MINNESOTA DEPARTMENT OF COMMERCE

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September 30, 2014

Burl W. Haar, Executive Secretary
Minnesota Public Utilities Commission
127 7th Place East, Suite 350
St. Paul, MN 55101-2147

Re: **Petition for Modification or Amendment to the Black Oak Wind and Getty Wind large wind energy conversion system site permits and appropriate conditions**
Docket Nos. **IP-6853/WS-10-1240 (Black Oak), and**
IP-6866/WS-11-831 (Getty Wind)

Dear Dr. Haar:

Attached are the comments and recommendations of the Minnesota Department of Commerce Energy Environmental Review and Analysis (EERA) staff in the following matters:

In the Matter of the Application of Black Oak Wind, LLC for a Site Permit for a 42 Megawatt Large Wind Energy Conversion System in Stearns County, Minnesota

In the Matter of the Application of Getty Wind Company, LLC for a Site Permit for a 40 Megawatt Large Wind Energy Conversion System in Stearns County, Minnesota

Black Oak Wind, LLC and Getty Wind Company, LLC jointly submitted a petition to modify or amend the site permits issued in the above dockets.

This filing was made on September 19, 2014, by:

Christina K. Brusven
Fredrikson & Byron, P.A.
200 South Sixth Street, Suite 4000
Minneapolis, Minnesota 55402-1425

EERA staff is available to answer any questions the Commission may have.

Sincerely,

Suzanne Steinhauer

DOC EERA Staff

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MINNESOTA DEPARTMENT OF COMMERCE

BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

COMMENTS AND RECOMMENDATIONS OF THE MINNESOTA DEPARTMENT OF COMMERCE ENERGY ENVIRONMENTAL REVIEW AND ANALYSIS

DOCKET NO. IP-6853/WS-10-1240, AND IP-6866/WS-11-831

Date……September 30, 2014
EERA Staff: Suzanne Steinhauer .....(651) 539-1843

In the Matter of the Application of Black Oak Wind, LLC for a Site Permit for a 42 Megawatt Large Wind Energy Conversion System in Stearns County, Minnesota

In the Matter of the Application of Getty Wind Company, LLC for a Site Permit for a 40 Megawatt Large Wind Energy Conversion System in Stearns County, Minnesota

Issues Addressed: Petition for Permit or Amendment to the Black Oak Wind And Getty Wind large wind energy conversion system site permits and appropriate conditions.

Attachments: Attachment 10-1240-1, Black Oak Site Map
Attachment 11-831-1, Getty Site Map

Additional documents and information can be found on http://mn.gov/commerce/energyfacilities/Docket.html?Id=30578 (Black Oak), http://mn.gov/commerce/energyfacilities/Docket.html?Id=32297 (Getty) or on eDockets http://www.edockets.state.mn.us/EFilin/search.jsp (10-1040 or 11-831).

This document can be made available in alternative formats; i.e. large print or audio tape by calling (651) 539-1530.

Introduction and Background

On January 28, 2013, the Minnesota Public Utilities Commission (Commission) issued a site permit to Black Oak Wind, LLC (Black Oak) to construct, own, operate, maintain, and manage a 42 megawatt (MW) nameplate capacity Large Wind Energy Conversion System (LWECS) and associated facilities in Stearns County (Black Oak Project).[1] On the same day, the Commission also issued a site permit to and Getty Wind Company, LLC (Getty) to own, operate, maintain,

[1] Commission, *Findings of Fact, Conclusion of Law, and Order Issuing a Site Permit to Black Oak Wind, LLC for the Black Oak Wind Farm*, January 28, 2013, eDockets Document ID 20131-83253-01 (Herein after, *Black Oak Permit Order*)

and manage a 40 MW nameplate capacity LWECS and associated facilities in Stearns County (Getty Project).[2]

On September 19, 2014, Black Oak and Getty (permittees) jointly filed a Petition for Modification or Amendment to the site permits for the Black Oak Project and Getty Projects. The petition requested modifications to the site permits to allow the use of a different type and size wind turbine generator for the projects than those specified in the existing permits.[3]

On September 23, 2014, the Commission issued a notice soliciting comments on the modification or amendment to the permits requested by Black Oak and Getty and any conditions that should be required should the modification or amendment be approved.[4]

Regulatory Process and Procedures

Siting of Large Wind Energy Conversion Systems are governed by Minnesota Statutes, §216F. Minnesota Statutes 216F.03 states:

> "The legislature declares it to be the policy of the state to site LWECS in an orderly manner compatible with environmental preservation, sustainable development, and the efficient use of resources."

