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PUBLIC SERVICE COMMISSION

North Dakota Public Service Commission
Darrell Nitschke
Executive Secretary
600 E. Boulevard Avenue Dept. 408
Bismarck, ND 58505-0489

Re: Case No. PU-05-47 Contract No. PU-599-10
Rugby Wind, LLC (PPM Energy, Inc.)
Wind Farm in Pierce County, ND

Dear Mr. Nitschke,

The State of North Dakota, acting through its North Dakota Public Service Commission (NDPSC), Division of Public Utilities, has engaged Keitu Engineers & Consultants, Inc. to perform consulting services for post-construction siting inspections. A final report was sent to you electronically via email. Enclosed is an original and copy of the final report for the post-construction inspection of Case No. PU-05-45.

The Executive Summary identifies items that still need attention by the Commission staff and siting applicant to ensure that the facilities for the project have been constructed in compliance with items identified by the ND Public Service Commission. Once these items are addressed, the Commission can act on final closeout of the construction phase of the project.

Should Commission staff or the NDPSC have any questions, please contact me for assistance.

Sincerely,



Timothy Spilman
Project Manager

Enclosures

162 PU-05-47 Filed: 1/27/2012 Pages: 36
Final report for post-construction siting inspections



**Rugby Wind, LLC (PPM Energy, Inc.)
150 MW Wind Farm
(Pierce County, ND)**

Prepared by Timothy Spilman, Project Manager, Keitu Engineering & Consultants, Inc.
Final Report

Executive Summary

Rugby Wind, LLC stated in its application that PPM will file a ten-year plan with the Commission by July 2005. No record of a ten-year plan is on file with the Commission based on a search of the Commission's website. Rugby Wind, LLC is to submit a ten-year plan annually to the Commission. Rugby Wind, LLC should submit a ten-year plan as stated in their application as part of completion of Order #5.

The hub height of a turbine is 259.12 feet and the turbine has a maximum height of 403.44 feet based on the hub height and ½ the rotor diameter. Since the turbine structures are over 200 feet in height, FAA notice and approval are required. The FAA is to approve the lighting and marking of turbines prior to erection of a tower. No documentation of FAA notice or approval was found in the case file. Rugby Wind should provide documentation to the Commission that approval was obtained from the FAA prior to erection of a tower. The weekly progress report (Docket #130) of June 27, 2009 identified the first 3 turbines were completed that week. The FAA notice and approval should be dated prior to that week of construction. Rugby Wind is to also file final construction as-built information with the FAA. No record is found of the notice of actual construction or alteration to the FAA. Since turbine structures were changed to Suzlon 2.1 MW S88 turbines in August 2008, Rugby Wind, LLC should provide the Commission documentation that a notice of actual construction or alterations was submitted to the FAA as part of Order #5.

Recommendations of the ND Energy Council were to be guidelines and were not followed entirely for this project. The ND Wind Energy Council is a trade association that provided recommendations for consideration and is not a requirement.

Pierce County Zoning Regulations were established for wind generation facilities in the County with turbines tower heights up to 300 feet. All turbines meet the height requirements. Three turbines were located within the 300 feet from a non-established road right-of-way. Turbine J-2 is approximately 100 feet from the section line to the west (34th Ave NE), turbine A-6 is approximately 170 feet from section line to the east (30th Avenue NE), and turbine C-4 is approximately 90 feet from the section line to the south (77th Street NE). Rugby Wind should provide to the Commission a variance or obtain a variance from the County for these turbines as



they are within 200 feet of the property line (section line) and the non-established road right-of-way 300 feet as part of completion of Order #5.

According to the application, Pierce County required the collection system to be underground. PPM desired the flexibility to use aboveground collection lines to cross a steep gully, for example. PPM also desired the flexibility to use an aboveground collection system when collecting energy from strings of turbines over five miles away. PPM constructed a 34.5 kV single circuit overhead transmission line within the wind farm. PPM should provide a copy of the variance to construct an overhead transmission collector line as part of this project to the Commission for its case file as part of Order #5.

According to the weekly progress reports the wind farm construction started on in November of 2008 (Docket #107). Construction ended in December of 2008 for that year. Construction work started again in May of 2009 and continued into December of 2009. Therefore, construction occurred during breeding season. No record was found in the case file that the USFWS was notified of construction during breeding season or that a biologist was on site during construction breeding season. Rugby Wind LLC (PPM) did not follow the USFWS recommendation or their application statement of not construction during breeding season as required for part of Order # 5.

According to the application (Docket #10) on page 71/276 in section 7.15.2 Impacts, impacts to grassland easement area will be limited to one turbine per quarter-section as per request of by the USFWS. The as built drawings and observation during the post construction inspection verified that more than one turbine was installed per quarter-section in grassland areas. This request was not followed but the Commission approved the location of the turbines prior to construction.

In reviewing the application and Exhibit 8 (Docket #40) for potential permits and approvals required for construction and operation of the proposed facility, no utility permits for crossing a highway in the state were listed as a requirement. The project layout shows the wind project on both sides of State Highway 17. Utility permits were required each time the collection system and the communication lines crossed the highway. No record was found in the case file for these utility crossing highway permits. Rugby Wind, LLC should provide copies of the utility highway crossing permits to the Commission for the case file as part of Order #5.

No records of the Class III Cultural Resources Inventory Reports were found in the case file. Rugby Wind, LLC should provide the Commission a copy of "Class III Cultural Resources Inventory for Rugby Wind Farm Project, Pierce County, North Dakota," by Erika Palmer and Michael Madson (HDR Engineering, March 2006) and "Supplemental Class III Cultural Resources Inventory for Rugby Wind Farm Project, Pierce County, North Dakota," by Michael A. Justin, Stephen Sabatke, and Rod Johnson (HDR Engineering, April 2009) as part of Order #5.

PPM should provide the Commission weekly progress reports for April/May 2010 final civil restoration as stated in their progress report of December 19, 2009. Once construction started,



weekly progress reports were sent to the Commission updating construction activities. Once the weekly progress reports for civil restoration are provided, Order # 7 was followed and is complete.

On a site visit November 22, 2004, USFWS staff observed a large nest structure in T157N, R72W, Section 1, SW 1/4. PPM consultants conducted a 2005 spring survey and found Canadian goose in the nest. PPM said they would not locate a tower within one mile of the nest structure to create a buffer area and considered it a no disturbance area to minimize impacts to the nesting birds. The as built drawings and post construction visit identified turbines S-4 and S-5 in the NE ¼ of Section 1, T157N, R72W. Since these turbines are in the same section they are located closer than one mile and therefore a buffer zone of less than 1 mile. PPM did work with USFWS on siting of turbines. The Canadian goose is not a raptor, threatened or endangered species.

No record was found in the case file for Commission review of the estimated decommissioning cost per turbine and a comprehensive decommissioning plan that describes how the facility or turbine owner or operator plans to pay for decommissioning. Rugby Wind, LLC should provide this information to the Commission as part of their responsibility to the fulfillment NDAC 69-09-09 that became effective October 1, 2008 as part of Order #15.

No documentation was found in the case file identifying the actual number, variety; type, location, and date of the tree replacement planting. PPM grouped the tree replacement and monitoring together for the wind farm with the 230 kV transmission line constructed in Case No. PU-05-305. The tree replacement and monitoring information has been filed in case no. PU-05-305 in Docket #123 and #127. The Commission should copy this information from Case no. PU-05-305 to Case file no. PU-05-47.

Some new tree plantings were observed during the post construction field inspection. After the second year of three years of monitoring there is a 93.6% survival rate. PPM needs to submit the third year of monitoring in 2012 and the survival rate. The Commission may order additional plantings if survival rates are less than 75%. Once the third year tree monitoring is submitted to the Commission in 2012, the Commission can rule on Order #16.

UG Communication or collector lines trenches could cut through drain tile if installed in lower elevation areas. Rugby Wind, LLC should provide evidence or a letter of correspondence to the Commission that no drainage tile was found, broken or damaged to complete Order #18.

No record was found in the case file of a landowner requesting educational materials for landowners within the site boundaries about the proposed energy conversion facility, and any restriction or possible danger concerning the proposed energy conversion. The Commission should request a copy of the educational materials for landowners that Rugby Wind, LLC has available should a landowner request educational materials in the future. Rugby Wind, LLC



should provide a copy of these materials as verification that they have educational informational materials available and can provide it should a landowner ever request it. The educational material provided would complete Order #22.

Iberdrola Renewables should provide a final report for the wind turbine generator G-1 rotor assembly failure on March 14, 2011 and a drawing of the hub to shaft assembly as stated in their testimony during the April 6th, 2011 hearing. The Commission should request any information Iberdrola has documented on dead birds or bats due to the wind farm. Once this information is obtained and reviewed by the Commission, Order #24 can be completed as of the post construction inspection.

The Commission should request a copy of the written procedure or a letter stating how complaints concerning the energy facility were handled or would have been handled if a complaint had occurred. Once PPM provides this procedure, Order #25 is complete.

Based on the December 3, 2008 email (Docket #14) of turbine relocation to the Commission, Rugby Wind, LLC did not obtain approval from the Commission or Commission staff prior to any changes in structure locations. Dennis Kuhns of Iberdrola Renewables stated that 7 turbines had been relocated by December 3, 2008. The Commission's approvals of these relocations were approved on January 8, 2009. Order #27 was not followed.

During the post construction field inspection it was noted that some of the locations were different on the as built maps (Dwg No. RUG-E-510-01 to RUG-E-510-21 of Docket #122) compared to what was constructed in the field. The following items were noted:

- The road between turbine E2 and E3 is not constructed in the location of the as-built drawing RUG-E-510-07.DWG. The constructed north/south road is 800 feet east of the as built map. The overall as built Civil Site Plan has the as built drawing correctly. The new location of the road should have a cultural inventory completed prior to construction of the road and Rugby Wind should submit this documentation to the Commission.
- The road into turbine A5 from 78th Street was constructed 380 feet east of the as built drawing RUG-E-510-01.DWG. The overall as built Civil Site Plan has the as built drawing correctly. The new location of the road should have a cultural inventory completed prior to construction of the road and Rugby Wind should submit this documentation to the Commission.
- The road from G6 to G7 comes to G7 more from the south than in as built Drawing RUG-E-510-12.DWG. Original Class III Cultural resources inventory would have covered this change.

