

STATE OF NORTH DAKOTA
PUBLIC SERVICE COMMISSION

Otter Tail Power Company
Amend – Luverne Wind Farm Upgrade Project
Siting Application – Steele County

Case No. PU-23-176

ORDER

_____, 2023

Preliminary Statement

On October 30, 2008, in Case No. PU-08-34, the Public Service Commission (Commission) issued Findings of Fact, Conclusions of Law and Order (2008 Order) and Certificate of Site Compatibility No. 9 to M-Power, LLC, designating a location in Steele County, North Dakota for the construction, operation, and maintenance of up to 33 1.5-megawatt (MW) wind turbine generators, collection substation, and associated facilities.

On May 20, 2009, in Case No. PU-09-73, the Commission issued an Order Reissuing Certificates and Permit (2009 Order) approving a request to transfer the 49.5 MW project to Otter Tail Power Company (OTP), and issuing First Reissued Certificate of Site Compatibility No. 9 to OTP for the 49.5 MW facility (Project).

On May 8, 2023, OTP filed an Application to Amend Orders and Certificates, and the Certification of Bradley E. Tollerson, with accompanying documentation, pursuant to N.D.C.C. § 49-22-03(3)(a)(4) regarding plans to improve the turbines operating at the Project (Upgrade Project) by replacing the existing General Electric (GE) 1.5 MW turbine blades (82.5 meter/270.7 feet rotor diameter), hub, and gearbox with an upgraded technology package of GE 1.6 MW turbine blades (97 meter/318.2 feet rotor diameter), hub, and gearbox. The filing included a request for a variance from the Exclusion Area of one and one-tenth the height of the turbine from the property line of a nonparticipating landowner for two turbines, subject to OTP filing waivers executed by the affected nonparticipating landowners.

On May 8, 2023, OTP filed an Application for Protection of Information related to cultural resource location information.

On June 6, 2023, the Commission issued a Notice of Filing and Notice of Opportunity for Hearing, requesting comments and requests for hearing by July 14, 2023. The Notice identified the following issues to be considered:

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

2. Are the proposed facilities compatible with the environmental preservation and the efficient use of resources?

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

On June 20, 2023, the North Dakota Department Environmental Quality filed comments.

On July 10, 2023, the State Historical Society of North Dakota (SHSND) filed comments.

On July 11, 2023, the North Dakota Game and Fish Department filed comments.

On July 13, 2023, the Commission held an Informal Hearing to discuss the application with OTP. At the Commission's request, SHSND participated in the Informal Hearing.

Discussion

1. OTP is a public utility company authorized to conduct business in North Dakota. OTP provides retail electric service North Dakota.

2. OTP currently owns and operates 33 GE 1.5 MW turbines at the Project, with a nameplate capacity of 49.5 MW.

3. OTP proposes to improve the 33 turbines at the Project by replacing the current GE 1.5 MW turbine blades (82.5 meters/270.7 feet rotor diameter), hub, and gearbox with new technology. The Upgrade Project will include new GE 1.6 MW generator technology and new 97 meter (318.2 feet) rotor diameter blades, hub, and gearbox.

4. The Upgrade Project's total nameplate generating capacity would increase to 52.8 MW; however, OTP will limit the output at the point of interconnection to 49.5 MW in accordance with its Generator Interconnection Agreement.

5. To accommodate the potential increase in nameplate capacity, OTP requests that the Commission amend the Commission's 2008 Order (Case No. PU-08-34) and 2009 Order (Case No. PU-09-73), along with Certificate of Site Compatibility No. 9 and First Reissued Certificate of Site Compatibility No. 9, to remove the 1.5 MW per turbine limitation and the designated 49.5 MW nameplate capacity limitation.

6. All 33 of the turbines will reuse the existing 80 meter (262.5 feet) structural steel towers and existing nacelles, and as a result, turbine locations will not change. OTP plans to use the existing turbine foundations (with reinforcement, if needed), collection and

communications systems, permanent access roads, and Project substation. Other associated facilities will remain unchanged.

7. Due to the increased blade length, the total turbine tip height would be 128.5 meters (421.6 feet).

8. During installation of the upgraded equipment, existing access roads will be temporarily widened to accommodate delivery and staging of components and equipment. Temporary crane paths may also be needed to facilitate equipment removal and installation. A temporary laydown yard will also be used during installation. All activities are expected to occur within areas previously disturbed by initial construction. Temporarily impacted areas will be restored in compliance with applicable provisions of the Commission's 2008 Order (Case No. PU-08-34).

9. The Upgrade Project activities will occur wholly within the site designated by the Commission for the Project.

10. OTP has conducted a new sound assessment using a 1.6 MW turbine with a 97 meter rotor diameter and 80 meter hub height. Modeling determined that sound levels may exceed 45 dBA within 100 feet of five occupied residences. OTP has obtained and filed with the Commission copies of waivers from the owner(s) of two affected residences. With respect to the remaining three residences with modeled sound levels above 45 dBA within 100 feet, OTP will either obtain a waiver from the owner(s) of each residence or install noise-reduction technology, such as noise-reducing operating modes (NRO) and/or low-noise trailing edge (LNTE) blades as needed. Accordingly, sound levels within 100 feet of an inhabited residence or community building will not exceed 45 dBA, unless waived in writing by the owner of such residence or building.