Minnesota Rules, part 7854.1000, subpart 1, directs the Commission to make a final site permit decision based on the record that has been compiled in the matter. Minnesota Rule, part 7854.1000, subpart 3, requires that the Commission determine that:

> "…the project is compatible with environmental preservation, sustainable development, and the efficient use of resources, and the applicant has complied with this chapter."

Minnesota Rules, part 7854.1300, subpart 2, states that:

> "The Commission may amend a site permit for an LWECS at any time if the commission has good cause to do so."

EERA Staff Analysis and Comments

Because the Commission found in its initial permit decisions that the projects are compatible with environmental preservation, sustainable development and the efficient use of resources, it would appear that any permit amendment should also meet those standards. To that end, the Department of Commerce Energy and Environmental Review and Analysis (EERA) staff focused its analysis on Project changes that could substantially change the findings

[2] Commission, *Findings of Fact, Conclusions of Law, and Order Issuing a Site Permit to Getty Wind Company, LLC for the Getty Wind Project*, January 28, 2013, eDockets Document ID: 20131-83254-01 (Herein after, *Getty Permit Order)*
[3] Petition for Modification or Amendment to Site Permits, September 19, 2014, eDockets ID: 20149-103164-02 (Black Oak), 20149-103164-01 (Getty)
[4] Notice of Comment Period, September 22, eDockets ID: 20149-103216-02 (Black Oak), 20149-103216-01 (Getty)

accompanying the Commission's original permit decisions, and potentially change the Commission's determination that the projects are compatible with the standards set out in Statute and Rule.

The September 19, 2014, petition references several items filed by the permittees in requirement of preconstruction conditions. EERA staff is currently reviewing the preconstruction filings and has provided the permittees with a number of comments on the filings to date. EERA staff believes that the information contained in the filings at this time are sufficient to assess the compatibility of the projects as amended with environmental preservation, sustainable development, and efficient use of resources, and the following comments are based on staff's review of those filings.

Permittees' Requested Change

Because Black Oak and Getty have selected the Vestas V110 2.0 MW wind turbine for this project, rather than the 1.5 MW, 1.8 MW, or 3.0 MW wind turbine as stated in the permit,[5] Black Oak and Getty have requested a modification of Section 1 [Project Description] to reflect the wind turbine model that will be used. Because the language in the existing permits differs somewhat between the Black Oak and Getty permits, the proposed modifications differ somewhat between permits.

For Black Oak:

> The up to 42 MW nameplate capacity LWECS authorized to be constructed in this Permit (Black Oak Wind Farm) will be developed and constructed by the Permittee. The Project will consist of up to ~~28 1.5 Megawatt (MW) wind turbine generators, up to 22 1.8 MW wind turbine generators, or up to 13 3.0 MW~~ 21 Vestas V110 2.0 MW wind turbine generators mounted on towers with a height of ~~262 to 328 feet (80 to 100 meters)~~ 262 feet (80 meters) towers having a combined nominal nameplate capacity of up to 42 MW. The rotor diameter is ~~285 to 367 feet (87 to 112 meters)~~ 361 feet (110 meters). Associated facilities will include…

For Getty:

> The up to 40 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 ~~23 Goldwind 87 1500 1.5 MW wind turbine generators (turbines), up to 21 Report MM100 1.8 MW turbines, or up to 13 Vestas V112 3.0 MW turbines~~ 20 Vestas V110 2.0 MW turbines. The Permittee may modify the turbine selection with the Minnesota Public Utilities Commission's (Commission) approval. The rotor diameter is ~~285 to 367 feet (87 to 112 meters)~~ 361 feet (110 meters). Associated facilities will include . . . .

EERA Staff Comments. Selection of the Vestas V110 2.0 MW wind turbine for the project does not affect the ability of the project to comply with site setback requirements and site layout

[5] Section 1 of the Black Oak permit specifies only turbine sizes, while Section1 of the Getty permit specifies size, manufacturer and model.

restrictions in the amended site permit. Staff believes the turbine modification request is appropriate and reflects an industry trend toward use of turbines with larger rotor diameters.

Based on a staff review of all the major project characteristics, permit requirements and other factors, staff believes use of the Vestas V110 2.0 MW wind turbine on an 80 meter tower remains compatible with environmental preservation, sustainable development, and the efficient use of resources.