These three access roads as built drawings should be corrected to its proper constructed location and resubmitted to the Commission for their case file as part of completion of Order #28.

On June 21, 2010 PPM (Rugby Wind, LLC) provided the Commission design specifications and final drawings for as built (Docket #122). No as built drawing was submitted for wind turbines



S-4 and S-5 in Township 157 North, Range 72 West, Section 1. PPM must submit an as built drawing for this section to complete part of Order #28.

Rugby Wind, LLC (PPM Energy, Inc) complied with all other Order requests of the Commission.

Preliminary Statement

PPM proposes to construct and operate a wind energy facility (the Rugby Wind Farm) to be located in Pierce County, North Dakota approximately 4 miles north of the city of Rugby. The proposed capacity of the wind energy facility would be 150 megawatts (MW) comprised of up to 100 turbines, each with a capacity of 1.5 to 3.0 MW.

PPM proposes to locate the Rugby Wind Farm on an area of land comprised of approximately 46,000 acres of privately owned and state land in Pierce County, North Dakota. The proposed Rugby Wind Farm and its related supporting facilities would occupy and disturb approximately 50 to 70 acres of land during the life of the plant. The proposed Rugby Wind Farm is located in an area that is zoned exclusively for agricultural use, most of which is planted with small grains and grasses under the United States Department of Agriculture Conservation Reserve Program (CRP), or pasture with native grasses. The facility would have little or no impact on farm operations.

The State of North Dakota, acting through its North Dakota Public Service Commission (NDPSC), Division of Public Utilities, has engaged Keitu Engineers & Consultants, Inc. to perform consulting services for post-construction siting inspections. This report addresses the Orders established by the NDPSC and issues established in File No. PU-05-47.

Rugby Wind, LLC (PPM Energy, Inc) complied with all other Order requests of the Commission.



The Commission orders:

- 1. Certificate of Site Compatibility No. 5 for an Energy Conversion Facility is issued to PPM for the construction, operation and maintenance of a wind energy facility known as the Rugby Wind Farm.**

On October 3, 2005 the Commission issued Certificate of Site Compatibility for Energy Conversion Facility Certificate Number 5 (Docket #86). On September 12, 2008 the Certificate of Site Compatibility for Energy Conversion Facility Certificate Number 5 was amended to a first Reissued Certificate (Docket #103) due to a name change. On December 3, 2008 the Commission amended the corrected First Reissued Certificate recognizing a name change to "Rugby Wind, LLC" not Iberdrola Renewables, Inc. (Docket #116). The certificate certified that the Commission designated an energy conversion facility site for the Rugby wind farm comprised of 46,080 acres, more or less in:

Township 157 North, Range 71 West

Sections 5, 6, 7 and 8

Township 157 North, Range 72 West

Sections 1-12

Township 157 North, Range 73 West

Sections 1 and 12

Township 158 North, Range 71 West

Sections 5, 6, 7, 8, 17, 18, 19, 20, 29, 30, 31 and 32

Township 158 North, Range 72 West

Sections 1-36

Township 158 North, Range 73 West

Sections 1, 12, 13, 24, 25 and 36

The facility may be sited in this designated location in compliance with the energy conversion facility siting criteria. The certificate was issued in accordance with the Findings of Fact, Conclusions of Law and Order of the Commission in Case No. PU-05-47 dated October 3, 2005, and is subject to the conditions and limitations noted in the order. The as built facility site was constructed within the description approved in the Certificate. Order #1 is complete.

- 2. The site described in the Application is located approximately 4 miles north of Rugby, North Dakota, and is designated as the site for construction of the energy conversion facility.**

Wind facility siting is a process through which input is considered from several different entities. When considering where to locate the wind farm in North Dakota, PPM (Rugby Wind, LLC) originally identified four study areas. These study areas were identified based on expected wind resource and transmission availability. They conducted a "fatal flaw" analysis for the top two



study areas. The fatal flaw analyses looked at environmental conditions at each study area and also further assessed wind resource and transmission. The Rugby study area was identified as an optimal site from environmental, wind resource, transmission, and economic perspectives.

Once a site was selected and secured, the next step in the process was to identify preliminary turbine locations based on initial site inspection, topographic maps, known environmentally sensitive areas, review of the North Dakota's power plant siting exclusion and avoidance areas, review of Pierce County wind siting requirements, and communications with Local, State and Federal agencies. These preliminary turbine locations were presented in this application for a Certificate and later relocated (Docket # 96, #97, and #101). Initially 100 turbines 1.5 MW were to be constructed. Seventy-one 2.1 MW turbines were finally constructed. The turbines were constructed within the proposed project site area defined in Figure 1 of the siting application and the Certificate of Site Compatibility which is located approximately 4 miles north of Rugby, ND. Therefore, Order #2 is completed.

3. Within the permitted area, PPM is authorized to site and construct up to 150 MW of wind turbines ranging in size from 1.5 to 3.0 MW as identified in the proposed and alternate locations map filed with the Commission on August 24, 2005, and electrical collection and communication lines, access roads, an operation and maintenance building, meteorological towers, and associated facilities identified in the Application for the Rugby Wind Farm.

On or about October 3, 2005, the North Dakota Public Service Commission entered its Findings of Fact, Conclusions of Law and Order in the above-referenced matter. In conjunction with that order, the Commission issued Certificate of Site Compatibility for Energy Conversion Facility Certificate No. 5.

At the time of the public hearing of this matter, the applicant Iberdrola Renewables (f/k/a PPM Energy, Inc.), intended to install 100 GE 1.5 MW turbines totaling 150 MW comprising the Rugby Wind Farm. In its permit application, Iberdrola Renewables evaluated the impacts of turbines ranging in size from 1.5 to 3 MW, and the permit as issued provided flexibility for that range of turbines. Iberdrola Renewables plans changed on August 14, 2008. They proposed a plan to install 71 Suzlon 2.1-MW S88 turbines, totaling 149.1 MW. This has resulted in the need for fewer locations and in some situations slight movement of the turbine locations. The Commission held an informal hearing on August 27, 2008 (Docket #104). Commission staff determined Order #3 provided flexibility to use the larger Suzlon 2.1 MW turbines and that the Commission only needed to approve the changes in turbine layout.

The "layout comparison map" showed the proposed location of the GE turbines and the proposed location of the Suzlon S88 turbines. The proposed locations for the Suzlon S88 turbines were approved as part of Order #27. On September 16, 2008 (Docket #105) the Commission sent



Rugby Wind, LLC a letter with the motion of September 10, 2008 that the proposed relocations were approved.

The Project site is approximately 46,080 acres (72 mi²) and the southern border of the site is located approximately four miles north of the City of Rugby, ND. The turbines were placed throughout the Project site. The Project site occupied less than one percent of the total land area. The locations for the Suzlon S88 turbines were located at or near to the original location map of August 24, 2005.

Land-use patterns and environmentally sensitive features were factored into the site selection criteria. The site boundary encompasses an area of approximately 46,080 acres. The amount of land for the 71 turbines and access roads was less than one percent of this area. The approximate acres of direct land use and miles of access roads were not identified with the change to 71 turbines.

The project was constructed within the permitted area with Seventy-one 2.1 MW turbines being constructed. Rugby Wind with Commission approval changed the number of turbines. Electrical collection lines, communication lines, access roads, an operation and maintenance building, meteorological towers, and associated facilities were constructed as identified in the Application. Therefore, Order # 3 was followed.

4. Mr. McIntire's request to move proposed turbine locations further from his property is denied.

In Docket #67 the Commission identified that the McIntire's met the requirement of North Dakota Century Code Section 28-32-28 by demonstrating that their legal rights, duties, privileges, immunities, or other legal interests were substantially affected by the Rugby Wind Farm proceeding.

The Commission ordered:

1. The correspondence received from J T McIntire is included in the record to demonstrate the McIntire's objection to the applications.
2. The petition to intervene in Case No. PU-05-47 was granted for the limited purpose of participation in the future proceeding or proceedings that were scheduled by the Commission for approval of turbine site locations and that participation be limited to the issues identified and raised by the Commission for those proceedings.

The Commission received correspondence and information from J T McIntire on August 2, August 9, and August 17 stating his opinions and opposition to the wind farm project. The Commission determined that this correspondence be included in the record to demonstrate the



McIntire's objection to the applications. On August 17, 2005 J T and Roberta McIntire filed a petition to intervene in Case Nos. PU-05-47 and PU-05-305. On August 23, 2005 PPM filed its response. The Commission granted the petition to intervene in Case No. PU-05-47 on September 7, 2005 limiting the intervention to participation in future proceedings by the Commission for the approval of turbine site locations and issues identified and raised during those proceedings.

On August 24, 2005 PPM filed proposed and alternate turbine locations and a letter addressing the same. A second Notice of Hearing was issued August 30, 2005 scheduling a hearing for September 26, 2005 at 10 a.m. CDT at the Pierce County Courthouse. The issue considered was whether PPM's proposed and alternative wind turbine locations should be approved. The hearing was held as scheduled.

J T McIntire appeared as an Intervener. Intervener, J T McIntire, opposed the project and any turbine locations near his property, which consists of approximately five acres in the NW ¼ of Section 12, T158N, R72W. Mr. McIntire testified that turbine noise and visual distractions could impede his ability to write professionally and to raise dogs on his property. He was concerned that flashing lights will impede his view of the night sky while turbine noises echo in the still of the night. Mr. McIntire suggested that turbines not be placed on hill tops to preserve the aesthetic integrity of the land and he specifically requests that turbine numbers 52 thru 56 and 45 thru 48 be moved further away from his property.

Mr. McIntire provided a picture of his property (Hearing Exhibit Number 14) that shows a thick screening of trees surrounding and insulating his house and property from the visual and audio turbine impacts. PPM revised its preliminary turbine locations to eliminate a location that was approximately 1,400 feet from Mr. McIntire's property. The closest turbine location proposed was turbine number 56 at a distance of approximately 3,600 feet from Mr. McIntire's property. At that distance, any noise that may be audible from the turbines would be far below the 50 dBA noise limit established by the Pierce County Commission. The Commission found that Mr. McIntire's request to move turbines further from his property was denied. The Commission found PPM's proposed and alternate turbine locations approved. The post construction inspection verified that no wind turbine was within 3,600 feet of Mr. McIntire's house. Order #4 was followed.

