

Exhibit A

Environmental and Regulatory Compliance Memorandum Amend – Luverne Wind Farm Upgrade Project Case No. PU-23-_____

Introduction

Otter Tail Power Company (Otter Tail) has retained Atwell, LLC (Atwell) to prepare this memorandum to support Otter Tail’s certification of compliance with N.D.C.C. § 49-22-03(3)(a) in connection with equipment upgrading activities (Upgrade Project) for its 49.5 megawatt (MW) Luverne Wind Farm (Facility). Otter Tail, with assistance from Atwell, analyzed the Upgrade Project with respect to environmental, cultural, and natural resources, as well as sound and shadow flicker. The following sections and referenced figures and appendices summarize the results of the analysis.

Description of the Upgrade Project

The Upgrade Project involves replacing the current General Electric (GE) 1.5 MW turbine technology with updated technology. More specifically, the Upgrade Project will consist of removing and replacing the existing GE 82.5 meter (270.7 feet) rotor diameter (RD) blades, hub, and gearbox with a new equipment upgrade package of GE 1.6 MW generator technology and 97 meter (318.2 feet) RD blades, hub, and gearbox. All 33 existing 80 meter (262.5 feet) structural steel towers will be used as well as existing nacelles and, as a result, turbine locations will not change. Otter Tail plans to use the existing turbine foundations (with reinforcement, if needed), collection/communications systems, and permanent access roads. Other associated facilities will remain unchanged.

Once removed, the existing 82.5 meter RD blades will be cut on-site to fit into legal load transportation-size pieces. Loads will be secured and/or covered or other steps will be taken to ensure materials do not escape during transport. Otter Tail’s contractor will transport the loads to an out-of-state facility that will grind the blade materials for repurposing, and no blades will be deposited in a landfill.

During installation of the equipment upgrade technology, existing access roads will be temporarily widened to accommodate delivery 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. Otter Tail currently plans to install the equipment upgrade technology in mid-2025.

Figure 1 depicts the Upgrade Project Area and layout. Figure 2 depicts the proposed turbine technology.

Compliance with Exclusion and Avoidance Areas

Exclusion Areas

Per N.D.A.C. §§ 69-06-08-01(1) and (2), the geographical areas listed in Table 1 shall be excluded in the consideration of a site for a wind energy conversion facility. Based on the Commission’s

approach in prior equipment upgrade dockets, Otter Tail confirmed the Upgrade Project’s compliance with the Commission’s current exclusion area criteria. With the exception of two turbines that are within the non-participating property line exclusion area, the Upgrade Project complies with all exclusion areas. Otter Tail identified the owners of the properties at issue and is pursuing waivers. Otter Tail requests that the Commission grant a variance conditioned upon submission of the waivers. If any landowner is not willing to grant a waiver, Otter Tail will not upgrade equipment at the affected turbine. Exclusion areas are mapped for the Upgrade Project Area on Figure 3.

Table 1: Summary of Exclusion Areas

General Exclusion Area	Present Within Upgrade Project Area?	Description
Designated or registered national: parks; memorial parks; historic sites and landmarks; natural landmarks; historic districts; monuments; wilderness areas; wildlife areas; wild, scenic, or recreational rivers; wildlife refuges; and grasslands.	None	United States Fish and Wildlife Service (USFWS) administered Waterfowl Production Areas (WPA) are located in the vicinity of the Upgrade Project Area. A minimum 0.25-mile buffer was and continues to be maintained from each WPA.
Designated or registered state: parks; forests; forest management lands; historic sites; monuments; historical markers; archaeological sites; grasslands; wild, scenic, or recreational rivers; game refuges; game management areas; management areas; and nature preserves.	None	N/A
County parks and recreational areas; municipal parks; parks owned or administered by other governmental subdivisions; hardwood draws; and enrolled woodlands.	None	N/A
Areas critical to the life stages of threatened or endangered animal or plant species.	None	N/A
Areas where animal or plant species that are unique or rare to this state would be irreversibly damaged.	None	N/A
Areas within 1,200 feet of the geographic center of an intercontinental ballistic missile (ICBM) launch or launch control facility.	None	N/A