11. OTP also conducted a new shadow flicker assessment using the 97 meter rotor diameter at the 80 meter hub height. Shadow flicker levels from the Upgrade Project will be 30 hours per year or less at all occupied residences.

12. OTP has coordinated with the SHSND. Based on recommendations made by the SHSND regarding OTP's Langdon Wind Energy Center Upgrade Project, because the Upgrade Project activities will occur primarily within areas previously surveyed for cultural resources, and all activities will occur within areas previously disturbed by initial construction, additional cultural resource surveys are not necessary, except to the extent crane paths are located in previously unsurveyed areas. If any crane paths are located outside of areas previously surveyed for cultural resources, OTP will complete cultural resource field surveys and will avoid any resources identified that are eligible or unevaluated for listing on the National Register of Historic Places (NRHP). The Upgrade Project will not impact cultural resources.

13. OTP is coordinating with the Commission and the SHSND regarding architectural history surveys for the Upgrade Project.

14. OTP provided information regarding its plan for disposal of turbine components removed in connection with the Upgrade Project. Once removed, OTP plans to have the existing blades transported to a facility for repurposing, and no blades will be deposited in a landfill.
15. The Commission's 2008 Order (Case No. PU-08-34) predates the Commission's current wind facility setback rules.
16. Two turbines (Turbines 155 and 157) do not meet the current Exclusion Area of one and one-tenth the height of the turbine from the property line of a nonparticipating landowner. OTP plans to obtain a written waiver from the affected nonparticipating landowner, and requests that the Commission grant a variance of the nonparticipating property line setback for these two turbines conditioned on obtaining and filing a copy of the written waiver with the Commission prior to installation of upgrade technology on the affected turbine. Absent receipt of a waiver, OTP will not upgrade equipment at the affected turbine.
17. Upgrade Project construction will not affect any known Exclusion or Avoidance Areas.
18. The Project is currently operating with an aircraft detection lighting system (ADLS). Subject to Federal Aviation Administration approval, OTP will continue to operate an ADLS or other technology suitable to the Commission on the Upgrade Project in accordance with N.D.C.C. § 49-22-16.4.
19. OTP will continue to comply with all applicable conditions and protections in the siting laws and rules and Commission Orders previously issued for the Project.
20. The construction, operation and maintenance of the proposed facilities at the site designated for the Project will produce minimal adverse effects on the environment and upon the welfare of the citizens of North Dakota.
21. The proposed facilities at the site designated for the Project are compatible with the environmental preservation and the efficient use of resources.
22. The proposed facility locations at the site designated for the Project will minimize adverse human and environmental impact while ensuring continuing system reliability and integrity and ensuring that energy needs are met and fulfilled in an orderly and timely fashion.

Having considered this matter, the Commission finds the Commission's 2008 Order (Case No. PU-08-34) and 2009 Order (Case No. PU-09-73), along with Certificate of Site Compatibility No. 9 and First Reissued Certificate of Site Compatibility No. 9 should be amended to remove the 1.5 MW per turbine limitation and the overall 49.5 MW nameplate capacity limitation. Therefore, the Commission issues the following:

Order

The Commission Orders:

1. The Commission's 2008 Order (Case No. PU-08-34) is amended to remove the 1.5 MW per turbine limitation and the 49.5 MW nameplate capacity limitation.
2. The Commission's 2009 Order (Case No. PU-09-73) is amended to remove the 1.5 MW per turbine limitation and the 49.5 MW nameplate capacity limitation.
3. First Amended Certificate of Site Compatibility No. 9 is issued to Otter Tail Power Company, removing the 1.5 MW per turbine limitation and the 49.5 MW nameplate capacity limitation.
4. A variance of the nonparticipating property line exclusion area of one and one-tenth the height of the turbine is granted for Turbines 155 and 157, conditioned upon OTP obtaining and filing with the Commission a copy of a written waiver from the affected landowner prior to installation of upgrade technology on the affected turbine.
5. OTP will dispose of turbine components in accordance with the disposal plan outlined in Exhibit A to the updated Certification of Bradley E. Tollerson. If solid waste disposal occurs in North Dakota, it shall be at a disposal facility permitted by the North Dakota Department of Environmental Quality – Division of Waste Management.
6. All applicable provisions and requirements in the Commission's 2008 Order, 2009 Order, Certificate of Site Compatibility No. 9, and First Reissued Certificate of Site Compatibility No. 9 (Case No. PU-09-73) continue to apply except where amended by this Order.

PUBLIC SERVICE COMMISSION

Sheri Haugen-Hoffart
Commissioner

Randy Christmann
Chair

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