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PUBLIC SERVICE COMMISSION

January 23, 2012

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

Re: Case No. PU-05-305 Contract No. PU-599-10
Rugby Wind, LLC (PPM Energy, Inc.)
230 kV Transmission Line 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-05-305.

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



**Rugby Wind, LLC (PPM Energy, Inc.)
230 kV Transmission Line
(Pierce County, ND)**

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

Executive Summary

The US Fish and Wildlife Services in its January 10, 2005 letter 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 not to disrupt waterfowl or other wildlife during nesting season. According to a weekly progress report (Docket #94) transmission line construction started on June 6 2009. Therefore, construction started during late breeding season. Rugby Wind LLC (PPM) did not follow the USFWS recommendation or their application statement of not starting during construction breeding season which is part of Order #4.

No record was found in the case file PU-05-305 of the Class III Cultural Resources Inventory for the Rugby Wind Farm Transmission Line Project. No record was found of the letter of correspondence of September 6, 2005 from HDR Engineering, Inc. about the transmission line corridor five areas inventoried for Cultural Resources or the formal report of those investigations and findings. Rugby Wind LLC (PPM) should provide the Commission a copy of these records for the case file as part of Order #4.

The North Dakota Department of Transportation asked that PPM obtain the appropriate permits and risk management documents from the ND Dept. of Transportation's Devils Lake District office. The transmission line crossed over Highway 2 just north of the Rugby Substation. A road crossing permit is required for this crossing. PPM should provide the Commission a copy of the Highway Crossing Permit as part of completion of Order #4.

PPM was to provide the Public Service Commission a Ten-Year Plan by July 2005 according to the consolidated application. No record of the Ten-Year Plan being submitted to the Commission was found in the case file. The Commission should verify that Rugby Wind LLC (PPM) has submitted its 2005 plan and has been sending a ten-year plan annually as part of completion of Order # 4.

At the preconstruction meeting of May 19, 2009 (Docket #89) under comment # 4, Tim Seck (Iberdrola Developer) was to confirm that the ND PSC is in receipt of all other jurisdictional permits obtained for the project. No documentation was found in the case file that all permits



were obtained for the project by the Commission. Rugby Wind LLC (PPM) should provide confirmation that the ND PSC has receipt of all other jurisdictional permits obtained as part of completion of Order #4.

The six tree removal sites along the transmission line were located during the post construction field inspection. After the second year of three years of tree 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 the survival rate is less than 75%. Once the third year tree monitoring is submitted to the Commission in 2012, the Commission can rule on Order #16.

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

Preliminary Statement

PPM Energy, Inc. (PPM) constructed and operates an approximately 9.5 mile (15.3 km), 230,000 volt (230 kV), three-phase alternating current electric transmission line from a proposed wind farm substation located in Section 28 of Spring Lake Township in Pierce County, to the Rugby Substation east of Rugby, North Dakota. The purpose of the transmission line is to transmit the energy generated by the proposed Rugby Wind Farm Project to the transmission system.

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-05-305.



The Commission orders:

1. PPM's application for a waiver of procedures and time schedules is granted.

On March 9, 2005, the Commission acknowledged PPM Energy, Inc.'s Letter of Intent and granted PPM Energy, Inc.'s request to shorten the time period for filing a siting application to one day (Docket #06). Order # 1 is complete.

2. Certificate of Compatibility for a Transmission Facility Corridor No. 89 is issued to PPM.

On September 7, 2005 the Commission designated a transmission facility corridor for PPM Energy, Inc.'s transmission line and associated project substation described as: A corridor approximately one to three miles wide extending generally around and along a line beginning in the NW ¼ of Section 21, Township 158N, Range 72W and extending approximately 9.5 miles south to the NE ¼ of Section 7, Township 157N, Range 72. The certificate (Docket #61) was issued in accordance with the Order of the Commission in Case No. PU-05-305 dated September 7, 2005, and was subject to the conditions and limitations noted in the order.

On August 21, 2008 the Commission received a name change letter (Docket#78) requesting the Commission to reissue the Certificate of Corridor Compatibility for Transmission Facility Certificate Number 89 in the name of Rugby Wind, LLC. On December 3, 2008 the Commission reissued the Certificate of Corridor Compatibility Number 89 (Docket # 85). Order # 2 is complete.

