STATE OF NORTH DAKOTA

PUBLIC SERVICE COMMISSION

Thunder Spirit Wind, LLC **Case No. PU-11-601**
150 MW Wind Energy Project- Adams County
Siting Application

AFFIDAVIT OF SERVICE BY CERTIFIED MAIL

STATE OF NORTH DAKOTA
COUNTY OF BURLEIGH

John G Hamre deposes and says that:

he is over the age of 18 years and not a party to this action and, on the **15th** day of **August, 2014,** he deposited in the United States Mail, at Bismarck, North Dakota, **one** envelope with certified postage, return receipt requested, fully prepaid, securely sealed and containing a photocopy of:

Supplemental Order

and an original of:

First Amended Certificate of Site Compatibility Number 35

The envelope was addressed as follows:

Tracey Dubuque
Tetra Tech, Inc.
160 Federal Street
Boston, MA 02110

Certified No. 7012 3460 0000 6344 1614

The address shown is the respective addressee's last reasonably ascertainable post office address.

John G Hamre

Geralyn R Schmaltz
Notary Public

Subscribed and sworn to before me
this **15th** day of **August, 2014.**

SEAL

GERALYN R. SCHMALTZ
Notary Public
State of North Dakota
My Commission Expires Oct. 5, 2016

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SUPPLEMENTAL ORDER

August 14, 2014

On October 9, 2013 the Commission issued Certificate of Site Compatibility Number 35 to Thunder Spirit Wind, LLC (Thunder Spirit) authorizing construction of the Thunder Spirit Wind Energy Project consisting of up to 75 turbine locations totaling up to 150 MW of generating capacity in proposed and alternate locations in Adams County, North Dakota.

On May 30, 2014, Thunder Spirit filed with the Commission an application to amend the order issuing Certificate of Site Compatibility Number 35. Thunder Spirit requests to revise the previously-approved turbine site plan within the approved project area to optimize project efficiencies for a smaller project using 43 Nordex N100/2500 2.5 MW turbines totaling 107.5 MW of generating capacity. Thunder Spirit proposes 18 new turbine locations and shifts in 25 previously approved turbine locations ranging from less than a foot up to 792 feet.

On June 11, 2014 the Commission deemed the application to amend complete and issued a Notice of Filing, Notice of Informal Hearing and Notice of Opportunity for Hearing, which provided until July 23, 2014 for receiving written comments and requests for hearing. The notice identified the following issues to be considered:

1. Will the location, construction, and operation of the proposed facilities produce minimal adverse effects on the environment and upon the welfare of the citizens of North Dakota?
2. Are the proposed facilities compatible with the environmental preservation and the efficient use of resources?
3. Will the proposed facility locations minimize adverse human and environmental impact while ensuring continuing system reliability and integrity and ensuring that energy needs are met and fulfilled in an orderly and timely fashion?

On June 25, 2014 the Commission discussed this matter with Commission staff and the Applicant at an informal hearing as noticed.

On July 21, 2014 the Commission received a request for hearing from Bruce and Nancy Secrest, land-owners within the project area. The request was withdrawn by the Secrests on August 4, 2014.

Certificate of Site Compatibility No. 35 was issued to Thunder Spirit Wind, LLC authorizing construction of up to 150 MW of total wind turbine nameplate generating capacity using a turbine model that was yet to be determined. The approved turbine

site plan was evaluated using Vestas V100 2.0 MW turbines, Siemens SWT 2.3-108 2.3 MW turbines and Acciona AW116/3000 3.0 MW turbines. These turbines have a hub height range of 80 to 92 meters (262-302 feet) and a rotor diameter range of 100 to 116 meters (328-380 feet).

The Nordex N100/2500 IEC II turbines have a name plate generating capacity of 2.5 MW with a hub height of 80 meters and a rotor diameter of 100 meters, which is within the lower range of turbine hub heights and rotor sizes evaluated for the original site plan.

Thunder Spirit reports that in December 2013 the Federal Aviation Administration (FAA) responded favorably to an appeal to open up an area with higher wind resource potential in the southwest portion of the project previously judged to have airspace obstruction conflicts. Thunder Spirit will file FAA no-hazard determinations when received.