- 5. PPM shall comply with the rules and regulations of all other agencies having jurisdiction over any phase of the proposed energy conversion facility and shall obtain all other necessary approvals and permits, and shall provide copies of all approvals and permits to the Commission prior to the construction of the energy conversion facility.**

Rugby Wind, LLC stated in its application that PPM will file a ten-year plan with the Commission by July 2005. No record of a ten-year plan is on file with the Commission based on a search of the Commission's website. Rugby Wind, LLC is to submit a ten-year plan annually to



the Commission. Rugby Wind, LLC should submit a ten-year plan as stated in their application as part of completion of Order #5.

The hub height of a turbine is 259.12 feet and the turbine has a maximum height of 403.44 feet based on the hub height and $\frac{1}{2}$ the rotor diameter. Since the turbine structures are over 200 feet in height, FAA notice and approval are required. The FAA is to approve the lighting and marking of turbines prior to erection of a tower. No documentation of FAA notice or approval was found in the case file. Rugby Wind should provide documentation to the Commission that approval was obtained from the FAA prior to erection of a tower. The weekly progress report (Docket #130) of June 27, 2009 identified the first 3 turbines were completed that week. The FAA notice and approval should be dated prior to that week of construction. Rugby Wind is to also file final construction as-built information with the FAA. No record is found of the notice of actual construction or alteration to the FAA. Since turbine structures were changed to Suzlon 2.1 MW S88 turbines in August 2008, Rugby Wind, LLC should provide the Commission documentation that a notice of actual construction or alterations was submitted to the FAA as part of Order #5.

The ND Wind Energy Council sent the Commission a letter (Docket #23) with recommendations for consideration regarding the wind farm siting issue in North Dakota. This trade association organized and conducted a series of meetings that were attended by a broad range of individuals, landowners, communities, organizations, and companies that consider themselves to be stakeholders in North Dakota. The main concern was the protection of adjacent landowner wind resources. The Wind Energy Council set a draft of minimum guidelines that were created for siting of wind turbines. Consensus was not reached on the issue of mandatory setbacks. The following are the Recommended Minimum Guidelines for the siting of wind turbines (July 25, 2005):

- Setbacks from Public Roads – 1.1 x overall height to tip of blade at highest point
 $1.1 \times 403.44 \text{ ft} = 443.78 \text{ feet}$
- Occupied Residence setback – 500 feet
- Icing setback – 1.5 x (hub height + rotor diameter)
 $1.5 \times 443.78 \text{ feet} = 665.67 \text{ feet}$
- Tubular towers only, no lattice style
- Non-reflective paint/coatings on the tower, nacelle, and blades
- No overhead lines within the wind farm perimeter
- Minimum lighting of turbines as per FAA requirements
- No additional lighting on turbines.

The Council felt that it would be best for everyone if these guidelines were implemented uniformly across the state. The Council decided to reach out to the County Commissioners and make the guidelines available to any Commissioners that had an interest rather than approach the State Legislature. According to the ND Wind Energy Council from an engineering point of view, the wind must travel a distance equal to approximately 10 wind turbine rotor diameters (RD's) in order to straighten out and have a same energy potential that did when it passed through the first



wind turbines rotor. The manufacturer of the Suzlon S88-2.1MW turbines required a 3 rotor diameter spacing between adjacent turbines. That spacing is 866 feet or 264 meters. The 3 rotor diameter spacing was used for this project. Recommendations of the ND Energy Council were to be guidelines and were not followed entirely for this project. The ND Wind Energy Council is a trade association that provided recommendations for consideration and is not a requirement. The Pierce County Zoning Regulations are the governing standards for this wind farm.

Pierce County Zoning Regulations (Docket #19) were established for wind generation facilities in the County with turbines tower heights up to 300 feet. A special use permit is required for heights of over 345 feet. The hub height of a turbine is 259.12 feet and the turbine has a maximum height of 403.44 feet based on the hub height and $\frac{1}{2}$ the rotor diameter. The County required a turbine is to be located 750 feet from an occupied residence, 200 feet from a property line, and 300 feet from road right-of-way. Blades shall not exceed 500 feet above ground. Turbines were located beyond the 750 feet setback to occupied residences and 200 feet from a property line. All turbines meet the height requirements. Three turbines were located within the 300 feet from a non-established road right-of-way. Turbine J-2 is approximately 100 feet from the section line to the west (34th Ave NE), turbine A-6 is approximately 170 feet from section line to the east (30th Avenue NE), and turbine C-4 is approximately 90 feet from the section line to the south (77th Street NE). Rugby Wind should provide to the Commission a variance or obtain a variance from the County for these turbines setbacks as they are within 200 feet of the property line (section line) and the non-established road right-of way 300 feet as part of completion of Order #5. Table 8 of the application stated the PPM would provide a setback of 400 feet for road right-of-way.

According to the application, Pierce County required the collection system to be underground. PPM desired the flexibility to use aboveground collection lines to cross a steep gully, for example. PPM also desired the flexibility to use an aboveground collection system when collecting energy from strings of turbines over five miles away. PPM constructed a 34.5 kV single circuit overhead transmission line within the wind farm. PPM should provide a copy of the variance to construct an overhead transmission collector line as part of this project to the Commission for its case file as part of Order #5.

North Dakota Administrative Code 69-06-01-05 lists 21 state agencies that are entitled to notice of the Rugby Wind LLC (PPM) Siting Application. Federal agencies also require notification. The application and response to the notice of hearing identified the following state and federal agencies with regulatory concerns or responses: North Dakota Game and Fish Department (GFD), US Fish and Wildlife Service (USFWS), North Dakota State Historical Preservation Office (SHPO), North Dakota Geological Survey, North Dakota Parks and Recreation Department (NDPRD), North Dakota Office of Attorney General, North Dakota Department of Commerce, North Dakota Department of Health, North Dakota Department of Transportation, North Dakota Water Commission, Natural Resources Conservation Service (NRCS), North Dakota State Land Department, US Army Corp of Engineers (USACE), and the Public Service

Commission. The application, exhibits, and Docket items had copies of the responses from these agencies.

The North Dakota Game and Fish Department reviewed the Project site for wildlife concerns. Their primary concern is the disturbance of native prairie. PPM consolidated application (Docket # 10) proposed to survey the site for native prairie and will work with the GFD, NRCS, and USFWS to restore disturbed areas. Restoration included reseeding the area with approved NRCS and USFWS seed mixes. The post construction field inspection verified reseeding of disturbed lands due to this project.

Concerns of the US Fish and Wildlife Service (USFWS) focused on migratory birds, USFWS property interests, wetland, grassland, and woodland resources, and threatened and endangered species. PPM obtained the information for the wetland and grassland easements leased by the USFWS. PPM worked closely with the USFWS to minimize impacts to these lands. Habitats within the project site such as native prairie and wetlands were highlighted as USFWS areas of concern. Any direct impacts to wetlands or grasslands within USFWS easements resulted in a compatibility assessment from local USFWS staff. The process considered the magnitude of the impact, the type or quality of the habitat which is impacted, and the feasibility of avoiding the impact. If compatibility was found, a right-of-way permit was issued for the impact. The USFWS also recommended a series of mitigative measures to minimize impacts to existing habitats in their letter to PPM (Docket # 10 Appendix D of the application). PPM implemented these measures as they are applicable to the project. The route avoided wetlands on USFWS property interests unless properly permitted. Wetland crossings of collector UG lines and communication lines were bored.

The US Fish and Wildlife Services in its January 10, 2005 letter (Docket #10, Appendix B) on page 247 of 346 recommended that time of construction be late summer (after July 15) or fall so as to not disrupt waterfowl or other wildlife during the nesting season. In the consolidated application, PPM spelled out that construction would occur in late summer (after July 15) or fall so as to not disrupt waterfowl or other wildlife during nesting season. According to the weekly progress reports the wind farm construction started on in November of 2008 (Docket #107). Construction ended in December of 2008 for that year. Construction work started again in May of 2009 and continued into December of 2009. Therefore, construction occurred during breeding season. No record was found in the case file that the USFWS was notified of construction during breeding season or that a biologist was on site during construction breeding season. Rugby Wind LLC (PPM) did not follow the USFWS recommendation or their application statement of not construction during breeding season as required for part of Order # 5.

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that more than one turbine was installed per quarter-section in grassland areas. This request was not followed but the Commission approved the location of the turbines prior to construction.

No records of the Class III Cultural Resources Inventory Reports were found in the case file. Rugby Wind, LLC should provide the Commission a copy of "Class III Cultural Resources Inventory for Rugby Wind Farm Project, Pierce County, North Dakota," by Erika Palmer and Michael Madson (HDR Engineering, March 2006) and "Supplemental Class III Cultural Resources Inventory for Rugby Wind Farm Project, Pierce County, North Dakota," by Michael A. Justin, Stephen Sabatke, and Rod Johnson (HDR Engineering, April 2009) as part of Order #5.

According to the North Dakota State Water Commission Water Permit Retrieval System, there is one property with an irrigation permit within the Project Site. No impacts to irrigation were noted in the case file.

The North Dakota Geological Survey was consulted regarding geological resource information to the project. No problems were identified.

The North Dakota Parks and Recreation Department was also asked to comment on the project. The Natural Heritage Inventory had no records within the project site. The North Dakota Parks and Recreation Department (NDPRD) stated the project would not affect State park lands or land and water conservation fund recreation projects. The NDPRD recommended impacted areas be revegetated with native species. PPM worked with the NDPRD in conjunction with the USFWS, NRCS, and GFD to seed disturbed areas with appropriate seed mixes.

The North Dakota Department of Commerce commented that no problems were identified. They provided a letter of clearance for the project- State Application Identifier No. : ND050202-0039.