3. Route Permit for Construction of a Transmission Facility No.99 is issued to PPM granting authority to construct the proposed transmission line and related project substation.

On September 7, 2005 the Commission designated a transmission facility route for PPM Energy, Inc.'s transmission line and associated project substation described as: A 230 kV transmission line beginning at the project substation in the NW ¼ of Section 28, Township 158N, Range 72W extending south approximately 0.9 miles before extending southeasterly approximately 1.9 miles to the SW ¼ of Section 3, Township 157N, Range 72W and then extending south approximately 2.5 miles to the NE ¼ of Section 22, Township 157N, Range 72W and then extending southwesterly approximately 0.7 miles before extending south approximately 3.5 miles to interconnect with the existing Rugby Substation in the NE ¼ of Section 7, Township 156N, Range 72W. The certificate (Docket #60) was issued in accordance with the Order of the Commission in Case No. PU-05-305 dated September 7, 2005, and is subject to the conditions and limitations noted in the order.



On August 21, 2008 the Commission received a name change letter (Docket#78) requesting the Commission to reissue the Route Permit for the Construction of a Transmission Facility Certificate Number 99 in the name of Rugby Wind, LLC. On December 3, 2008 the Commission reissued Route Permit 99 (Docket # 85). Order # 3 is complete.

4. PPM shall comply with the rules and regulations of all other agencies having jurisdiction over any phase of the proposed transmission 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 transmission line.

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. In relation to migratory birds, the USFWS asked that overhead power lines be constructed in accordance with the current guidelines for preventing raptor electrocutions. PPM coordinated with the USFWS to identify areas of concern and implemented mitigation measures to minimize impacts to migratory birds as required. In addition, the proposed line design implemented the suggested minimum 60-inch clearance for raptor species. The design structures have approximately 84 inches. 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.

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 not to disrupt waterfowl or other wildlife during nesting season. According to the weekly progress reports transmission line construction started on June 6 (Docket #94), 2009. Therefore, construction started during late breeding season. No record was found in the case file that the USFWS was notified of starting during breeding season or that a biologist was on site during construction of the week of June 6 through July 15, 2011. Rugby Wind LLC (PPM) did not follow the USFWS recommendation or their application statement of not starting during construction breeding season as required for part of Order # 4.

PPM had reviewed cultural resources information on file at the SHPO and prepared a Class I Cultural Resources Inventory. A review of 14 documented studies and additional records at SHPO identified one previously recorded archaeological resource and one archaeological site lead within one mile of the new transmission line corridor. There were no previously identified cultural resources within the project site.

On August 17, 2005 SHPO authored a letter (Docket #47) after reviewing the Class III Cultural Resources Inventory for the Rugby Wind Farm Transmission Line Project, Pierce County, ND. They determined the level and scope of cultural resource investigations completed to date was appropriate. SHPO looked forward to receiving NDCRS forms for the isolated find and the farmstead described in the report. They concurred that neither was significant historic property nor eligible for listing in the National Register of Historic Places. Also, they concurred that the five areas identified warrant additional efforts and they wait reporting on those investigations.

On September 7, 2005 SHPO authored a letter (Docket #59) that they reviewed the letter of correspondence of September 6, 2005 from HDR Engineering, Inc. about the Transmission Line Corridor-Five Areas inventoried for Cultural Resources. They found the HDR letter of correspondence acceptable. The level and scope of cultural resource investigations was acceptable for the five (5) remaining areas inventoried that are associated with the transmission line corridor, as outlined in the correspondence. SHPO concurred with the recommendations provide, and they wait the formal reporting on those investigations and findings.



No record was found in the case file PU-05-305 of the Class III Cultural Resources Inventory for the Rugby Wind Farm Transmission Line Project. No record was found of the letter of correspondence of September 6, 2005 from HDR Engineering, Inc. about the Transmission Line corridor Five Areas inventoried for Cultural Resources or the formal report of those investigations and findings. Rugby Wind LLC (PPM) should provide the Commission a copy of these records for the case file as part of Order #4.