Table 1: Summary of Exclusion Areas

General Exclusion Area	Present Within Upgrade Project Area?	Description
Areas within thirty feet [9.14 meters] on either side of a direct line between an intercontinental ballistic missile (ICBM) launch facility and a missile alert or launch control facilities to avoid microwave interference. This restriction only applies to aboveground structures, not to surface features, such as roads, or belowground infrastructure.	None	N/A
Additional Exclusion Areas for Wind Energy Conversion Facilities – Areas within:		
1.1x the turbine height from the nearest edge of an interstate or state roadway right-of-way (ROW).	None	N/A
1.1x the turbine height plus 75 feet from the centerline of any county or maintained township roadway.	Present	No turbines will be located within these exclusion areas.
1.1x the turbine height from the nearest edge of railroad ROW.	None	N/A
1.1x the turbine height from the neared edge of a 115 kV or higher transmission line ROW.	Present	No turbines will be located within this exclusion area.
1.1x the turbine height from the property line of a non-participating landowner and 3x the height of the turbine from an inhabited rural residence of a non-participating landowner, unless a variance is granted. A variance may be granted if an authorized representative or agent of the permittee, the nonparticipating landowner, and affected parties with associated wind rights file a written agreement expressing all parties’ support for a variance to reduce the setback requirement in this subsection. A nonparticipating landowner is a landowner that has not signed a wind option or an easement agreement with the permittee of the wind energy conversion facility as defined in NDCC Chapter 17-04.	Present	Two turbines would be located within the non-participating property line exclusion area. ¹ Otter Tail is in the process of obtaining waivers from the landowner(s) to support issuance of variances. No turbines will be located within 3x the height of the upgraded turbines from a non-participating inhabited residence.

¹ Note that Turbine 147 is authorized by lease agreement to overhang the adjacent parcel to the west (Berger Parcel). As such, that overhang area is participating and the turbine complies with the non-participating property line setback exclusion area.

Avoidance Areas

Per N.D.A.C. §§ 69-06-08-01(3) and (4), the geographical areas listed in Table 2 may not be approved as a site for an energy conversion facility unless the applicant shows that under the circumstances there is no reasonable alternative or (in the case of the sound limit) a waiver has been obtained. Based on the Commission’s approach in prior equipment upgrade dockets, Otter Tail confirmed the Upgrade Project’s compliance with the Commission’s current avoidance area criteria.

Avoidance Area	Present Within Upgrade Project Area?	Description
Historical resources which are not designated as exclusion areas.	None	No impacts to historical resources are anticipated. An Unanticipated Discoveries Plan has been prepared for the Upgrade Project. A copy of that plan is provided as Appendix E.
Areas within the city limits of a city or the boundaries of a military installation.	None ²	N/A
Areas within known floodplains as defined by the geographical boundaries of the hundred-year flood.	None	N/A
Areas that are geologically unstable.	None	N/A
Woodlands and wetlands.	Present	No wetlands or woodlands will be impacted by the Upgrade Project.
Areas of recreational significance which are not designated as exclusion areas.	None	N/A

² One former military missile site is located within the Upgrade Project Area. The site has been decommissioned and is no longer used for military procedures.

Avoidance Area	Present Within Upgrade Project Area?	Description
A geographic area where, due to the operation of the facility, the sound levels within one hundred feet on an inhabited residence or community building will exceed forty-five dBA. The sound level avoidance area criteria may be waived in writing by the owner of the occupied residence or the community building.	Present	Five residences were initially modeled to have sound levels in excess of the Commission’s sound standard with the Upgrade Project. Otter Tail has sound waivers from the owners of two of the residences, and is pursuing waivers from the owners of the other three residences. Additionally, Otter Tail has confirmed that the Commission’s sound standard can be met at those three residences by installing noise-reduction technology. As such, Otter Tail will comply with the Commission’s sound standard.

Setback Compliance

In addition to compliance with the setbacks set forth above, the Upgrade Project continues to comply with the setback commitments listed in Table 3, which were made at the time a Certificate of Site Compatibility was issued for the Facility.