Staff has reviewed the preliminary turbine layout provided for the Vestas V110 2.0 MW wind turbine as shown in the preconstruction site plans and finds that all turbines are within the project boundaries as identified in the site permits.[6] The Vestas V110 turbine layout shown in the preconstruction drawings also complies with and meets setback requirements and site layout restrictions identified in Sections 1 – 12 of the site permits. EERA staff is seeking comment from Stearns County to ensure that the proposed layout meets the Stearns County standards identified in Sections 13.1(d) (shoreland overlay districts) and 13.5 (project substation setbacks) of the permits.

Staff reviewed the sound (noise) modeling results provided in the revised site plans filed on September 17 , 2014, for the Vestas V110 turbine and finds that the sound pressure levels modeled at each of the 204 receptors within the Project area are within the allowable limits under the Minnesota Pollution Control Agency (MPCA) Noise Standards (Minnesota Rules, Chapter 7030). [7] Noise modeling results show a maximum predicted noise level of 45 dBA, within the range of predicted noise in the findings supporting the Commission's 2013 permit decision.[8] The maximum estimated noise level for the Black Oak Project was 43.6 to 45 dBA, depending upon turbine models, at the nearest noise sensitive receptor. The maximum estimated noise level for the Getty Project was 41.7 to 46.5 dBA, depending upon turbine models, at the nearest noise sensitive receptor.

Staff also reviewed the Technical Memorandum regarding calculation of Shadow Flicker filed for the projects on August 26.[9] Shadow flicker is defined as the modulation of light levels resulting from the periodic passage of a rotating wind turbine blade between the sun and a viewer. The duration of shadow flicker experience at a specific location can be determined using a purely geometric analysis which takes into account the relative positions of the sun throughout the year, the wind turbines at the site, and the viewer. As summarized in the technical memorandum, shadow flicker was calculated at 198 receptors.[10] Of the 198 receptors selected, the participating receptor that is predicted to experience the most hours of shadow flicker in one year is receptor 15. The predicted duration of shadow flicker at this receptor is 36.2 hours per year, with an average of approximately 6 minutes per day under a base case scenario. The non-

[6] Revised Site Plans, September 17, 2014, eDockets Document ID: 20149-103137-01, 20149-103137-03, 20149-103137-05, 20149-103137-07, 20149-103137-09, 20149-103137-11

[7] HDR Engineering Inc., *Noise Technical Report: Black Oak Wind Farm and Getty Wind Farm*, September 16, 2014, eDockets, Document ID 20149-103137-01 (Black Oak), 20149-103137-02 (Getty)

[8] *Black Oak Permit Order*, (see finding 56, estimating noise levels), and *Getty Permit Order (*see Finding 55, estimating a maximum noise level)

[9] Black Oak and Getty, *Shadow Flicker Analysis*, August 21, 2014, eDockets, Document ID 20148-102552-01 (Black Oak) and 20148-102552-02 (Getty)

[10] EERA staff has requested clarification from Black Oak and Getty on whether the 198 receptors represents all residences within the site boundaries of both projects or whether some other criteria was used to select the receptors.

participating receptor with the highest predicted shadow flicker has a predicted shadow flicker of 25.5 hours per year, and an average of approximately 6 minutes per day. This is within the range of the estimated flicker for the Black Oak Project of up to 36.5 hours per year (average of 1.3 to 2.7 hours per year) and the Getty Project of up to 42.5 hours per year (average of 1.1 to 2.1 hours per year) considered in the Commission's original permit decisions.[11]

The requested amendments do not adjust the original nameplate capacities for the projects - up to 42 MW for the Black Oak project and up to 40 MW nameplate capacity for the Getty project. Staff notes that the layout information provided by the permittees to date anticipate a 40 MW nameplate capacity (20 turbines) for Black Oak and 38 MW nameplate capacity (19 turbines) for Getty. Staff does not believe that the discrepancy between the larger nameplate capacity and the apparent intended nameplate capacity is a problem, but wishes to note for the record that permittees would need to provide additional filings prior to construction should they wish to add additional turbines to meet the four MW discrepancy between the anticipated layout and permitted capacity.

Additional EERA Suggested Changes

In addition to the modifications requested by the permittees, EERA staff proposes amendments to Section 2.2, 4.9 and 11.5 of the permits to:

- incorporate an updated map showing anticipate layout in the permit;
- maintain consistency in tower height between Sections 1 and 4.9; and
- incorporate a requirement that permittees notify the Commission of ownership at the time that operation commences and any changes in ownership throughout the term of the permit.