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 20' x 20' maximum area may have been disturbed around 71 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). The 230 kV transmission line route was modeled using the Bonneville Power Administration Corona and Fields Interactive 1989 Experimental (CFI8X) model to evaluate audible noise from high voltage transmission lines. Where possible, the CFI8X model was executed in a worst-case manner, to ensure that audible noise was not under-predicted. This involved adjusting the orientation of phase angles used in the CFI8X model. The nearest sensitive receptor to the proposed route is approximately 550 feet where noise from the transmission line was predicted to be below rural background levels. 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 that PPM obtain the appropriate permits and risk management documents from the ND Dept. of Transportation's Devils Lake District office. The transmission line crossed over Highway 2 just north of the Rugby Substation. A road crossing permit is required for this crossing. PPM should provide the Commission a copy of the Highway Crossing Permit as part of completion of Order #4.

The North Dakota State Water Commission asked that waste material be disposed of properly. No floodplain was identified along the transmission route. In the NPDES permit required for the project, PPM addressed proper disposal of waste materials. Rugby Wind LLC (PPM) implemented proper disposal of waste materials as identified in the permit.



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. The NRCS encouraged PPM to consider the purposes of FPPA in the Site Selection (Docket # 10 Appendix D of application). 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 NRCS identified tree replacement species for the project.

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 be 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.

PPM was to provide the Public Service Commission a Ten-Year Plan by July 2005 according to the consolidated application. No record of the Ten-Year Plan being submitted to the Commission was found in the case file. According to 49-22-04 Ten-year plans of the Energy Conversion and Transmission Facility Siting Act, every utility that owns or operates, or plans within the next ten years to own, operate, or start construction on any facility shall annually develop a ten-year plan. On or before July first of each year, the utility shall submit its ten-year plan to the Commission. The Commission should verify that Rugby Wind LLC (PPM) has submitted its 2005 plan and has been sending a ten-year plan annually as part of completion of Order # 4.

At the preconstruction meeting of May 19, 2009 (Docket #89) under comment # 4, Tim Seck (Iberdrola Developer) was to confirm that the ND PSC is in receipt of all other jurisdictional permits obtained for the project. No documentation was found in the case file that all permits were obtained for the project by the Commission. Rugby Wind LLC (PPM) should provided confirmation that the ND PSC has receipt of all other jurisdictional permits obtained as part of completion of Order #4.



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 four items and the Commission to discuss PPM not following the animal breeding season recommendations of the USFWS to complete Order #4.

- 5. 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 #89) was held on May 19, 2009. Attendees on the conference call were: Jerry Lein ND PSC, Tim Seck — Iberdrola Developer, Keith Powers — Iberdrola Project Manager, Sarah Emery — Iberdrola Environmental/Permits, Chris Hunt — Iberdrola Construction – Electrical, Raymond Fletcher — Iberdrola Construction Site Manager, and Randall Christiansen — Great Southwestern Construction — Project Manager. Jerry Lein reviewed the entire list of Orders for Case file PU-05-305. Weekly Status updates started the week of May 17-23, 2009 (Docket 91). Wind tower and collection substation work began that week. Construction as defined in provision 49-22-03 of the Energy Conversion and Transmission Facility Siting Act for the transmission line did not begin until the week of June 1st-6th, 2009. Therefore, construction of the transmission line did not begin until after the preconstruction conference. Order # 5 was therefore followed.

- 6. PPM shall submit the final transmission line plan and profile to the Commission at least 60 days prior to the preconstruction conference for approval.**

The final transmission line plan and profile drawings were submitted to the Commission on September 23, 2005 (Docket #67). On May 19, 2009 PPM (Rugby Wind, LLC) sent a revised plan and profile drawings. On May 19, 2009; PPM (Rugby Wind, LLC) issued updated proposed plan and profile drawings (Docket # 87). On May 21, 2009 the Commission staff approved the location changes (Docket # 93) and the Commission approved the location changes on June 3, 2009 (Docket #95). The preconstruction meeting (Docket #89) was held on May 19, 2009. The September 23, 2005 final transmission line plans were submitted over 60 days before the preconstruction meeting on May 19, 2009. Order # 6 was followed.