Setback Type	Distance
Occupied Residence	1,400 feet
USFWS WPA	0.25 miles
Developed Road	400 feet or the fall zone of the wind turbine, whichever is greater
Large (lacustrine) wetland complex (greater than 50 acres)	500 feet

Socioeconomics

The Upgrade Project will have positive impacts on socioeconomics by extending the life of the wind energy facility, which, in turn, extends the time period for which landowners will receive easement payments. In addition, the Upgrade Project will create temporary construction jobs, with associated opportunities for increased local spending.

Land Use

The Upgrade Project will be constructed entirely within the previously-designated site, and turbine and other permanent infrastructure locations will remain the same. As a result, land use will also remain unchanged. The Upgrade Project will result in temporary disturbances, including temporary widening of access roads to accommodate transportation of components and equipment, a temporary laydown yard, and temporary crane paths (as needed). Temporarily impacted areas

will be restored in compliance with applicable provisions of the Commission's Findings of Fact, Conclusions of Law and Order, dated October 30, 2008 (Case No. PU-08-34) (2008 Order.)

Public Services

The Upgrade Project will result in a temporary increase in traffic in and near the Upgrade Project Area, but is not anticipated to interfere with local road use. Otter Tail will coordinate with Steele County and the townships, as appropriate, regarding local road use, will obtain all necessary road use permits, and will restore roads impacted by the Upgrade Project in accordance with the requirements of the Commission's 2008 Order and as required by Steele County and the townships.

Sound, Shadow Flicker, and Human Health and Safety

As noted above, the Upgrade Project continues to maintain a turbine setback of 1,400 feet from occupied residences. Based on an initial sound analysis, sound levels within 100 feet of five occupied residences were modeled above 45 dBA with the Upgrade Project. Otter Tail has obtained sound waivers from the owners of two of the residences. With respect to the remaining three residences, Otter Tail is pursuing waivers. Additionally, Otter Tail has confirmed that the Upgrade Project is able to comply with the Commission's sound requirement by installing noise-reduction technology, such as noise-reducing operation modes (NRO) and/or low noise trailing edge (LNTE) blades at up to eight turbines (as needed). Copies of noise waivers obtained to-date are provided in Appendix A. A copy of the sound study report completed for the Upgrade Project (using GE 1.6 MW turbines with 97 meter hub height and noise-reduction technology) is also provided in Appendix A.

At the time the Facility was permitted, the Commission did not specifically address shadow flicker. However, Otter Tail conducted a shadow flicker assessment for the Upgrade Project utilizing realistic modeling inputs. Based on the assessment, shadow flicker levels from the Upgrade Project will not exceed 30 hours per year at any occupied residences (Appendix B).

Otter Tail has submitted form 7460-1 to the Federal Aviation Administration (FAA) for each turbine (*see* Appendix C). Otter Tail will obtain Determinations of No Hazard from the FAA and will provide copies to the Commission prior to construction.

Comsearch completed a microwave study for the Upgrade Project. Based on the analysis, Comsearch found that none of the turbines would obstruct microwave beam paths in the area with the upgraded equipment (Appendix D).

The Upgrade Project will continue to comply with all safety-related and other conditions of the Commission's October 2008 Order.

Cultural and Architectural Resources

In March of 2023, staff from Atwell conducted background research at the State Historical Society of North Dakota (SHSND) for information on previously identified archaeological sites and architectural properties within one mile (1.6 km) of the Upgrade Project Area and on surveys previously conducted within the Upgrade Project Area (Appendix E – Class I Literature Review).

The Upgrade Project construction activities will occur primarily within areas previously surveyed for cultural resources, and all construction activities will occur within areas previously disturbed by initial Facility construction. Based on recommendations made by the SHSND regarding Otter Tail's Langdon Wind Energy Center Upgrade Project (Langdon Upgrade Project), if any Upgrade Project crane paths are located outside of areas previously surveyed for cultural resources, Otter Tail 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). Additionally, Otter Tail has prepared an Unanticipated Discoveries Plan, which will be implemented during Upgrade Project construction (*see* Appendix E).

Although not recommended at the time the Facility was originally permitted and constructed, in consultations with SHSND regarding the Langdon Upgrade Project, SHSND recommended completion of an architectural history survey in the vicinity of wind energy generation facilities to identify architectural resources potentially eligible for NRHP-listing and to evaluate potential impact to those resources. As a result, Otter Tail is also planning to complete an architectural history survey for this Upgrade Project. Since the Upgrade Project involves technology upgrades to existing turbines, it is not anticipated that the limited modifications will adversely affect architectural history resources. However, in the event of an adverse impact, Otter Tail will coordinate with SHSND to identify appropriate mitigation.