The North Dakota Department of Health believed that the environmental impacts from the proposed construction would be minor and could be controlled with proper construction methods. The ND Department of Health issued the following comments and Keitu post construction discussion follows each comment as necessary:

- All necessary measures will be taken to minimize fugitive dust emissions during the construction process by wetting the project area or by other means. In reviewing the weekly progress reports, construction occurred in the spring/summer/fall months. Disturbed areas were minimal. A 40' x 40' maximum area may have been disturbed around 71 turbine structure locations. The ground disturbed around a structure is caused by the auguring of the foundation holes for transmission structures. The soil pulled above ground is usually wet and dust control is not required because of this. Dust control is usually done by watering the construction area. Due to wet soil and weather conditions, watering was not necessary.
- Care is to be taken during construction activity near any water of the state to minimize adverse effects on a water body. This includes minimal disturbance of stream beds and

banks to prevent excess siltation, and the replacement and revegetation of any disturbed area as soon as possible after work has been completed. Caution must also be taken to prevent spills of oil and grease that may reach the receiving water from equipment maintenance, and/or the handling of fuels on the site. The storm water discharge permit for the project identifies mitigation measures that PPM was to follow and did. Rugby Wind LLC (PPM) also addressed mitigation measures in the consolidated application (Summary of Route Impacts and Mitigation in Docket #10 page 72 of 346). A 401 Water Quality Certification permit was required from the North Dakota Department of Health for wetland fill in jurisdictional water in Section 33, T 157N, R 72 W for installation of a transmission pole.

- Projects disturbing one or more acres are required to have a permit to discharge storm water runoff until the site is stabilized by the reestablishment of vegetation or other permanent cover. Also, cities may impose additional requirements and/or specific best management practices for construction affecting their storm drainage system. A ND Department of Health Storm Water Discharge Permit was required for this project. The consolidated application mentioned the NPDES permit and SWPPP was prepared and submitted to the ND Department of Health. The Storm Water Discharge Permit is issued from this information. This item was accomplished.
- Noise from construction activities may have adverse effects on persons who live near the construction area. Noise levels can be minimized by ensuring that construction equipment is equipped with a recommended muffler in good working order. Noise effects can also be minimized by ensuring that construction activities are not conducted during early morning or late evening hours. Noise issues were addressed in the siting application in Section 5.5 Noise on pages 48-50/346 (Docket #10). No mitigative measures were necessary.

The ND Health Department also issued a one page correspondence about Construction and Environmental Disturbance Requirements. These issues were discussed with methods that were followed in the consolidated application for this project. The minimum requirements set by the Health Department were met for Soils, Surface Waters, and Fill Material.

The North Dakota Department of Transportation asked the PPM obtain the appropriate permits and risk management documents from the Devils Lake District Office. In reviewing the application and Exhibit 8 (Docket #40) for potential permits and approvals required for construction and operation of the proposed facility, no utility permits for crossing a highway in the state were listed as a requirement. The project layout shows the wind project on both sides of State Highway 17. The 34.5 kV overhead transmission collector line (32nd Avenue), UG line north of Turbine J1, and the UG line between Turbine K1 and K2 all cross Highway 17. Utility permits were required each time the collection system and the communication lines crossed the highway. Line marker signs are usually required at UG highway crossings. No record was found in the case file for these utility crossing highway permits. Rugby Wind, LLC should provide



copies of the utility highway crossing permits to the Commission for the case file and install line marker signs at these highway crossings as part of Order #5.

The Natural Resources Conservation Service (NRCS) did not identify any concerns with the project. Since there are no Federal funds, the Farmland Protection Policy Act (FPPA) does not apply. Temporarily disturbed areas were reseeded per USFWS and NRCS recommendations to blend in with existing vegetation. In addition, PPM considered the FPPA in the location of the line and selection of structures. The route does cross prime farmland. However, the impacts are nominal. If all the structures for the line were placed in prime farmland, approximately 0.2 acres of prime farmland would be permanently removed from production.

The ND State Land Department identified school trust lands that they own within the proposed project. Easement agreements or a permit from the Land Board will be required for the use of those lands (Docket # 10 Appendix D of application). In its August 17, 2005 letter (Docket #48) to the Commission the ND State Land Department stated it supported the wind farm. PPM and Land Department personnel field inspected the proposed transmission line route across school trust land and requested that the PPM transmission line be located between 100 to 150 feet from the centerline of the existing Xcel transmission line. Rugby Wind LLC (PPM) followed this request. Easement agreements and permits were acquired as necessary.

The US Army Corps of Engineers (USACE) made a preliminary determination that there are jurisdictional waters as defined by the USACE within the Project Site in Section 33, T157N, R72W; Section 6, T156N, R72W; and Section 1, T156N, R73W (Docket #10 Appendix D of application). The wetland in Section 33 of Torgerson Township was impacted by the project. PPM obtained permits through the USACE and North Dakota Department of Health in accordance with Sections 404 and 401 of the Clean Water Act, respectively. PPM mitigated the impact as required by these regulatory bodies. No additional issues were raised.

North Dakota Indian Affairs was asked to comment but had no response.

Other agencies had an opportunity to mandate any requirements to be followed by their agency but did not respond. None of the agencies had any objection to the Rugby Wind LLC (PPM) transmission line Project. Order # 4 requires more information for three items and the Commission to discuss PPM not following the animal breeding season recommendations of the USFWS to complete Order #5.

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- 6. PPM shall conduct a preconstruction conference prior to commencement of any construction, and must include a PPM representative, its construction supervisor, and a representative of Commission staff to ensure that PPM fully understands the conditions set forth in this order.**

A preconstruction meeting (Docket #106) was held on September 25, 2008. Attendees were: Jerry Lein ND PSC, Tim Seck-Iberdrola Director of Development, and Iberdrola Construction Managers, Joe Melsha, Raymond Fletcher and Dennis Kahns.

Iberdrola agreed to convey any proposed turbine shifts to the Commission for approval if a shift is deemed necessary. They were also going to provide weekly reports during construction. A September 29, 2008 pre-construction letter also identified the letter as notice to the Commission that construction was to begin the week of September 29, 2008. Construction was actually started the week of 11/11/08. Therefore, construction of the wind farm did not begin until after the preconstruction conference. Order # 6 was therefore followed.

- 7. PPM shall inform the Commission of its intent to start construction on the energy conversion facility prior to the commencement of construction, and while construction is underway, PPM shall keep the Commission updated of construction activities on a weekly basis.**

In the pre-construction meeting letter (Docket #106) Iberdrola informed the Commission that it intended to start the week of September 29, 2008. Weekly progress reports started for the week of November 8th, 2008. Construction information was listed but no work progress was reported for the first month other than hauling materials on site. Weekly progress activities reports were sent to the Commission until December 19, 2009. The November 21, 2009 weekly progress report (Docket #151) stated that the plant-wide tests were completed for everything. Reclamation and trees still remained. On December 5, 2009 progress report (Docket #152) stated that reclamation around turbines discontinued due to drop in temperatures. On the last weekly progress report of December 19, 2009 (Docket #153), PPM stated that this will be the last weekly report until April/May of 2010 when final civil restoration is scheduled to recommence and be completed. No weekly progress reports were found in the case file for April/May 2010 spring work. Restoration was complete the day of the post construction inspection.

PPM should provide the Commission weekly progress reports for April/May 2010 final civil restoration as stated in their progress report of December 19, 2009. Once construction started, weekly progress reports were sent to the Commission updating construction activities. Once the weekly progress reports for civil restoration are provided, Order # 7 was followed and is complete.



8. PPM shall construct and operate the energy conversion facility in the manner described in its Application and at the hearings, and in accordance with all applicable safety requirements.

According to the application, construction and operation of the wind farm project will be in accordance with all associated federal and state permits and laws, as well as industry construction and operation standards. Due to the minor impacts expected on the existing infrastructure during project construction and operation, extensive mitigation measures are not anticipated.

The project was commissioned after completion of the construction phase. The project underwent detailed inspection and testing procedures prior to final turbine commissioning based on the weekly progress reports. Inspection and testing was conducted for each component of the wind turbines. The communication system, obstruction lighting, substation, collection and feeder system, and the SCADA system were tested and inspected as well based on the weekly progress report (Docket #151) stating that a plan wide test was completed on everything. The project was designed using proper safety and manufacturer standards and construction using applicable safety requirements with testing of equipment and facilities before the facilities were commissioned. The substation followed NESC standards. The turbines follow design standard GL 2003. Quality uses ISO 9001:2000, ISO 9001:2008, ISO 14001:2004 & OHSAS 18001:2007. Towers are a tubular 4 section and were constructed using ANSI specifications. US DOT FAA advisory circular AC 70/7460-1K was followed for obstruction marking and lighting. Based on this information and no record in the case file of no injuries during construction, Order #8 was followed during construction.

9. PPM shall promptly report to the Commission the presence in the permit area of any critical habitat of threatened or endangered species, or of bald or golden eagles that PPM becomes aware of and that were not previously reported to the Commission.

The US Fish and Wildlife Service (USFWS) sent a letter of concerns about the project on January 10, 2005 (Docket #10, Appendix B-page 152/276). They identified the Whooping Crane as endangered species and the Bald Eagle and Piping Plover as threatened species and concerns of the Dakota Skipper butterfly in the project area. Also during a site visit November 22, 2004, USFWS staff observed a large nest structure in T157N, R72W, Section 1, SW 1/4. One bald eagle was observed perched in the same tree and another sitting on the nest at the time of the visit. The USFWS at the time of the field review could not determine if the structure was a bald eagle nest or if it was built by some other raptor species. The Service recommended a spring survey of the nest structure prior to project construction to determine the status of the potential bald eagle nest. PPM consultants conducted a 2005 spring survey and found Canadian goose in the nest. PPM said they would not locate a tower within one mile of the nest structure to create a buffer area and considered it a no disturbance area to minimize impacts to the nesting birds. The as built drawings and post construction visit identified turbines S-4 and S-5 in the NE ¼ of Section 1,



T157N, R72W. Since these turbines are in the same section they are located closer than one mile and therefore a buffer zone of less than 1 mile. PPM did work with USFWS on siting of turbines. The Canadian goose is not a raptor, threatened or endangered species.