- 7. PPM shall inform the Commission of its intent to start construction on the transmission facility prior to the commencement of construction, and, once construction has started, PPM shall keep the Commission updated of construction activities on a weekly basis.**

On May 13, 2009 the Commission was informed by email (Docket #85) that Rugby Wind LLC (PPM) hopes to start as early as June 1st, 2009. At the preconstruction meeting on May 19, 2009 it was noted that "Rugby Wind LLC to send notice to start construction to the PSC in addition to minutes of the meeting. Rugby Wind LLC is also required to submit to the PSC weekly construction status reports for the wind farm and transmission line." No documentation was found in the case file on a notice to start construction after the May 19, 2009. However, intent to start was issued on May 13, 2009 (Docket #85). Therefore, Rugby Wind LLC (PPM) informed the Commission of its intent to start construction on the transmission facility before commencement of construction the week of June 6th, 2009.

Once construction started, weekly progress reports (Docket #94-#115) were sent to the Commission updating activities. Order # 7 was followed.

- 8. PPM shall construct and operate the transmission facility in the manner described in its Application and at the hearing, and in accordance with all applicable safety requirements.**

PPM proposed in its application that transmission line will be designed to meet or surpass all relevant state codes, National Electric Safety Code (NESC), Rural Utilities Service (RUS), Avian Power Line Interaction Committee (APLIC) raptor-safe design standards, and PPM company standards. Appropriate safety standards will be met for construction and installation and will be followed during and after construction.

Temporary guard or clearance poles were installed as needed over existing distribution or communication lines, streets, roads, highways or other obstructions, after any necessary notifications were made and permits obtained during construction.

Proper safeguards were implemented during construction and operation of the facility. The project was designed to meet local, state, NESC, PPM, and RUS safety standards. The design calculations of the transmission plan and profile was accomplished with PLS-CADD software based on the drawings provided. The NESC is built in to PLS-CADD software. The structures used were standard RUS design. RUS structure designs are based on compliance with NESC standard. The design met applicable safety requirements and was stamped by a professional engineer registered in North Dakota. Construction crews complied with local, state, NESC, PPM, and RUS standards regarding the installation of facilities. The transmission line was equipped with protective devices such as breakers and relays at the substations to safeguard the public from



the transmission line if an accident occurs or if a structure or conductor falls to the ground during operation. The protective equipment at the substations would de-energize the line should an accident occur. In addition, the Rugby Wind Farm Project Substation and Herd Lake Substation are fenced and locked with access limited to authorized personnel. No changes occurred in the original design based on review of the as built drawings.

Once in operation, electric fields and magnetic fields due to the power line occur. While the general consensus is that electric fields pose no risk to humans, the question of whether exposure to magnetic fields potentially can cause biological responses or even health effects continues to be the subject of research and debate. Electric forces and magnetic fields were modeled by Rugby Wind LLC (PPM) as a proposed single circuit 230 kV for the route and were documented in the application. Electric fields were predicted to decrease to background levels of approximately 0.1 kilovolt per meter (kV/meter) within 200 feet of the transmission line and magnetic fields were predicted not to exceed background levels of 500 milligauss (mG). The nearest sensitive receptor to the proposed route is approximately 550 feet where EMF from the transmission line was predicted to be significantly below background levels. Proper modeling for electric fields and magnetic fields should have included the new 230 kV transmission PPM line paralleling the existing 230 kV Excel Energy transmission line and not as a proposed single circuit KV line. Two lines in parallel can be additive causing maximum fields to occur. Magnetic fields are an issue of the transmission lines currents. No impacts are anticipated even with the lines in parallel. Rugby Wind LLC constructed and operates the transmission facility in a manner described in its application and at the hearing, and in accordance with all applicable safety requirements. Order # 8 is being followed.

- 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.**

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 Commission's file. Order # 9 was followed.



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

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.

- 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 just north of the northern edge of the project area. Highway 3 is located approximately 3 miles west of the project and runs north-south. The southern end of the transmission line crosses U.S. Highway 2.

Constructing the transmission line required temporary access along the route. An access road approximately 20 feet (6.1 meters) wide; no major grading or filling was required since the access road was only be needed during construction. The traffic impacts were considered negligible due to the construction. The temporary transmission line construction access road followed the new 230 kV transmission line route. Impacts from transmission line construction were primarily compaction of agricultural soils. Where necessary, the soil was to be 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 northern portion of 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.