The Class I Literature Review, which includes the Unanticipated Discoveries Plan, has been submitted to the SHSND for review (*see* Appendix G).

Recreational Resources

The Upgrade Project will not impact any recreational resources. The Upgrade Project continues to maintain a setback of at least 0.25 miles from nearby WPAs.

Land-Based Economics

The Upgrade Project will not result in any additional long-term land impact; as a result, the Upgrade Project will also not result in any long-term impacts to agricultural use or production. Otter Tail will compensate landowners for any temporary impacts to cropland in accordance with the terms of its wind lease agreements, as applicable.

Soils

Upgrade Project construction may result in minor short-term impacts to soils within the disturbance area. During construction, short-term impacts may include soil compaction, vegetation clearing, and the potential for localized soil erosion and sedimentation. No other impacts are anticipated. Measures to control erosion will be implemented during Upgrade Project construction to avoid or minimize soil erosion. Erosion and sedimentation will be reduced by implementation of best management practices (BMPs) such as mulching, hydroseeding, wildlife-friendly erosion control blankets, silt fence installation, matting, and revegetation, as appropriate. Once construction is completed, soils will be revegetated in accordance with Natural Resources Conservation Service requirements (unless otherwise specified by the landowner and approved by

the Commission). No adverse impacts to soil resources are expected as a result of the Upgrade Project.

Geologic and Groundwater Resources

The Upgrade Project is not expected to disturb any geologic or groundwater resources.

Waterbodies, Wetlands, and Floodplain Resources

Atwell has conducted a desktop review of wetland and waterbody features identified within the Upgrade Project Area by utilizing National Wetland Inventory (NWI) maps, National Hydrography Dataset (NHD) maps, and satellite imagery. The Upgrade Project will remain within the areas previously disturbed by initial Facility construction, and no temporary or permanent impacts wetlands or waterbodies are anticipated. Existing access roads cross NHD watercourses in three locations; however, there are existing culverts at these crossing locations and, as such, no impacts to the watercourses are anticipated.

FEMA floodplains (100-year) are not mapped in Steele County. In addition, haul route turning radii design will be based on existing public roads. As such, impacts to floodplains are not anticipated.

Vegetation

No trees or shrubs will be removed in connection with the Upgrade Project. Otter Tail will comply with the site restoration and reseeding conditions in the Commission's October 2008 Order and all other applicable permitting requirements.

Wildlife

Impacts to wildlife are expected to be minimal as the proposed construction disturbance areas were previously disturbed and are of low-quality habitat. If construction activities are planned during the springtime, ground nesting bird clearance surveys in uncultivated areas will be conducted, as applicable, prior to construction.

The USFWS Information for Planning and Consultation (IPaC) system was reviewed for a list of threatened, endangered, and candidate species that could occur within or near the Upgrade Project Area. The northern long-eared bat, Dakota Skipper, and monarch butterfly have the potential to occur in Griggs County and/or Steele County. According to the USFWS IPaC system, no Designated Critical Habitat is present in the Upgrade Project Area. The existing turbines were built in open terrain outside of forested areas and riparian corridors. Additionally, Upgrade Project construction activities will be confined to previously disturbed areas, and no tree removal is anticipated. As a result, no impacts to these species are anticipated.

The Upgrade Project is not anticipated to have any measurable change in impact on migrating birds or bats. Impacts are expected to be similar to other operating wind projects in the area. Otter Tail will develop a Wildlife Conservation Strategy for the facility, which will outline BMPs that are to be undertaken for the life of the facility to minimize risks to birds, bats, and other wildlife from operation of the wind farm.

A copy of the IPaC Resource List is provided in Appendix F.

Conclusion

Table 4 below summarizes Otter Tail's environmental and regulatory analysis of the Upgrade Project. As indicated in Table 4 and the prior sections, the Upgrade Project complies with the requirements of N.D.C.C. § 49-22-03(3)(a), including the Commission's current exclusion area and avoidance area criteria. Additionally, the Upgrade Project will continue to comply with all applicable siting laws, rules, and Commission orders, including the conditions specified in the Commission's October 2008 Order.