Section 2.2 Turbine Layout

Section 2.2 of the existing permits references preliminary layouts as shown in maps in Attachments 1a-c of the permit.

EERA Staff Comments: As discussed in their amendment petition, Black Oak and Getty have now settled on a turbine model and appear to have a well-developed layout. On September 26, Black Oak and Getty filed revised site plans that, among other changes, include turbine layouts separated by project. EERA staff recommends that Attachment 10-1240-1 (Black Oak Site Map) and Attachment 11-831-1 (Getty Site Map), excerpted from the recent Black Oak and Getty filings and included in this filing for convenience, be included as Attachment 1 to each permit, replacing Attachments 1a-c.

EERA staff also recommends that Section 2.2 of the site permits be modified as follows to incorporate the updated maps:

[11] *Black Oak Permit Order*, see finding 61, *Getty Permit Order*, see Finding 60

Black Oak Permit:

2.2 TURBINE LAYOUT

Three preliminary wind turbine and associated facility layouts are shown on maps at Attachment~~s~~ 1~~a, 1b, and 1c~~. ~~Each~~ The 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 of the Project, 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 make 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 the 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.

Getty Permit:

2.2 TURBINE LAYOUT

A preliminary ~~Preliminary~~ wind turbine and associated facility layout~~s~~ is ~~are~~ shown on the map at Attachments 1~~a-c~~. The preliminary layout~~s~~ represents the approximate location of wind turbines ~~of the types and sizes under consideration~~ and associated facilities within the Project boundary and identify a layout~~s~~ that minimize the overall potential human and environmental impacts of the Project, 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 make 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 to a preliminary layout shall be done in such a manner 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 4.9 Wind Turbine Towers

As their present form the permits for the Black Oak and Getty projects allow for towers of up to 100 meters (328 feet).

EERA Staff Comments. Although not proposed by the permittees, EERA recommends that Section 4.9 of the permits be modified to the anticipated 80 meter tower proposed by the permittees in order to ensure consistency with the project as described in Section. EERA staff proposes the following modification for both permits:

4.9 Wind Turbine Towers

Structures for wind turbines shall be self-supporting tubular towers. The towers may be up to 80~~100~~ meters (262~~328~~ feet) above grade measured at the hub.

Section 11.5 Transfer of Permit

Section 11.5 of the permits requires permittees to notify the Commission in advance of any desired transfer of the permit.

EERA Staff Comments: Since the issuance of these permits in January of 2013, the Commission has refined the language of this section of the permit to require notice of ownership of the project throughout the term of the permit. EERA staff proposes the following changes to Section 11.5 of the permits (new or revised text is underlined and is consistent with the recently issued Odell permit).

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.

Within 20 days after the date of the notice provided in Section 8.4, the Permittee shall file a notice describing its ownership structure, identifying, as applicable:
(a) the owner(s) of the financial and governance interests of the Permittee;
(b) the owner(s) of the majority financial and governance interests of the Permittee's owners; and
(c) the Permittee's ultimate parent entity (meaning the entity which is not controlled by any other entity).

The Permittee shall notify the Commission of:
(a) A change in owner(s) of the majority* financial or governance interests in the Permittee;
(b) A change in owner(s) of the majority* interest financial or governance interests of the Permittee's owners, or,
(c) A sale which changes the parent entity of the Permittee.

* When there are only co-equal 50/50 percent interests, any change shall be considered a change in majority interest.

