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November 12, 2021

Via Electronic Mail

Mr. Steve Kahl
Executive Director
North Dakota Public Service Commission
600 E. Boulevard, Dept. 408
Bismarck, ND 58505-0480
ndpsc@nd.gov

In re: Tatanka Wind Power, LLC
Revised Filing
Decommissioning
Case No. PU-10-073
Our File No. 010268-000001

Dear Mr. Kahl:

I am writing on behalf of my client Tatanka Wind Power, LLC (“Tatanka”), a subsidiary of Acciona Wind Energy USA LLC. This letter and Tatanka’s November 2021 Decommissioning Plan and Cost Estimate (“November 2021 Plan”) are submitted for filing in the above-referenced matter.

Background

At the Commission’s October 20, 2021 regular meeting, the Commission approved a motion denying Tatanka’s April 2021 Updated Decommissioning Plan and Cost Estimate filed as Docket No. 13, as supplemented (the “April 2021 Plan”). The Commission expressed concerns regarding potential compaction issues and potential land access limitations relating to the use of the felling methodology. During the Commission’s discussion, a Commissioner encouraged Tatanka to adjust its April 2021 Plan to include additional information and subsequently refile. On November 1, 2021, Tatanka notified the Commission it would submit a revised filing by November 12 (Docket No. 22). The enclosed November 2021 Plan is filed in accordance with Tatanka’s prior commitment.

Prior Filings

Tatanka's April 2021 Plan contained a decommissioning cost estimate of \$8,878,377.00 based on the use of the felling methodology. Tatanka explained that this cost estimate included costs beyond those required under the Commission's rules. Specifically, the April 2021 Plan voluntarily accounted for costs associated with anticipated local road repairs and included a 10% contingency to cover potential cost variances. Together, these items totaled \$1,706,562.00 in additional costs that Tatanka voluntarily included in its estimate. Through a series of subsequent filings, Tatanka committed to increase the depth of foundation removal from three to four feet, and to implement the use of a small mobile crane to remove turbine blades to address Commission concerns regarding potential impacts from felling blades. *See* Docket No. 17. Tatanka previously represented that costs associated with these additional commitments were adequately covered by the April 2021 Plan's existing 10% contingency. Docket No. 17.

November 2021 Plan

The enclosed November 2021 Plan is submitted in response to the Commission's October 20, 2021 regular meeting. In addition to containing supplemental information, the November 2021 Plan includes and consolidates various information previously filed with the Commission. For example, the November 2021 Plan incorporates Tatanka's prior commitments regarding increased foundation depth removal and the use of a truck mounted mobile crane for turbine blade removal. As referenced above, costs for these additional commitments were previously accounted for by Tatanka under the April 2021 Plan's built in 10% contingency. However, the November 2021 Plan goes a step further by building these costs in to the plan as underlying assumptions, which increases the underlying base estimate. The 10% contingency is then calculated from this increased base cost estimate. As a result, the November 2021 Plan reflects an increased total gross cost estimate of \$9,478,100.00. *See* November 2021 Plan, pgs. 12-15.

Tatanka previously explained there is minor risk of fiberglass blades shattering from felling due to blade design, composition, and overall durability. However, to mitigate any remaining Commission concerns, Tatanka proposed to use a mobile crane to remove blades and fell the turbine towers. In response, the Commission expressed concerns regarding potential compaction from tower felling. The November 2021 Plan provides additional information to address this concern. The process of felling towers includes lowering towers on to adjacent access roads thus, eliminating potential impacts to surrounding cropland and pasture. *See* November 2021 Plan, Section 6.1, pgs. 5-7, for further discussion. Access road removal and restoration includes decompaction activities regardless of the method used for turbine removal. Best management practices for decompaction are discussed throughout the November 2021 Plan.

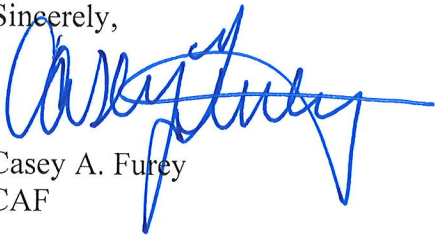
The November 2021 Plan also contains additional information regarding various safety and notification measures that will be employed during the facility's decommissioning, including discussion of a felling safety protocol. *See, e.g.*, pgs. 12, 14-16. As explained in Tatanka's September 20, 2021 filing, Tatanka's consultant Westwood has authored several decommissioning plans for various facilities across the country based on the felling methodology. Docket No. 17 (see footnote 1, providing links to recent filing examples). With respect to land access concerns,

notwithstanding private landowner easements and leases are outside the jurisdiction of the Commission, Tatanka has the necessary access and land use rights to decommission the facility in the manner described in the November 2021 Plan.