A phase I screening report with a USFWS PII score was part of the application. No areas critical to threatened and endangered species were identified in the project site in the application.

No critical habitats of threatened or endangered species or of bald or golden eagles were discovered during the planning or construction phase of the project. This is based on review of weekly construction progress reports and verification that no correspondence was identified in the Commission's file. Order # 9 was followed.

10. If any cultural resource, paleontological resource, archeological site, historical resource, or gravesite is discovered during construction of the facility, earth disturbing activities in the immediate vicinity of the discovery must be halted. The resource must be marked, preserved and protected from any further disturbance until a professional examination can be made in consultation with the ND SHPO. A report of such examination will be filed with the Commission and clearance to proceed must be given by the SHPO and the Commission.

In consultation with the North Dakota SHPO, a professional archaeologist would establish buffers appropriate to a resource, once turbine locations have been established and if resources were identified.

SHPO recommended that PPM sponsor a Class I cultural resources inventory for the site to determine the nature of previous cultural resources investigations and the location of known archaeological sites in the Project site. PPM reviewed cultural resources information on file at the SHPO for the study area and prepared a Class I Cultural Resources Inventory. A review of 14 identified studies and additional records at the SHPO identified one previously recorded archaeological resource and two archaeological site leads within the project area. The SHPO also stated that there is "potential for unrecorded properties in a variety of physiographic settings in the...project area". Therefore, the SHPO suggested that a Class III cultural resources inventory, primarily pedestrian survey, might be appropriate.

On March 29, 2006 the Commission received a SHPO letter (Docket #91) to PPM's consultant HDR, Inc. SHPO stated they have reviewed: "Class III Cultural Resources Inventory for Rugby Wind Farm Project, Pierce County, North Dakota," by Erika Palmer and Michael Madson (HDR Engineering, March 2006) and found it acceptable. The level and scope of cultural resource investigations were acceptable for the siting of Turbine and Access Road facilities, as outlined in the report. Also, SHPO concurred with the recommendations provided and protocols stated for avoidance of potentially significant sites. They also concurred with a "No Historic Properties



Affected" determination, if consulted by a federal agency, provided the project was of the nature stated and it took place in the locations plotted and described in the report and correspondence.

August 14, 2008 Iberdrola Renewables (f/k/a PPM Energy, Inc.) changed the wind turbine plan from 100 GE 1.5 MW turbines to installing 71 Suzlon 2.1 MW S88 turbines. This required a new layout of tower locations. Most turbines were located in same locations or relative close to initial site locations. Due to moving of some of the towers, an additional Class III Cultural Resources Inventory needed to be conducted. On August 22, 2009 the Commission received a SHPO letter (Docket #121) to Iberdrola Renewables consultant HDR, Inc. SHPO stated they have reviewed: "Supplemental Class III Cultural Resources Inventory for Rugby Wind Farm Project, Pierce County, North Dakota," by Michael A. Justin, Stephen Sabatke, and Rod Johnson (HDR Engineering, April 2009) and find it acceptable. The level and scope of cultural resource investigations are acceptable for the siting of Turbine and Access Road facilities, as outlined in the report. Also, SHPO concurred with the recommendations provided and protocols stated and established for avoidance of potentially significant sites. SHPO concurred that 32PIX20 was not significant and was not eligible for listing in the National Register of Historic Places. Finally, they also concurred with a "*No Historic Properties Affected*" determination, if consulted by a federal agency, and "*No Significant Sites Affected*" determination provided the project was of the nature stated and it took place in the locations plotted and described in the report and correspondence.

PPM in the application (Docket #10) said it would make every effort to avoid impacts to identified archaeological resources. In the event that an impact would occur, PPM would determine the nature of the impact and consult with the SHPO on whether or not the resource was eligible for listing in the National Register of Historic Places (NRHP). Mitigation for project-related impacts on NRHP-eligible archaeological resources would include an effort to minimize Project impacts on the resource and/or additional documentation through data recovery. If the Class III cultural resources inventories should determine that such a plan is appropriate, PPM would develop a discovery plan to be in place should previously unknown archaeological resources or human remains be inadvertently encountered during the Project. The plan would outline the framework for handling such discoveries in an efficient and legally compliant manner. The discovery plan was to include the following topics: construction contractor training, identification of resources in the field, contact information for PPM-designated professionals to address a discovery, procedures for avoidance, and associated tasks in the event of work stoppage in a construction area. With regard to a discovery of human remains, procedures would be followed to ensure that the appropriate authorities would become involved quickly and in accordance with local and state guidelines.

During construction turbine R-4 was relocated an additional 50 feet due west to help stay clear and out of an existing identified cultural resource area.

No cultural resource, paleontological site, archeological site, historical site, or grave site was discovered during construction. This is based on review of weekly construction progress reports and verification that no correspondence was identified in the case file. Order # 10 was followed.



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- 11. All pre-existing roads and lanes used during construction must be restored to a condition that will accommodate their previous use and areas used as temporary roads during construction must be restored to their original condition.**

County and township (section line) roads characterize the existing roadway infrastructure in and around the project site. There are two state highways within and adjacent to the project. Highway 17 runs east/west through the Wind farm facility. Highway 3 is located on the west side of the Wind farm facility.

The traffic impacts were considered negligible due to the construction. Figure 10 in the application (Docket # 10) was a Traffic map that identified the average daily traffic. Highway 17 had only an average daily traffic of 201 vehicles per day. Highway 3 had an average daily traffic count of 1426 vehicles south of Hwy 17 intersection and 1206 vehicles north of the Hwy 17 intersection. Primary access road to the turbines needed to be constructed and are permanent. The temporary access roads were primarily compaction of agricultural soils. Where necessary, the soil was disked following construction.

Truck access to the project site was served by U.S. Highway 2 into Rugby, which is a four-lane divided highway connecting to I-29 in Grand Forks and US Highway 83 in Minot (another four-lane divided highway to I-94 in Bismarck). From Rugby, Highway 3 to Highway 17 served as the primary truck access into the project site. Specific truck routes were dictated by the location required for delivery. Additional operating permits were issued by the State, County and/or township for over-sized truck movements. County permits such as the haul road agreement usually require a final inspection by the county road superintendent after construction to verify the roads are restored to acceptable conditions.

Any improvements to existing access roads were re-grading and filling of the gravel surface to allow access even in inclement weather. Access roads were constructed of Class 5 gravel with a width of 16 feet providing access to the turbines via public roads. No asphalt or other paving was constructed. Access roads were constructed along turbine strings or arrays. These roads were sited in consultation with local landowners and completed in accordance with local building requirements. They were located to facilitate both construction (cranes) and continued operation and maintenance. Siting roads in areas with unstable soil were avoided wherever possible. All roads included appropriate drainage and culverts while still allowing for the crossing of farm equipment. The roads will be approximately 4.9 meters (16 feet) wide and will be covered with road base designed to allow passage under inclement weather conditions. The roads will consist of graded dirt and covered with Class 5 gravel. Once construction was completed, the roads was regraded, filled, and dressed as needed. Roads were restored to a condition that accommodate their previous use and areas used as temporary roads during construction were restored to their original condition based of a site field inspection and review using Google Earth images. Order # 11 is complete.

12. Construction must be suspended when weather conditions are such that construction activities will cause irreparable damage, unless adequate protection measures approved by the Commission are taken.

According to the weekly progress reports, construction began the week ending November 8, 2008 with the last weekly report being on 12/19/09 except for reclamation. The weekly construction report ending 12-06-09 (Docket #116) identified the general contractor shutting down for the winter with construction to start again in the spring. The weekly report of 12/19/09 (Docket # 153) identified that construction was being shutdown due to drop in temperatures and will commence in the spring. Therefore, construction was suspended when weather conditions were such that activities could cause irreparable damage. Order # 12 was followed.

13. Reclamation, fertilization, and reseeding is to be done by PPM according to the Natural Resource Conservation Service recommendations for CRP, native prairie and other non-cropped lands unless otherwise specified by the landowner and approved by the Commission.

The potential for wind and water erosion exists in the soil types found on the site. Construction practices minimized soil erosion during and after turbine construction. The impacts were not measurable based on the field inspection. To minimize erosion during and after construction, Best management practices for erosion and sediment control were utilized based on the application and the NPDES General Permit. Since turbines were not located on significant slopes, only non-structural practices were required. These practices include: temporary seeding, permanent seeding, mulching, filter strips, erosion blankets, grassed waterways, and sod stabilization. Top soil was segregated if cuts were made during construction and reapplied after final contours had been graded.

Iberdrola Renewables, Inc. revegetated non-cropland and pasture areas with seeding mix as recommended by USFWS and NRCS. Iberdrola Renewables, Inc. was to inspect and control of noxious weeds in the vicinity of the turbines, access roads, and associated facilities immediately after construction and periodically for the life of the project. The post construction field inspection verified revegetation with seed mix and control of noxious weeds.

Iberdrola Renewables, Inc. worked closely with the landowners, the USFWS, and other agencies in finalizing the wind turbine structure locations and access to the site to minimize land use disruptions and impacts to environmentally sensitive areas to the extent possible. These areas were graded to original contours and if necessary reseeded with vegetation recommended by the USFWS and Natural Resources Conservation Service (NRCS). Construction of the wind farm did not change the land use in the corridor. Order #13 was done in accordance with NRCS and USFWS recommendations.

14. PPM's obligation for reclamation and maintenance of the site shall continue throughout the life of the energy conversion facility.

Rugby Wind, LLC is to inspect and control noxious weeds in the vicinity of the turbines, access roads, and associated facilities immediately after construction and periodically for the life of the project. The post construction field inspection verified that reclamation did occur at the project site.

In the application, Rugby Wind, LLC (Iberdrola Renewables) stated it is responsible for project operation and maintenance for the life of the project. Rugby Wind, LLC stated that it would contract with the most appropriate supplier of operations and maintenance services at the time of operation, to assure timely and efficient operations. Rugby Wind, LLC will maintain a computer program and database for tracking each wind turbine's operational history.

Each wind turbine in the project will communicate directly with the SCADA system for the purposes of performance monitoring, energy reporting and trouble-shooting. Under normal conditions each wind turbine operates autonomously, making its own control decisions. Rugby Wind, LLC entered into contractual agreements with the most appropriate supplier to provide on-site service and maintenance for the project.