According to the weekly progress report (Docket #94) of May 30, 2009 offsite public road upgrades were required for this project. Rugby Wind LLC (PPM) upgraded roads prior to

construction. 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 of June 6, 2009 on the transmission line facility and was completed on September 9, 2009 except for a minor punch list of items. The transmission line was energized on September 11, 2009. The minor punch list was completed by November 7, 2009. In reviewing the weekly progress reports (Docket #91, 92, 94-115); no record was found that weather was such that construction had to be suspended on the transmission line facility. This project took 15 weeks during ideal summer months with no suspended construction due to weather. Therefore, Order # 12 was followed.

13. Reclamation along the right-of-way shall be continuous and coordinated with construction.

According to the application (Docket #10), construction crews were to limit ground disturbance wherever possible and will employ appropriate erosion control measures. Erosion control facilities were installed on the project the week of June 6, 2009 (Docket #94). Upon completion of construction activities, landowners were contacted to determine if any additional restoration due to construction was necessary. Disturbed areas were restored to their original condition to the maximum extent practicable and as negotiated with the landowner. Post-construction reclamation activities include removing and disposing of debris (trees, etc.), dismantling all temporary facilities (including staging and lay down areas), leveling or filling tire ruts, and reseeding areas disturbed by construction activities with vegetation similar to that which was removed.

Most of the construction activity was limited to the area immediately around each structure. Little additional ground disturbance was necessary at the structure sites. The total disturbed area in the vicinity of Rugby Wind Farm Transmission Line at each structure was to be confined to an area of 100 square ft. Temporary impacts due to construction around the structure were estimated at approximately 2,000 square ft. Access roads were approximately 20 feet wide and, in general, would not require any grading or excavation.

This project took 15 weeks to complete. The majority of the reclamation occurred from September 9, 2009 to October 24, 2009. Reclamation along the transmission line facility was coordinated with construction. Order #13 was followed.

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

Rugby Wind LLC (PPM) worked closely with the landowners, the USFWS, and other agencies in finalizing transmission 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 transmission line did not change the land use in the corridor. Order #14 was done in accordance with NRCS and USFWS recommendations.

- 15. PPM's obligation for reclamation and maintenance of the right-of-way shall continue throughout the life of the transmission line.**

PPM will periodically use the right-of-way to perform inspections, to maintain equipment and to make repairs over the life of the line. PPM 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 transmission line 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 # 15 is being followed.

- 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 off the right-of-way 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 2006, 2007, and 2008 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 application reported that approximately 1.9 acres of woodlands and windbreaks would be impacted in six locations along the route. On December 27, 2010 Rugby Wind LLC (PPM) sent a letter (Docket #123) to the Commission about the status of the tree survey report. Overall 289 trees were removed due to construction of the Project. 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) 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. The memo (figure 2) also had a map of the tree replacement locations on 9/29/11. This map showed dead and live trees.

The six tree removal sites along the transmission line were located 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 will hopefully be 75% or greater. 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 Order #16 is complete.

17. PPM shall work with landowners and residents to mitigate any increase in television and residential radio interference that results from the path of the transmission line.

The potential for impacts on radio and television reception, and other communication or electronic control facilities were evaluated. No radio or television signal interference directly from the transmission of electricity was anticipated because of the differences in frequency of the signals. It is possible that localized interference could occur as a result of electric discharges across small gaps in the transmission system hardware or from the development of partial electric discharges from the line itself (generally referred to as "corona"). The use of corona-free hardware and routine transmission line maintenance should eliminate the problem. The application identified no impacts to radio and television reception or other communication or electronic control facilities were anticipated due to the construction of the line.

Following construction, there may be a minimal amount of sound from the proposed facility as the result of corona effects. Corona effects occur when air molecules near conducting wire are ionized due to changes in the electric field intensity at the conductor surface, producing audible noise, radio noise, small amounts of ozone, and corona-related energy loss. Corona-generated audible noise from transmission lines and substations is generally described as a crackling or hissing noise. This noise is most noticeable when conductors are wet (as a result of precipitation). During dry weather, noise is barely perceptible, creating only a sporadic crackling sound. No noise was heard along the transmission line route during the post construction inspection.

