be submitted to the PUC prior to completion of restoration activities. The site shall be restored in accordance with the requirements of this condition within 18 months after expiration.

3. ABANDONED TURBINES

The Permittee shall advise the PUC of any turbines that are abandoned prior to termination of operation of the LWECs. The PUC may require the Permittee to decommission any abandoned turbine.

H. REPORTING

1. PROJECT ENERGY PRODUCTION

The Permittee shall, by July 15 of each year, report to the PUC on the monthly energy production of the project and the average monthly wind speed collected at one permanent meteorological tower selected by the PUC during the preceding year or partial year of operation. The report shall include copies of any project production reports filed with the Midwest Area Power Pool (MAPP), the Federal Energy Regulatory Commission (FERC), or any other public regulatory agency. The Permittee shall describe the operational status and availability of the Project and any major outages, major repairs, or turbine performance improvements occurring in the previous year.

2. WIND RESOURCE USE

Within three months after commercial operation begins, the Permittee shall provide the PUC with viewer access to its supervisory control and data acquisition (SCADA) system to allow the PUC convenient review of the following average hourly data for each hour of commercial operation in printed format or electronic format capable of computerized analysis as specified by the PUC:

- (a) The power output of each turbine;
- (b) The wind speed and direction measured at all monitored heights at any temporary and permanent meteorological towers, connected to the SCADA system, owned or operated by the Permittee, in or within three miles of the project site boundary; and
- (c) Temperature and any other meteorological parameters recorded at one permanent meteorological tower selected by the PUC.

Once the Permittee provides the initial access, the PUC shall be responsible for maintaining the remote viewer connection. The Permittee shall not be in violation of this Permit if remote connection is lost or the SCADA system goes down. In the event the PUC is not provided access to the SCADA system, the Permittee shall file a quarterly report (due January 15, April 15, July 15, and October 15) with the PUC with the same data specified above. After two years of commercial operation, the PUC may reduce or eliminate the requirements of this condition. The provisions of paragraph III.K.5 shall apply to the PUC's review of this data.

3. EXTRAORDINARY EVENTS

Within 24 hours of an occurrence, the Permittee shall notify the PUC of any extraordinary event. Extraordinary events include but shall not be limited to: fires, tower collapse, thrown blade, collector or feeder line failure, injured LWECs worker or private person, kills of migratory, threatened or endangered species, or discovery of an unexpectedly large number of dead birds or bats of any variety on site. In the event of extraordinary avian mortality the DNR shall also be notified within 24 hours. The Permittee shall, within 30 days of the occurrence, submit a report

to the PUC describing the cause of the occurrence and the steps taken to avoid future occurrences.

4. COMPLAINTS

Prior to the start of construction, the Permittee shall submit to the PUC the company's procedures to be used to receive and respond to complaints. The Permittee shall report to the PUC all complaints received concerning any part of the LWECS in accordance with the procedures provided in Exhibit 2 attached to this Permit.

I. FINAL CONSTRUCTION

1. AS-BUILT PLANS AND SPECIFICATIONS

Within 60 days after completion of construction, the Permittee shall submit to the PUC a copy of the as-built plans and specifications. The Permittee must also submit this data in a geographic information system (GIS) compatible format so that the PUC can place it into the Land Management Information Center's geographic data clearinghouse located in the Office of Geographic and Demographic Analysis.

2. FINAL BOUNDARIES

After completion of construction, the PUC may determine a 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.

3. EXPANSION OF SITE BOUNDARIES

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

J. AUTHORITY TO CONSTRUCT LWECS

1. WIND RIGHTS.

The Permittee shall obtain exclusive wind rights within the boundaries of the LWECS authorized by this Permit. The Permittee shall submit documentation of such exclusive wind rights if requested by the PUC.

2. OTHER PERMIT APPLICATIONS.

Nothing in this Permit shall be construed to preclude any other person from seeking a site permit to construct a large wind energy conversion system 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.

3. PREEMPTION OF OTHER LAWS

Pursuant to Minnesota Statute 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.