Rugby Wind, LLC and the appropriate supplier is to control, monitor, operate, and maintain the Project by means of a SCADA computer software program. In addition to regularly scheduled on-site visits, the wind farm may be monitored via computer. The SCADA system offers access to wind turbine generation or production data, availability, meteorological, and communications data, as well as alarms and communication error information. Performance data and parameters for each machine (generator speed, wind speed, power output, etc.) can also be viewed, and machine status can be changed. There is also a "snapshot" facility that collects frames of operating data to aid in diagnostics and troubleshooting of problems.

The 2.1 MW turbines have Supervisory Control and Data Acquisitions (SCADA) communication technology to control and monitor the wind farm. SCADA communications system permits automatic, independent operation and remote supervision, thus allowing the simultaneous control of many wind turbines. Operations, maintenance and service arrangements between the turbine manufacturer and Rugby Wind, LLC will be structured so as to provide for timely and efficient operations. The computerized data network provides detailed operating and performance information for each wind turbine.

Each entire turbine is equipped with a lightning protection system. The turbine is grounded and shielded to protect against lightning. The grounding system was installed during foundation work, and was to be designed for local soil conditions. The resistance to neutral earth is to be in accordance with local utility or code requirements. Lightning receptors were placed in each rotor blade and in the tower. The electrical components are also protected.



Rugby Wind, LLC will remotely monitor the Project on a daily basis. This will be accompanied by a visual inspection by a maintenance manager. Several daily checks were made in the first three months of commercial operation to see that the project is operating within expected parameters. The project service and maintenance was planned and is divided into the following intervals:

- A) First service inspection
- B) Semi-annual service inspection
- C) Annual service inspection
- D) Two years service inspection
- E) Five years service inspection

Rugby Wind, LLC was conducting maintenance on turbines E-1, G-2, F-2, Q3, J-2, J-4, C-3, C-4, M-6 and M-7 were not operating the day of the post construction occurred. Maintenance personnel were on site and where performing maintenance.

Rugby Wind, LLC is to periodically use the right-of-way to perform inspections, to maintain equipment and to make repairs over the life of the line. Rugby Wind, LLC will also conduct routine maintenance to remove undesired vegetation that may interfere with the safe and reliable operation of the proposed line. The post construction field inspection of the wind farm facility verified that reclamation and maintenance of the ROW was being conducted. Rugby Wind LLC (PPM) is currently following its obligation for reclamation and maintenance of the ROW and shall continue to do so throughout the life of the transmission line. Order # 14 is being followed.

15. When the facility is retired, structures will be removed and the area restored to as near as original condition as is practical.

Rugby Wind, LLC has a contractual obligation to the landowners to remove the Wind Facilities, including foundations to a depth of four feet, when the wind easement expires. Rugby Wind, LLC also reserved the right to explore alternatives regarding project decommissioning at the end of the Project Certificate term. Retrofitting the turbines and power system with upgrades based on new technology may allow the wind farm to produce efficiently and successfully for many more years. Based on estimated costs of decommissioning and the salvage value of decommissioned equipment, the salvage value of the wind farm will exceed the cost of decommissioning.

In the application (Docket #10) in the design section it stated that 5 meteorological towers were within the project site boundaries. It was anticipated that one permanent meteorological tower would remain after construction. No meteorological towers were observed during the post construction field inspection. The meteorological towers were mostly likely retired and the area was restored to original condition.

No other part of the energy conversion facility has been retired as of the date of this report. Effective October 1, 2008 NDAC 69-09-09 came into law. Rugby Wind, LLC has a contractual



obligation to the landowners to remove the wind facilities, including foundations (NDAC 69-09-09-02). Rugby Wind, LLC is responsible for decommissioning the wind farm and for all costs associated with decommissioning that facility and associated facilities.

Decommissioning and site restoration would include dismantling and removal of all towers, turbine generators, transformers, and overhead cables; removal of underground cables to a depth of twenty-four inches; removal of foundations, buildings, and ancillary equipment to a depth of three feet and removal of surface road material and restoration of the roads and turbine sites to substantially the same physical condition that existed immediately before construction of the commercial wind energy conversion facility or wind turbine (NDAC 69-09-09).

The site is to be restored and reclaimed to the same general topography that existed just prior to the beginning of the construction. Areas disturbed by the construction of the facility and decommissioning activities are to be graded, top soiled, and reseeded according to natural resource conservation service technical guide recommendations and other agency recommendations (NDAC 69-09-09).

Effective on October 1, 2008 Rugby Wind, LLC is to provide the Commission with a comprehensive decommissioning plan and an estimated decommissioning cost in current dollars stating the anticipated method of decommissioning. They should also update the costs and of the decommissioning and restoration and insure that funds will be available (NDAC 69-09-09).

No record was found in the case file for Commission review of the estimated decommissioning cost per turbine and a comprehensive decommissioning plan that describes how the facility or turbine owner or operator plans to pay for decommissioning. Rugby Wind, LLC should provide this information to the Commission as part of their responsibility to the fulfillment NDAC 69-09-09 of Order #15.

16. Trees or other woody vegetation must be replaced with saplings that are two or more years old at a rate of two for every one removed. Landowners shall be given the option of having replacement trees or shrubs planted on the landowner's property or waiving that requirement in writing and allowing PPM to plant the replacement trees or shrubs elsewhere. PPM shall inspect tree replacements once a year for three years and send a report on or before October 1 of each year to the Commission documenting work completion and condition of woodlands planting. The Commission may order additional plantings if survival rates are less than 75%.

The USFWS North Dakota Land Cover Classification indicated 100 acres of forested or woody vegetation in the project site. Generally, these woodland areas are adjacent to lake margins, isolated groves, or windrows established by the landowner to prevent wind erosion and shelter



dwelling. Typical tree species include bur oak, cottonwood, aspen, green ash, box elder, American elm, and silver maple. In section 7.15.3 Vegetation mitigation measures PPM stated "if impacts to individual trees and shrubs cannot be avoided, these resources will be mitigated at a ratio of 2:1 and will be kept alive for five years. PPM was to work to avoid and to minimize impacts to existing trees and shrubs.

Weekly progress report for the week of 12/05/09 (Docket #152) stated that tree planning was scheduled for the spring of 2010. At the conclusion of the project, documentation identifying the actual number, variety, type, location, and date of the replacement plantings should be filed with the Commission. No documentation was found in the case file identifying the actual number, variety; type, location, and date of the replacement planting were given. PPM grouped the tree replacement and monitoring from the wind farm together with the 230 kV transmission line constructed in Case No. PU-05-305. The tree replacement and monitoring information has been filed in case no. PU-05-305 in Docket #123 and #127. The Commission should copy this information from Case no. PU-05-305 to Case file no. PU-05-47.

On December 27, 2010 Rugby Wind LLC (PPM) sent a letter (Docket #123 in Case no. PU-05-305) to the Commission about the status or the tree survey report. Overall 289 trees were removed due to construction of the Wind Farm and the Transmission line projects. At a 2:1 replacement ratio that required 578 trees. As of the end of November 2010, 563 trees (97% had been installed). The letter reported that due to weather, the remaining trees will be required to be installed in the spring of 2011.

On October 7, 2011 (Docket #127 in case no. PU-05-305 the Commission received correspondence about year 2 of 3 tree replacement. All trees had been installed with a 93.6 % survey rate an end of year 2. NRCS replacement species recommendations were followed for tree replacement. Tree Removal locations were identified in figure 1 of the memo. Seven site locations were trees were removed were identified in the wind farm area. The memo (figure 2) also had a map of the tree replacement locations on 9/29/11. This map showed dead and live trees.

Some new tree plantings were observed during the post construction field inspection. After the second year of three years of monitoring there is a 93.6% survival rate. PPM needs to submit the third year of monitoring in 2012 and the survival rate. The Commission may order additional plantings if survival rates are less than 75%. Once the third year tree monitoring is submitted to the Commission in 2012, the Commission can rule on Order #16.



17. PPM shall repair or replace all fences and gates removed or damaged during all phases of construction and operation of the proposed energy conversion facility.

Fence areas were replaced with gates where permanent access roads intersected existing roads and property lines. The road into turbine G-2 and G-3 had a cattle guard installed instead of a gate. Rugby Wind, LLC had agreements with landowners that fences and gates removed or damaged would be repaired or replaced. During the post construction field inspection, all fences and gates were in place and were in good working order. No complaints from landowners about fences or gates were found in the case file. Order # 17 was followed.

18. PPM shall repair or replace all drainage tile, broken or damaged, during all phases of construction and operation of the proposed energy conversion facility.

No impacts to surface drainage patterns or groundwater flow patterns were viewed at the post construction field inspection. Approximately 62 acres of land was used for the wind turbines and access roads. No record of drainage tile discovery or damage to drain tile was found in the case file. Rugby Wind, LLC had agreements with landowners to repair or replace damage that occurred during construction. In comparing the tower locations with a USGS topographic Map, the Rugby Wind Farm turbines and access roads are located on higher elevation land which is not likely to have drain tile. UG Communication or collector lines trenches could cut through drain tile if installed in lower elevation areas. Rugby Wind, LLC should provided evidence or a letter of correspondence to the Commission that no drainage tile was found, broken or damaged to complete Order #18.

19. Staging areas or equipment shall not be located on cultivated land unless otherwise negotiated with landowners.

Over 85 percent of the project site is used for agricultural purposes. Forty-seven percent of the site is cropland and hayland. Undisturbed grasslands are lands placed in the Conservation Reserve Program (CRP). Approximately five percent of the site is former cropland that is now enrolled in CRP. Native grasslands form 38 percent of the site and are primarily used for grazing livestock. The native grasslands include remnant native prairie of various quality dependent on grazing pressure and herbicide applications to control weed species. Approximately 10 percent of the site is wetland, lake, open water, or riparian area.

Approximately 62 acres of land was used for the wind turbines and access roads. The project facilities also included an O&M facility, project substation (Herd Lake Substation), a new 230 kV transmission bay at the Rugby substation, and transmission line. These areas will be permanently converted from agricultural land use into wind facilities. Approximately three acres was used for the O&M facility and project substation. The substation was constructed at proposed location B.