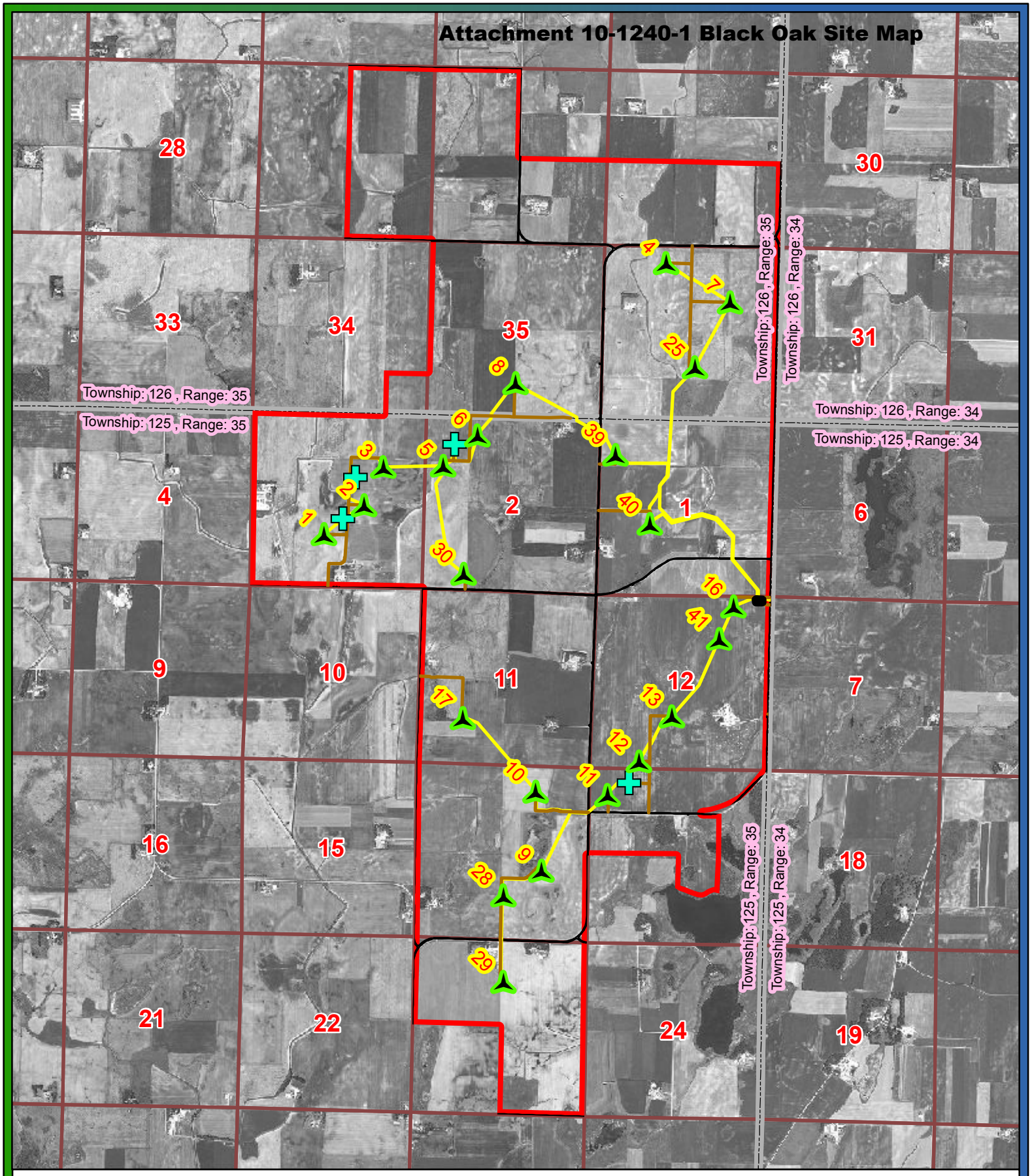
The Permittee shall notify the Commission of:
(a) The sale of a parent entity or a majority interest in the Permittee,
(b) The sale of a majority interest of the Permittee's owners or majority interest of the owners, or,
(c) A sale which changes the entity with ultimate control over the Permittee.

EERA STAFF RECOMMENDATIONS

Staff recommends that the Commission approve the proposed permit amendments requested by Black Oak and Getty and as modified or proposed by staff as described above for:

1. Permit Introduction, Section 1 [Project Description]
2. Section 2.2 [Project Description]
3. Section 4.9 [Wind Turbine Towers]
4. Section 11.5 [Ownership notification]

Attachment 10-1240-1 Black Oak Site Map



Turbine
Met Tower
Project Substation
Access Road
Electric Collection System
Public Roads
Black Oak Project Boundary