K. MISCELLANEOUS

1. PERIODIC REVIEW

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

2. FAILURE TO COMMENCE CONSTRUCTION

If the Permittee has not completed the pre-construction surveys required in paragraph III.D and commenced construction of the LWECs within two years of the issuance of this Permit, the Permittee must advise the PUC of the reason construction has not commenced. In such event, the PUC may determine whether this Permit should be revoked. No revocation of this Permit may be undertaken except in accordance with applicable statutes and rules, including Minnesota Statute section 216F.05.

3. 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 facility: or
- (c) Existence of other grounds established by rule.

4. REVOCATION OR SUSPENSION OF THE PERMIT

The PUC 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 applicant, and a true statement would have warranted a change in the PUC'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 or rule or an order of the PUC.

In the event the PUC shall determine that it is appropriate to consider revocation or suspension of this Permit, the PUC shall proceed in accordance with the requirements of Minnesota Statute section 216.05 to determine the appropriate action. Upon a finding of any of the above, the PUC may require the Permittee to undertake corrective measures in lieu of having the Permit suspended or revoked.

5. PROPRIETARY INFORMATION

Certain information required to be submitted to the PUC 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 PUC. The Permittee must satisfy requirements of applicable law to obtain the protection afforded by the law.

6. TRANSFER OF PERMIT

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

7. 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 PUC upon request.

8. SITE MANAGER

The Permittee shall designate a Site Manager who shall be the contact person for the PUC to contact with questions about the LWECS. The Permittee shall provide the PUC with the name,

address, and phone numbers of the project site manager prior to placing any turbine into operation. This information shall be updated as needed by informing the PUC of any changes as they become effective.

9. NOTICE TO LOCAL RESIDENTS

The Permittee shall, within ten working days of receipt of this Permit, send a 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 also, within 10 working days of issuance, send a 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 30 days of issuance of this Permit, the Permittee shall send a copy of the Permit to each affected landowner within the site. In no case shall the affected landowner receive the site permit less than five days prior to the start of construction on their property.

10. RIGHT OF ENTRY

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

- (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. MORE STRINGENT RULES

The PUC's issuance of this Site Permit does not prevent the future adoption by the PUC 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.

L. EXPIRATION DATE

This Permit shall expire 30 years from the date of issuance.