Impacts from the transmission line were addressed in Case no. PU-05-305. Approximately 8 acres of land was temporarily impacted for contractor staging and lay down areas. In reviewing an aerial photo of the project site and examining for where the turbines were located, the turbines mostly avoided cultivated land.

Usually the siting applicant will conduct a 600 feet radius Class III Cultural Resource study around each wind turbine that is used as the staging area for each turbine. The collector substation materials and equipment was staged on the substation property. Rugby Wind, LLC had agreements (Docket #41) with all landowners of the project location. Rugby Wind, LLC's landman had approval of facility locations and their staging areas prior to construction. They also worked with the landowners to settle all concerns of the agreements between both parties once construction and reclamation was completed.

Based on no complaints were found in the case file, staging areas or equipment were not located on cultivated land unless negotiated with the landowner. Order #19 is completed.

20. PPM shall remove all waste that is a product of construction and operation, restoration and maintenance of the site, and properly dispose of it on a regular basis.

Construction occurred beginning in November of 2008 with completion of construction occurring by the end of December 2009. The construction period was 13 months. No record was found in the case file as to when final restoration was completed at the site.

Potentially hazardous materials associated with the project included fluids found in association with turbines and substation/transformer equipment. There are three types of fluids used in the operation of the wind turbines that are petroleum products: gear box oil, hydraulic fluid, and gear grease. These fluids are necessary for the operation of each turbine. The transformers by each turbine and in the substation contain mineral oil. All petroleum fluids will be contained within the wind turbines and electrical equipment. Rugby Wind, LLC stated in its landowner wind energy lease (Docket #41) that any petroleum wastes generated will be handled and disposed of in accordance with local, state and federal regulations. A Spill Prevention Control and Countermeasures Plan and NPDES General Construction storm water permit were established to address these petroleum products spills and wastes.

The construction of the foundation can cause excess concrete pours, framing material waste and excess rebar. Debris associated with the construction of the project can be packaging material, crates, pallets, conductor reels, and wrapping. Excess excavated soil and removed vegetation can also be part of the waste that is a product of the construction and operations. The USFWS and USACE permits stated that waste materials will not be placed in wetlands or other aquatic resources. During construction solid wastes were temporarily stored within the right-of-way or within the temporary construction easements, and then transported to appropriate disposal



facilities. The permits required for this project stated that during construction solid wastes were to be picked up and placed in containers that were to be emptied regularly. The permits also addressed that Rugby Wind, LLC or its contractors would prevent contamination of the project sites and other areas when handling and disposing of the wastes.

No waste materials were observed on the project site and wetland or other aquatic resources areas during the post construction field inspection. Clean up including the removing and disposing of debris occurred based on the post construction field inspection. All temporary facilities were removed, and the staging and lay down areas were cleaned up. Order # 20 was completed satisfactory.

21. PPM shall, as soon as practicable upon the completion of the construction of each wind turbine, restore the area affected by the activities to as near as is practicable to the condition as it existed prior to the beginning of construction.

Rugby Wind LLC (PPM) considered landowners that entered into easement agreements as principal stakeholders in the project. They provided written project updates to the landowners during the project. Rugby Wind LLC (PPM) also hosted landowner meetings to provide an update on, and to answer questions about, the project.

Rugby Wind LLC (PPM) initially sent out a land agent (landman) to discuss the proposed project and obtain permission to obtain access to a landowner's property for preliminary surveys of the proposed route and corridor. Once the proposed route was identified, the land agent obtained an easement/land lease to construct a facility. After the easement/land lease was signed and other proper paperwork and resources were in place, construction began. Part of the proper paperwork and resources was mitigation measures to reduce adverse impact. Once construction was complete, the land agent met with the landowners to identify any damages or concerns that they had and for Rugby Wind LLC (PPM) to repair the damages or compensate for these damages to maintain good landowner relationships. Rugby Wind, LLC landowner wind energy lease (Docket #41) stated that the owner was to be consulted about site development prior to construction and was part of the final siting decision. An installation fee and crop damage cause was part of the wind energy lease. The land lease had a damage clause for damage mitigation measures.

General mitigative measures/items were spelled out in the consolidated application and in the storm water discharge permit associated with construction activity required by the North Dakota Department of Health. Other Federal, State, and local agencies issue recommendations to be followed. Rugby Wind LLC (PPM) and their contractors were required to follow these measures during construction. These measures help reduce damages.

Reclamation around the turbines started the week ending 8/22/09 based on the weekly progress reports (Docket #138). Reclamation also continued based on weekly progress reports (Docket



#149, #152). The weekly progress report ending 12/05/09 (Docket #152) stated that restoration was suspended due to cold weather until spring 2010.

The wind energy lease agreement with landowners identified restoring areas affected. The post construction field inspection found all areas restored. Since no landowner complaint documentation was found in the case file, Order # 21 has been satisfied.

22. PPM shall provide, if requested, educational material for landowners within the site boundaries about the proposed energy conversion facility and any restriction or danger concerning the proposed energy conversion facility.

Keeping the public informed on the status of the project was a key component. Principal stakeholders in the project were the landowners. They entered into agreements with PPM to provide wind rights for the project. PPM provided written project updates to the landowners. In addition, PPM hosted landowner meetings to provide an update on, and to answer questions on, the project.

PPM also met with Pierce County Commissioners representing the project area and staff to inform them of the project, discuss local permits and answer questions.

PPM has met with Pierce County area state legislators to inform them of the Project. In addition, PPM also worked with key state agencies including the Department of Commerce, the Land Department, the North Dakota Game and Fish Department to inform them of the project and to address areas of interest particular to each department

PPM has also worked with key federal agencies that had an interest in the project including the United States Fish and Wildlife Service. PPM was committed to keeping key stakeholders engaged in the project.

No record was found in the case file of a landowner requesting educational materials for landowners within the site boundaries about the proposed energy conversion facility, and any restriction or possible danger concerning the proposed energy conversion. The wind energy lease agreement (Docket #41) covered some items the landowner needed to be informed about. The Commission should request a copy of the educational materials for landowners that Rugby Wind, LLC has available should a landowner request educational materials in the future. Rugby Wind, LLC should provide a copy of these materials as verification that they have educational informational materials available and can provide it should a landowner ever request it. The educational material provided would complete Order #22.

23. PPM shall provide any necessary safety measures for traffic control or to restrict public access to the energy conversion facility.

The maximum construction workforce was approximately 25 additional vehicle trips per day. The traffic impacts were considered negligible due to the construction. Figure 10 in the application (Docket # 10) was a traffic map that identified the average daily traffic. Highway 17 had only an average daily traffic of 201 vehicles per day. Highway 3 had an average daily traffic count of 1426 vehicles south of Hwy 17 intersection and 1206 vehicles north of the Hwy 17 intersection. Primary access road to the turbines needed to be constructed and are permanent. The temporary access roads were primarily compaction of agricultural soils. Where necessary, the soil was disked following construction.

Since many of the area roadways have minimal ADT currently, the addition of 25 vehicle trips represent a large percentage increase (and likely would be perceptible), but would still be less than seasonal variations such as autumn harvest. The capacity of any route and Level-of-Service to the traveling public would not be impacted. Truck access to the project site was served by US Highway 2 into Rugby, which is a four-lane divided highway connecting to I-29 in Grand Forks and US Highway 83 in Minot (another four-lane divided highway to I-94 in Bismarck). From Rugby, Highway 3 to Highway 17 served as the primary truck access into the project site.

In reviewing the criteria stated in application with standards established in the Highway Capacity Manual 2000, no additional safety measures for traffic control was required. Rugby Wind, LLC probably temporarily widened public roads for 90° turn locations so trucks with cranes could turn relatively easy and faster to travel off public roads. This is a safety measure Rugby Wind provided during the project. Rugby Wind, LLC also installed gates to access roads to restrict public access to the energy conversion facility. Based on the information provided by Rugby Wind, LLC in the case file, the necessary safety measures for traffic control and the gating of project access roads restricting public access to the facility occurred. Order #23 was satisfied.

24. PPM shall advise the Commission of any extraordinary events which take place at the site of the energy conversion facility, such as a tower collapse, turbine failure, injured worker or private individual, the death of any threatened or endangered species or the discovery of a large number of dead birds or bats on the site within five business days of such event.

A March 17, 2011 Iberdrola Renewables letter (Docket #156) received by the Commission on March 21, 2011 informed the Commission that wind turbine generator G-1 suffered a rotor assembly failure on Monday, March 14, 2011. The rotor assembly came off the turbine. No one was injured. Iberdrola Renewables and the turbine manufacturer Suzlon Wind Energy Corporation were investigating the situation jointly. This is an extraordinary event notification that did occur within five business days of the event.



The Iberdrola letter stated that the failure was under investigation and when the cause was determined, the Commission would receive a follow-up memorandum. The site was shut down while they investigated the situation and inspected each turbine at the facility. The damage area was 76 feet out from the turbine. Highway 17 is located just south of turbine G-1. The design was within weather conditions of North Dakota. No memorandum was found in the case file.

A Commission informal hearing was held on April 6, 2011. Iberdrola Renewables identified that a misalignment of two parts were the cause. The hub separated off the shaft causing a disruption of power. Iberdrola has 2670 wind turbines with over 63 million operating hours and this was the first incident of this kind. The cause of this failure could have been during construction or a manufacturing issue. Seven bolts were replaced on 4 machines that were found that did not pass both the torque check and integrity test during the investigation after the extraordinary event. The Commission requested a drawing of the hub to shaft from Iberdrola. No drawing was found in the case file. Iberdrola said the final report was to be issued in a May time frame and would provide a copy to the Commission. No final report was found in the case file. The Commission should request a copy of the final report and the drawing of the hub to shaft for turbine G-1.

