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March 5, 2014

North Dakota Public Service Commission  
Public Utilities Division  
600 E Boulevard Ave, Dept. 408  
Bismarck, ND 58505-0480



Subject: Bison 1 Wind Project  
Case No. PU-09-151  
Final Construction Inspection

Attn: Mr. Jerry Lein  
North Dakota Public Service Commission

Mr. Lein,

This letter is written in response to the North Dakota Public Service Commission's (PSC) letter sent to Minnesota Power on February 12, 2014. The PSC letter was in regards to the Bison 1 Wind Project's (PU-09-151) Post Construction Report prepared by Wenck Associates, Inc. 301 1<sup>st</sup> Street NE, Suite 202, Mandan, ND 58554 in January 2013.

The following is an excerpt from the PSC letter sent to Minnesota Power on February 12, 2014 that lists each specification requiring elaboration from Minnesota Power:

*As per the post construction inspection report, the following actions should be undertaken with information documenting these actions provided to the Commission:*

- *Compliance with National Electric Safety Code. (Order Point 9)*
- *Reports of cultural, archeological, historical resources found, if applicable. (Order Point 11)*
- *A 2014 Tree and Shrub Survival Report will be due in late 2014. (Order Point 17)*
- *Educational materials for landowners or the public. (Order Point 23)*

Minnesota Powers response to each project specification is as follows:

Specification:

- *Compliance with National Electric Safety Code. (Order Point 9)*

MP Response:

- ✓ Minnesota Power contracted Black and Veatch for the project's electrical design. Included as Attachment A is an excerpt from Minnesota Power's contract with Black and Veatch which specifies that the design must comply with NESC standards.

Specification:

- *Reports of cultural, archeological, historical resources found, if applicable. (Order Point 11)*

MP Response:

- ✓ No new cultural, archeological or historical resources were found during construction. Minnesota Power performed extensive cultural, archeological and historic surveys prior to beginning construction and any resources identified were avoided. Copies of the preconstruction surveys can be found in the PSC docket.

Specification:

- *A 2014 Tree and Shrub Survival Report will be due in late 2014. (Order Point 17)*

MP Response:

- ✓ Minnesota Power will be filing a 2014 Tree and Shrub Survival Report in the fourth quarter of 2014 after survival surveys are completed.

Specification:

- *Educational materials for landowners or the public. (Order Point 23)*

MP Response:

- ✓ Each affected landowner had an in person meeting with Minnesota Power project personnel to review how the project was going to impact their land specifically and answer any questions. After Minnesota Power's extensive approach of notifying and educating landowners prior to beginning construction activities, no landowner requested additional educational materials.

If any additional information is required by the ND PSC please let me know.

Respectfully submitted,



Daniel McCourtney  
Minnesota Power  
Siting and Permitting

Cc. T. Coughlin, D. Moeller, J. Atkinson, M. Freudenrich (electronically)

**Attachment A**

Excerpt from Minnesota Power's Contract with Black and Veatch

Two types of access roads will be designed. Type 1 will be turbine access roads that include additional compacted shoulders for erection crane travel. Type 2 will be access roads that meet Morton County standards.

#### **Stormwater Design.**

Based on the site requirements for foundation and road placement, a storm water management plan will be developed to meet the project's permitting requirements. Black & Veatch would determine storm water requirements by meeting with state and local officials (or would be provided this information if already determined by Minnesota Power). The storm water management system is likely to consist of a series of open channels, culverts, and overland flow to maintain existing flow patterns as much as possible. .

#### **Collection System/Communications System Layout and Design**

Based on the project requirements, the design of a 34.5 kV underground collection system is required to connect sixteen (16) 2.3 MW and seventeen (17) future 2.3 MW wind turbines that will feed into the proposed collector substation.

Minnesota Power will provide Black & Veatch an approved constraints map indicating the locations of 33 wind turbines and proposed substation layout. In addition to the constraints map, northing and easting coordinates will be provided for the proposed turbine locations to assist in the route analysis. Black & Veatch will then proceed with determining a preliminary collection system route layout that will optimize the use of both an underground cable system and overhead transmission line corridor. Black & Veatch will conduct a site visit to visually determine road crossings, potential jack and bore locations and any horizontal directional drills that will be required.

Once the preliminary route has been identified, optimized, and finalized to provide a system that is economic, physically feasible and constructible, reliable and able to meet the project's life expectancy, Black & Veatch will then conduct a complete cable ampacity study using CYMCAP to determine the appropriate optimized cable based on the determined thermal resistivity of the soil and various site conditions. Once the ampacity study is complete and cable sizes have been determined, Black & Veatch will calculate the final cable lengths.

Black & Veatch will prepare a final collection system route layout based on Minnesota Power approved results of the ampacity and system flow studies. Black & Veatch will then prepare the following collection system drawings:

- System One-Lines
- Site and Sectionalized Plan Views
- Trench Section Details
- Grounding and Conduit Details
- Component Details
- Overhead Details

Clearances, spacings and heights of the system are determined to meet safety requirements (NESC). Minnesota Power's standard details will be used wherever possible.

Minnesota Power standards and existing information about the proposed current and past communication systems will be reviewed. The SCADA system will be designed to include a server in the Operation and Maintenance building and an RTU located in the control building of the collector substation. A communication block diagram will be prepared along with a fiber