No residences were identified in the corridor within 500 feet of the route in the application. Landowner Ray and Marion Halvorson granted a voluntary waiver (Docket #74) to Rugby Wind LLC (PPM) on January 31, 2006 for the transmission line route before they moved a manufactured home in within 500 feet of the proposed transmission line after the application was approved by the Commission. No record of television or residential radio interference was found



in the Commission's case file. Keitu conducted a field check of radio interference along the transmission and found no interference problems. Order #17 is completed.

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

Twenty Nine acres of cropland was temporary required during construction with 0.2 acres permanently impacted due to the transmission line structure placement. Cropland usually does not have fences and gates around it. A post construction field inspection was done in 2012 with inspection of fences and gates occurring. Fences and gates looked repaired and in good working order. No complaints were found in the case file from the landowners that fences and gates were not repaired once construction was completed. Based on post construction field inspection and no complaints found in the case file, Order # 18 has been satisfied.

19. PPM shall work with landowners to determine and implement appropriate damage mitigation measures.

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 a landowner meeting to provide an update on, and to answer questions about, the project.

Approximately 29 acres of agricultural land was temporarily removed from production during transmission line construction. Permanent agricultural land conversion associated with the transmission line structures is approximately 0.2 acres for the entire route. Landowner compensation was established by individual lease agreements. A typical wind lease (Docket #39) was submitted to the Commission and is part of the case file. As stated above, agricultural areas surrounding transmission line structures is still farmed following construction of 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 a proposed route is identified, the land agent obtains an easement/land lease to construct a facility. After the easement/land lease is signed and other proper paperwork and resources are in place, construction can begin. Part of the proper paperwork and resources are mitigation measures to reduce adverse impact. Once construction is complete, the land agent meets with the landowners to identify any damages or concerns that they may have and for Rugby Wind LLC (PPM) to repair the damages or compensate for these damages to maintain good landowner relationships. Most easement/land lease has a damage clause for damage mitigation measures.



General mitigative measures/items are 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 are required to follow these measures during construction. These measures help reduce damages and were followed.

Since no landowner complaint documentation was found in Case File No. PU-05-305, Order # 19 has been satisfied.

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

PPM issued the proposed plan and profile drawings (Docket #67) on September 23, 2005. A memorandum of approval (Docket #72) was issued on October 7, 2005 by the Commission staff. On May 19, 2009; Iberdrola Renewables issued updated proposed plan and profile drawings (Docket # 87). Iberdrola completed a refinement of the transmission line structure locations that has caused a number of shifts in the proposed structure locations. The majority of the shifts were meant to put the proposed transmission structures in closer alignment with the existing Xcel line which will make it easier for farmers to cultivate around the structures. The remaining few shifts were designed to either avoid wetlands further delineated, ensure safe crossings of the railroad and better spacing going out of the Iberdrola substation. On May 21, 2009 the Commission staff approved the location changes (Docket # 93) and the Commission approved the location changes on June 3, 2009 (Docket #95).

PPM (Rugby Wind, LLC) Power obtained approval from the Commission or Commission staff prior to any changes in structure locations. Order #20 is completed.

21. PPM shall provide the Commission with a copy of the design specifications for construction of the transmission line showing the location of the transmission line as built.

On June 21, 2010 PPM (Rugby Wind, LLC) provided the Commission design specifications and final plan and profile drawings for as built (Docket #122). Order # 21 is completed.



22. The authorizations granted by the corridor certificate and route permit are subject to modification by order of the Commission if deemed necessary to further protect the public or the environment.

On August 21, 2008 the Commission received a name change letter (Docket#78) requesting the Commission to reissue the Route Permit for the Construction of a Transmission Facility Certificate Number 99, and Certificate of Corridor Compatibility for Transmission Facility Certificate Number 89 in the name of Rugby Wind, LLC. On December 3, 2008 the Commission reissued the Certificate of Corridor Compatibility Number 89 (Docket # 85) and reissued the Route Permit 99 (Docket # 85).

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-05-305 does not contain any information that the Commission should deem necessary to modify the Certificate of Corridor Compatibility (Number 89) and Route Permit (Number 99) of February 25, 2009.