EXHIBIT 1

EXHIBIT 1
PROJECT MAP

EXHIBIT 1

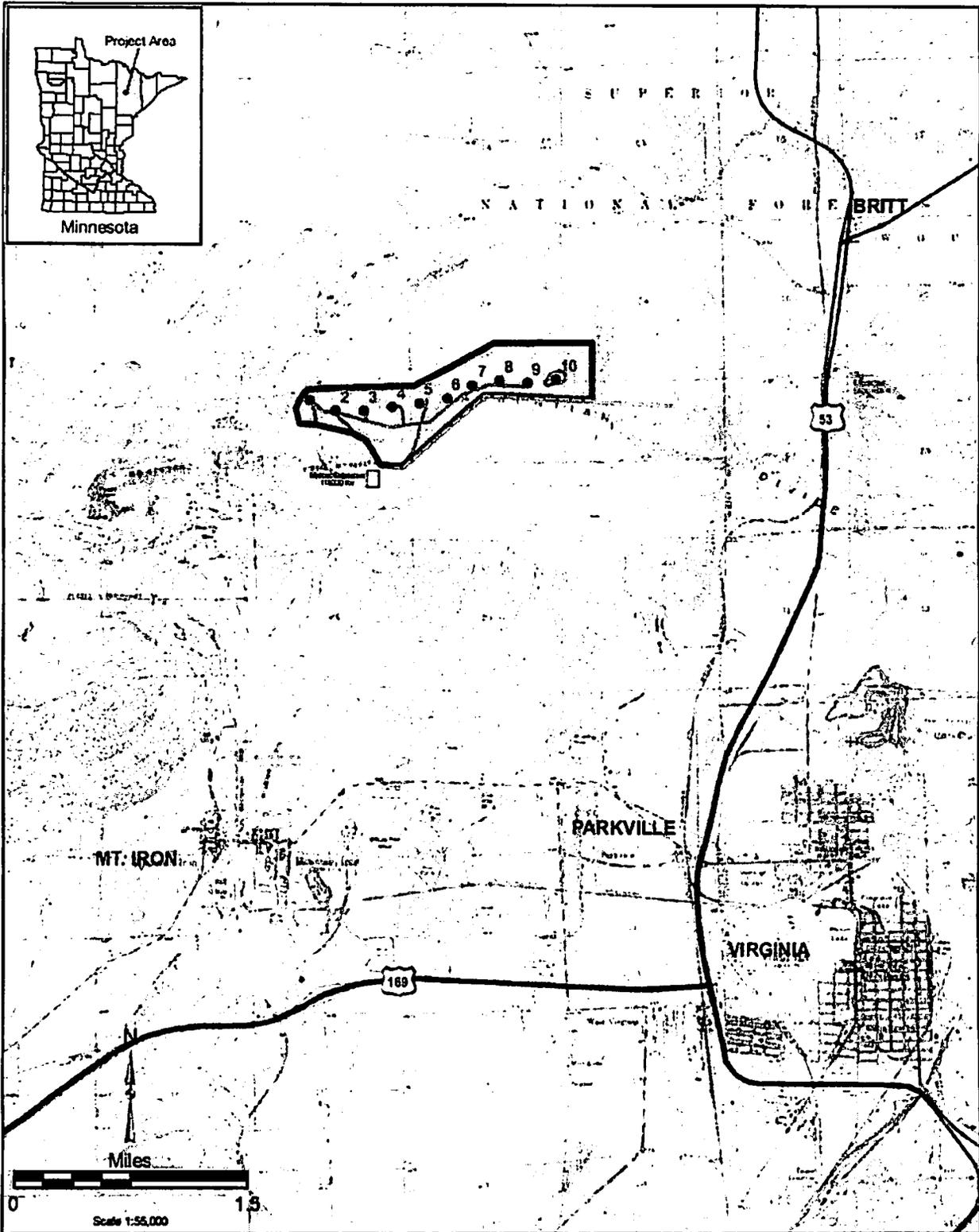


EXHIBIT 2

COMPLAINT REPORT PROCEDURES

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

1. Purpose

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

2. Scope

This reporting plan encompasses complaint report procedures and frequency.

3. Applicability

The procedures shall be used for all complaints received by the Permittee.

4. Definitions

Complaint - A statement presented by a person expressing dissatisfaction, resentment, or discontent as a direct result of the LWECS and associated facilities. Complaints do not include requests, inquiries, questions or general comments.

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

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.

5. Responsibilities

Everyone involved with any phase of the LWECS is responsible to ensure expeditious and equitable resolution of all complaints. It is therefore necessary to establish a uniform method for documenting and handling complaints related to this LWECS project. The following procedures will satisfy this requirement:

- A. The Permittee shall document all complaints by maintaining a record of all applicable information concerning the complaint, including the following:
1. Name of the Permittee and project.
 2. Name of complainant, address and phone number.
 3. Precise property description or tract numbers (where applicable).
 4. Nature of complaint.
 5. Response given.
 6. Name of person receiving complaint and date of receipt.
 7. Name of person reporting complaint to the PUC and phone number.
 8. Final disposition and date.
- B. The Permittee shall assign an individual to summarize complaints for transmittal to the PUC.

6. Requirements

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

Immediate Reports - All substantial complaints shall be reported to the PUC by phone or by e-mail 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 at the following: DOC.energypermitcompliance@state.mn.us or 1-800-657-3794. 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. Such summaries shall be sent to Dr. Burl W. Haar, Executive Secretary, Minnesota Public Utilities Commission, Metro Square Building, 121 7th Place East, Suite 350, St. Paul, MN 55101-2147. A copy of each complaint shall be sent to Wind Permit Compliance, Minnesota Department of Commerce, 85 7th Place East, Suite 500, St. Paul, MN 55101-2198.

Unresolved Complaints – The permittee shall submit all unresolved complaints to the PUC for resolution by the PUC, where appropriate, no later than 45 days after the date of the submission.

7. Complaints Received by the PUC

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