As a result of the FAA determination, the selection of the Nordex turbines, and various landowner or other miscellaneous issues, Thunder Spirit is proposing changes to optimize its previous site plan within the approved project area. Table 1 in the May 30th application describes 25 turbine shifts and 18 added turbine locations being proposed. Figure 20, filed June 24, 2014, provides a final comprehensive site plan with the optimized 43 turbine layout plus 31 previously-approved locations reserved for a possible installation of the remainder of the 150 MW site certificate in the future.

Thunder Spirit performed exclusion and avoidance area analysis and wetland delineations for the optimized layout. No new exclusion or avoidance areas were found. One jurisdictional wetland was delineated and will be avoided with directional boring of a collector line. Communications studies for microwaves, TV, and emergency services were re-run due to age of the previous studies and results were unchanged.

Revised shadow flicker and noise simulations were performed for 35 receptor locations identified within one mile of the optimized case turbine locations. The maximum expected sound level indicated within 100 feet of an occupied residence is approximately 48.4 dBA. The maximum expected shadow flicker impact is approximately 15.3 hours per year. Noise and shadow flicker simulations would be re-run and filed with the Commission prior to beginning construction of the remainder of the 150 MW site certificate in the future.

An addendum to the class III pedestrian cultural resource survey was conducted for the optimized layout that found 30 newly documented cultural resources. All sites are being fenced and avoided as appropriate. The State Historical Society reviewed the report and concurred with a recommendation of "No Significant Sites Affected".

The Adams County Commission amended its local conditional use permit approving the proposed turbine layout revisions in July 2014.

The application submitted by Thunder Spirit meets the site evaluation criteria required by North Dakota Century Code Chapter 49-22.

The location, construction, and operation of the proposed facilities will produce minimal adverse effects on the environment and upon the welfare of the citizens of North Dakota.

The proposed facilities are compatible with the environmental preservation and the efficient use of resources.

The proposed facility locations will minimize adverse human and environmental impact while ensuring continuing system reliability and integrity and ensuring that energy needs are met and fulfilled in an orderly and timely fashion.

The proposed project is of such design, location, and purpose that it will produce minimal adverse effects.

Order

The Commission Orders:

1. First Amended Certificate of Site Compatibility No. 35 is issued to Thunder Spirit Wind, LLC authorizing construction of its optimized site plan as proposed using Nordex N100/2500 IEC II turbines.

2. Within the permitted area, Thunder Spirit Wind, LLC is authorized to site and construct wind turbines in 43 proposed locations plus 31 previously-approved locations reserved for a possible installation of the remainder of the 150 MW site certificate in the future, along with electric collection and communication lines, a project substation, access roads, and other associated facilities as identified in the applications and at the hearing.

3. Thunder Spirit shall file updated noise and shadow flicker studies for its final site plan prior to beginning construction on the remainder of its 150 MW site certificate.

4. All provisions and requirements in the Commission's October 9, 2013 Findings of Fact, Conclusions of Law and Order continue to apply except where altered by this Order.

PUBLIC SERVICE COMMISSION

NAY

Randy Christmann
Commissioner

Brian P. Kalk
Chairman

Julie Fedorchak
Commissioner

PUBLIC SERVICE COMMISSION

STATE OF NORTH DAKOTA

First Amended Certificate of Site Compatibility Number 35

This is to certify that the Commission has designated an energy conversion facility site for Thunder Spirit Wind, LLC, for its Thunder Spirit Wind Energy Project consisting of up to 75 wind turbines and associated facilities totaling up to 150 MW of generating capacity in Adams County, North Dakota.

The facility may be sited in this designated location in compliance with the energy conversion facility siting criteria. This certificate is issued in accordance with the Finding of Fact, Conclusion of Law and Order of the Commission in Case No. PU-11-601 dated October 9, 2013 and the Supplemental Order of the Commission dated August 14, 2014 subject to the conditions and limitations noted in those orders.

Bismarck, North Dakota, August 14, 2014.

ATTEST: ***PUBLIC SERVICE COMMISSION***

Executive Secretary ***Commissioner***