N

GERONIMO ENERGY

0 0.25 0.5 1 Miles

SOURCES: Geronimo Energy, Westwood, EVS, MNDOT, Ventyx, NAIP, MNDNR

Stearns County

Black Oak Wind Project Layout

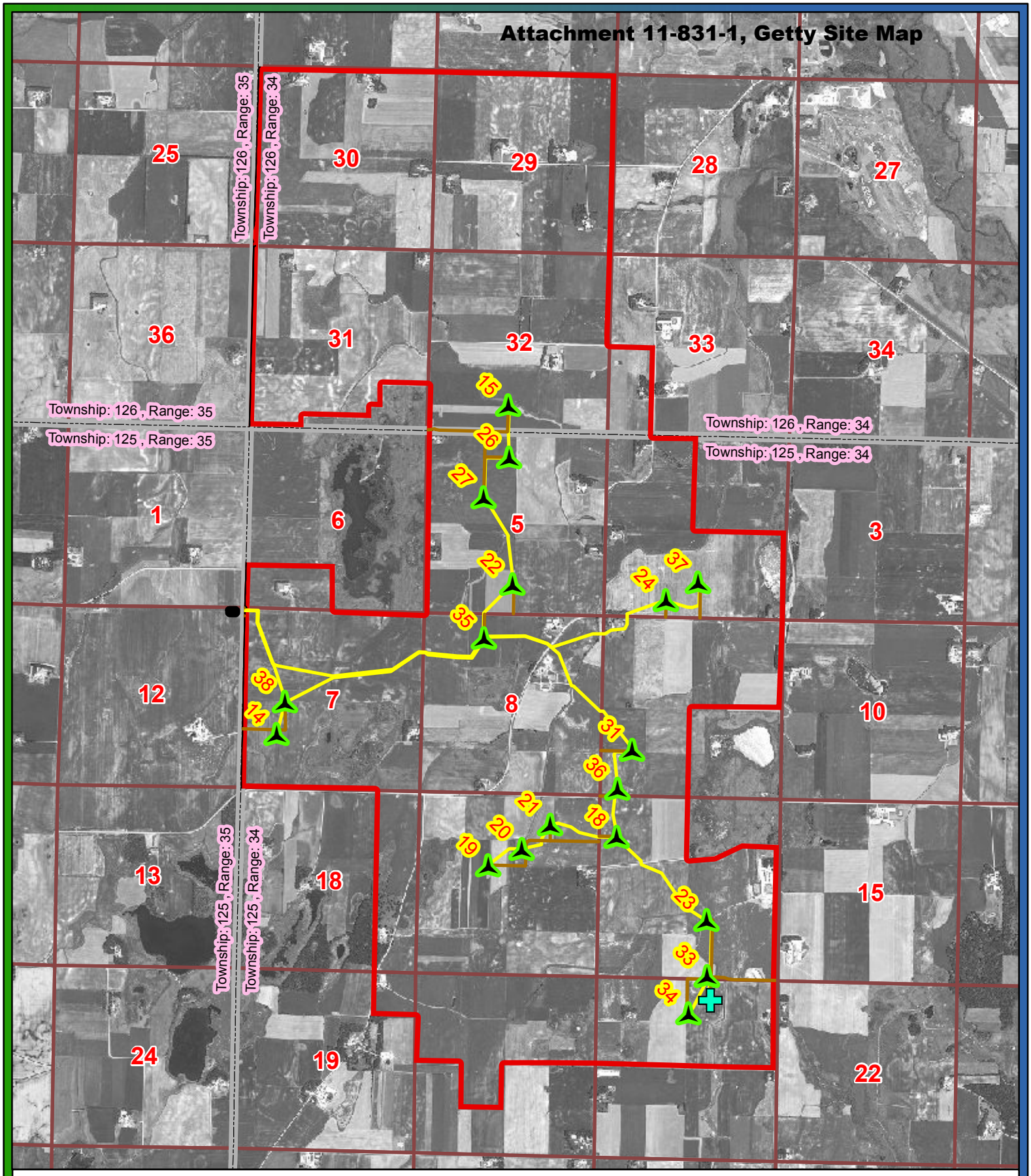
BLACK OAK WIND FARM

Stearns County, MN

Document Path: G:\GISData\Projects\Black Oak Wind Farm\Projects\BO_Project Maps_09262014.mxd

cjenson Date: 9/26/2014

Attachment 11-831-1, Getty Site Map



Turbine
Met Tower
Project Substation
Access Road
Electric Collection System
Public Roads
Getty Project Boundary

N

GERONIMO ENERGY

0 0.25 0.5 1 Miles

SOURCES: Geronimo Energy, Westwood, EVS, MNDOT, Ventyx, NAIP, MNDNR

Stearns County

Getty Wind Project Layout

GETTY WIND FARM
Stearns County, MN

Document Path: G:\GISData\Projects\Black Oak Wind Farm\Projects\GY_Project Maps_09262014.mxd

cjenson Date: 9/26/2014