Summary Table

Table 4: Summary of Environmental Resource Impact Analysis and Avoidance/Minimization Measures		
Resource	Potential Impact of Upgrade Project	Avoidance and/or Minimization Measures
Socioeconomics	Positive economic and social impacts.	None proposed.
Land Use	Temporary disturbances only; will utilize previously disturbed areas.	Will restore temporarily impacted areas in compliance with applicable provisions of the Commission's 2008 Order.
Public Services	A temporary increase in traffic due to construction will occur.	Will coordinate with Steele County and applicable townships regarding local road use, obtain all necessary road use permits, and restore roads impacted by the Upgrade Project in accordance with the requirements of the Commission's 2008 Order and as required by Steele County and the townships.
Human Health and Safety	Turbine lighting will continue to meet FAA and Commission requirements. Shadow flicker is predicted to be 30 hours per year or less at all occupied residences.	None proposed.
Sound	Initial modeling analysis determined that the sound may exceed 45 dBA within 100 feet of five occupied residences. Modeling was conducted with NRO and/or LNTE added to up to eight turbines.	Otter Tail has obtained sound waivers from the owners of the two residences with sound levels in excess of the sound limit. Otter Tail is pursuing waivers from the remaining three residences. Additionally, Otter Tail has confirmed that the Commission's sound requirement can be met at those three residences by installing noise-reduction technology. Accordingly, the Upgrade Project will comply with the current sound regulations.

Table 4: Summary of Environmental Resource Impact Analysis and Avoidance/Minimization Measures

Resource	Potential Impact of Upgrade Project	Avoidance and/or Minimization Measures
Cultural/Architectural History Resources	Upgrade Project activities will occur primarily within areas previously surveyed for cultural resources or in areas previously disturbed by initial facility construction. The Upgrade Project is not anticipated to impact cultural or architectural history resources.	Prepared an Unanticipated Discoveries Plan.
Recreational Resources	No impacts to recreational resources are anticipated.	Will continue to maintain a setback of 0.25 miles from nearby WPAs.
Land Based Economics	Minimal cropland will be temporarily impacted during construction. No additional long-term impacts to agricultural use or production are anticipated.	Will compensate landowners for any temporary impacts to cropland in accordance with the terms of its wind lease agreements, as applicable.
Soils	Temporary land disturbance may cause soil surface to become more prone to wind and water erosion.	Will implement Best Management Practices (BMPs) to minimize erosion and sedimentation and will restore temporarily impacted areas.
Geologic and Groundwater Resources	No impacts to geological and groundwater resources are anticipated.	None proposed.
Waterbodies, Wetlands, and Floodplain Resources	No impacts are anticipated.	Will implement BMPs to minimize erosion and sedimentation.
Vegetation	Will utilize previously disturbed areas; no trees or shrubs will be removed.	Will comply with the site restoration and reseeding conditions in the Commission's 2008 Order and all other applicable requirements.

Table 4: Summary of Environmental Resource Impact Analysis and Avoidance/Minimization Measures

Resource	Potential Impact of Upgrade Project	Avoidance and/or Minimization Measures
Wildlife	<p>Construction impacts will be confined to previously disturbed locations and minimal impacts to wildlife anticipated.</p> <p>The Upgrade Project is not anticipated to have an impact on threatened or endangered species or have any measurable change in impact on migrating birds or bats.</p>	<p>Will implement BMPs from the Upgrade Project's Wildlife Conservation Strategy to minimize risks to birds, bats, and other wildlife.</p>

Attachments

Figure 1. Upgrade Project Area

Figure 2. Wind Turbine Diagram

Figure 3. Exclusion and Avoidance Area Map

Appendix A – Acoustic Assessment Results and Sound Waivers

Appendix B – Shadow Flicker Assessment Results

Appendix C – FAA Filings

Appendix D – Microwave Beam Path Study

Appendix E – Class I Literature Review – Cultural Resource Report and Unanticipated Discoveries Plan (PUBLIC)

Appendix F – IPaC Resource List

Appendix G – Agency Correspondence