In the application (Docket #10, page 182/276) the siting applicant submitted a draft protocol for a post-construction (Appendix C.5) monitoring of avian and bat mortality program. Fatality monitoring was to begin once all turbines were constructed and commercially operational for at least the first year after from March 1 to October 1st. All fatalities were to be documented in a report including species and number found, dates of mortality, turbines associated with mortality, and an assessment of turbines and /or turbine strings that cause disproportionate rates of mortality. Rugby Wind, LLC should provide the Commission with a copy of these yearly reports for verification that death of any threatened or endangered species or the discovery of a large number of dead birds or bats did not occur as part of completion of Order #24 post-construction inspection.

Iberdrola Renewables should provide a final report for the wind turbine generator G-1 rotor assembly failure on March 14, 2011 and a drawing of the hub to shaft assembly as stated in their testimony during the April 6th, 2011 hearing. The Commission should request any information Iberdrola has documented on dead birds or bats due to the wind farm. Once this information is obtained and reviewed by the Commission, Order # 24 can be completed as of the post construction inspection.

25. PPM shall implement a procedure for how complaints concerning the proposed energy conversion facility will be handled by PPM.

Mr. McIntire's complaint was addressed as Order #7.



No other record of a complaint concerning the energy facility was found in the case file. The Commission should request a copy of the written procedure or a letter stating how complaints concerning the energy facility were handled or would have been handled if a complaint had occurred. Once PPM provides this procedure, Order #25 is complete.

26. PPM shall work with landowners and residents to mitigate any increase in television and residential radio interference that results from the construction of the energy conversion facility.

In March of 2005 HDR Engineering Inc. (HDR) received authorization from PPM Energy (PPM) to conduct a microwave interference study of the Rugby Wind Project. HDR requested that Comsearch conduct a microwave interference study and calculate the worst case Fresnel Zone on each of the beam paths. Comsearch calculate the Fresnel Zone based on a proposed 80 m turbine and a maximum 82 m rotor diameter. The final turbine used for the project had a hub height of 79 meters, rotor diameter of 88 meters. The final wind turbine design parameters changes may change the results of the reports evaluations.

To maximize receiver strength, obstacles should be removed from the radio frequency line of sight. The strongest signals are on the direct line between transmitter and receiver and always lie in the first Fresnel zone. If a radio wave is unobstructed, it will travel in a straight line from the transmitter to the receiver. But if there are obstacles near the path, the radio waves reflecting off those objects may arrive out of phase with the signals that travel directly and reduce the power of the received signal. Sometime reflection can enhance the received signal when the reflection and direct signal arrive in phase. Fresnel Zone calculations provide a means to calculate where the zones are, where a given obstacle will cause mostly in phase or mostly out of phase reflections between the transmitter and the receiver.

The Executive Summary –Wind Power GeoPlanner of Comsearch (application Docket #10 Appendix C.2) identified four microwave paths that intersect the project area or area of interest. The calculated Worst Case Fresnel Zones (WCFZ) for each microwave path should be avoided by not placing wind turbines in this path. Latitude and longitude values for turbine locations and turbine blade radius were not given to Comsearch for them to provide a detailed interference study, which considers the vertical Z-height clearance objectives. The four microwave beam paths are located in T156N R72W Sections 3-8. The final constructed wind turbines were located in T157N and T158 N R73W, R72W, and R71W. Based on the Fresnel Zone calculations, the final turbine locations should not affect microwave interference. Comsearch identified 68 land mobile sites that fell within the Rugby wind project boundaries. Their report stated that the land mobile sites will not be affected by the turbine placement within the boundaries.



Rugby Wind, LLC should have Comsearch perform analysis given the exact location of the wind turbines and final turbine heights to provide a detailed interference study. However, turbine sites were located in townships out of the microwave paths so interference should not be a problem.

By the Commission establishing exclusion and avoidance areas, these restrictions aid in reducing the potential for impacts on radio and television reception. Since no impacts to microwave or land based telecom systems are anticipated, no mitigation should be required.

The potential for impacts on radio and television reception, and other communication or electronic control facilities were evaluated. No radio or television signal interference was anticipated because of the differences in frequency of the signals. The application identified no impacts to radio and television reception or other communication or electronic control facilities were anticipated due to the wind turbine facility.

No residences were identified within 750 feet of an occupied residence. No record of television or residential radio interference was found in the Commission's case file. Keitu conducted a field check of radio interference during the post construction field inspection and found no interference problems. Order #26 is completed.

27. PPM shall obtain approval from the Commission or from Commission staff prior to any changes in structure locations.

Their initial plan was to install 100 GE 1.5 MW turbines. In the application (Docket #10) of June 15, 2005, turbines were relocated and renumbered. On August 26, 2005, a proposed turbine layout map (Docket #59) was sent to the Commission for the hearing. On August 14, 2008 (Docket #96) the siting applicant notified the Commission by letter that plans had changed and they planned to install 71 Suzlon 2.1 MW S88 turbines, totaling 149.1 MW. On August 19, 2008 (Docket # 97) Iberdrola Renewables, Inc. sent a letter requesting approval of the turbine site locations depicted on the layout comparison map of August 14, 2008. On September 10, 2008 (Docket #105) the Commission approved the turbine site plan changes filed on August 14, 2008.

On November 11, 2008, documentation (Docket #109) was supplied to the Commission about the general contractor Wanzek Construction, Inc. requesting to Joe Melsha, PE to relocate turbine one as it was located between two hills causing a drainage issue. Wanzek wanted to move the tower 100 to 150 feet to north or east. Joe Melsha replied that A-1 cannot be relocated as requested. Turbine A-1 was to be replaced with Alt-31 (turbine G-7) location. Turbine A-1 was not to be built. No documentation was found in the case file that Rugby Wind requested approval or received approval from the Commission to replace turbine A-1 with turbine G-7 until January 8, 2009.



On November 26, 2008 documentation (Docket #113) was supplied to the Commission about relocation of turbine R4 due to cultural resource area. Relocation of the turbine R-4 was approved 50 feet west as per Joe Melsha, PE.

On December 3, 2008 Dennis Kuhns, Iberdrola Renewables Acting Site Manager, sent Mr. J. Lein with the Commission an email (Docket #14) about notification of turbine relocations. Rugby Wind LLC wanted to be sure that the Commission was up to date and current with the status of turbine relocations. The email apologized for any confusion concerning the reporting of these to the NDPSC. The following list of turbines was relocated by Rugby Wind, LLC without PSC approval at that time:

- A-3 – 50 feet due north to help stay clear and out of the wetland areas.
- R-4 – 50 feet due west to help stay clear and out of the cultural resource area.
- A-1 got moved to the G-7 location because of the A-1 location was not constructible.
- N-1 – 50 feet WNW for constructability and deliveries.
- J-2 – Because of the 3 rotor minimum that Sulzon requires, the distance or direction was sent to the Commission earlier.
- Q-3 – 50 feet due south to help with constructability for the road alignment with the field and for the road to access the turbine.

On December 4, 2008 Dennis Kuhns, Iberdrola Renewables Acting Site Manager, sent Mr. J. Lein with the Commission a follow-up email (Docket #115) wanting to touch base and ascertain that the Commission received the full disclosure of the turbine relocations that he had sent earlier in the week. Mr. Kuhns also mentioned they would be shutting down construction until the next spring. Jerry R Lein of the Commission sent a thank you reply email (Docket #115) for the request for approval of the turbine relocation in the December 3, 2008 email. He also stating to Mr. Kuhns that the turbine location changes were currently under staff review and advised him that no changes can be made to turbine locations until a Commission approval is received. The weekly progress report for the week ending on 12-06-08 stated the 50% of the foundations had been poured. On January 8, 2009 (Docket #118) the PSC approved the structure changes identified in the December 3, 2008 email.

Based on the December 3, 2008 email (Docket #14) of turbine relocation to the Commission, Rugby Wind, LLC did not obtain approval from the Commission or Commission staff prior to any changes in structure locations. Dennis Kuhns of Iberdrola Renewables stated that 7 turbines had been relocated by December 3, 2008. The Commission's approval of these relocations was approved on January 8, 2009. Order #27 was not followed.



28. PPM shall provide the Commission with as-built drawings post construction.

On June 21, 2010 PPM (Rugby Wind, LLC) provided the Commission design specifications and final drawings for as built (Docket #122). During the post construction field inspection it was noted that some of the locations were different on the as built maps (Dwg No. RUG-E-510-01 to RUG-E-510-21 of Docket #122) compared to what was constructed in the field. The following items were noted:

- The road between turbine E2 and E3 is not constructed in the location of the as-built drawing RUG-E-510-07.DWG. The constructed north/south road is 800 feet east of the as built map. The overall as built Civil Site Plan has the as built drawing correctly. The new location of the road should have a cultural inventory completed prior to construction of the road and Rugby Wind should submit this documentation to the Commission.
- The road into turbine A5 from 78th Street was constructed 380 feet east of the as built drawing RUG-E-510-01.DWG. The overall as built Civil Site Plan has the as built drawing correctly. The new location of the road should have a cultural inventory completed prior to construction of the road and Rugby Wind should submit this documentation to the Commission.
- The road from G6 to G7 comes to G7 more from the south than in as built Drawing RUG-E-510-12.DWG. Original Class III Cultural resources inventory would have covered this change.

These three access roads as built should be corrected to its proper constructed location and resubmitted to the Commission for their case file as part of completion of Order #28.

The substation as built drawing was inspected to be though and complete. The 34.5 kV transmission overhead as built was inspected and was though and complete. No as built drawing was submitted for wind turbines S-4 and S-5 in Township 157 North, Range 72 West, Section 1. PPM must submit an as built drawing for this section to complete part of Order #28.

29. The authorization granted by the Certificate of Site Compatibility shall be effective for the life of the project but is subject to modification by order of the Commission if deemed necessary to further protect the public or the environment.

On August 22, 2008 the Commission received a name change letter (Docket#98) requesting the Commission to reissue the Certificate of Site Compatibility in the name of Rugby Wind, LLC. On December 3, 2008 (Docket #112) the Commission approved a corrected First Reissued Certificate recognizing a name change to "Rugby Wind, LLC". The Certificate was reissued in Docket # 116.

Should the Commission deem necessary in the future to modify the corridor certificate and route permit it can do so if deemed necessary to further protect the public or the environment. Case File PU-05-47 does not contain any information that the Commission should deem necessary to modify the Certificate of Site Compatibility at the time of this post construction inspection.