The November 2021 Plan complies with the Commission's decommissioning rules and approval is warranted. The November 2021 Plan is signed and authenticated by a licensed North Dakota engineer. The plan contains a cost estimate that accounts for and includes the required information set forth under N.D. Admin. Code. Ch. 69-09-09. The plan goes beyond these requirements by including additional costs not otherwise required. With respect to financial assurance, the Commission has separate rules under Chapter 69-09-09 that govern financial assurance. An owner is required to file financial assurance consistent with its decommissioning cost estimate. In accordance with these requirements, Tatanka commits to file a bond for the full decommissioning estimate of \$9,478,100.00, within 60 days of the Commission's approval of the November 2021 Plan.

Please feel free to contact me with any questions.

Sincerely,



Casey A. Furey
CAF

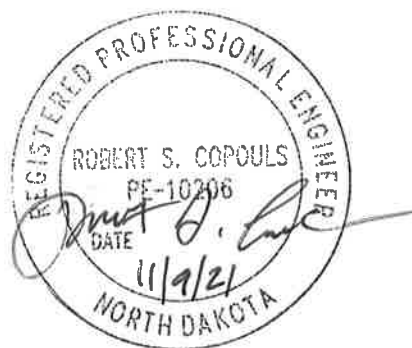
Cc: Adam Renfandt (via email)

Westwood

DECOMMISSIONING PLAN
Tatanka Wind Farm

Dickey County, North Dakota

November 2021



Prepared For:

Tatanka Wind Power, LLC
55 East Monroe Street, Suite 1925
Chicago, Illinois 60603

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1.0 INTRODUCTION / PROJECT DESCRIPTION

The Tatanka Wind Project (the “Facility”) is a 180 megawatt (“MW”) wind power generation project owned by Tatanka Wind Power, LLC (the “Applicant”¹) in Dickey County, North Dakota, and in McPherson County, South Dakota. This decommissioning plan will discuss the provisions for removal of facilities within Dickey County, North Dakota. The Facility (within North Dakota) is located on approximately 4,950 acres of privately owned and leased land. The Facility includes permanent facilities of 61 ACCIONAAW77 1.50 MW turbines, nacelles and blades with an 80.0 meter hub height, 15.0 miles of access roads, and underground collection system. The step-up substation and the operations and maintenance facility for the project are located in South Dakota, and are not addressed in this decommissioning plan. The Facility has been in commercial operations since 2008, with a nameplate capacity of 91.5 MW.

2.0 DECOMMISSIONING OBJECTIVE

The purpose of this “Decommissioning Plan”² (and its succeeding and revised Decommissioning Plans, (the “Plans”) is to describe the means and methods that can be used to remove project facilities, and reclaim and restore the land in accordance with North Dakota Public Service (“NDPSC”) decommissioning requirements set forth in N.D. Admin. Code Ch. 69-09-09. The Plans identify components which may be removed, and the areas that may be restored after abandonment of the Facility, or when the Facility has surpassed the useful lifespan of the turbines and facilities. This includes the disrepair of individual turbines which may pose a health or safety issues. The useful life of commercial size turbines is generally considered to be 30 years.

Applicant acknowledges that decommissioning is accomplished at Applicant’s (and its successors in interest and assigns) expense.

The Decommissioning Plan will be updated and re-filed with the NDPSC in accordance with N.D. Admin. § 69-09-09-06.

3.0 PROPOSED FUTURE LAND USE

Prior to the development of the Facility, the land use in the areas affected by development was primarily agricultural land with approximately one quarter planted with row crops and the remainder used for pasture or hay fields. Wetlands are numerous in the area, but the wind farm does not encroach on the wetlands, instead utilizing the higher ground which is primarily the pasture and grasslands. After affected areas are decommissioned, these areas will be returned to their predevelopment topography and topsoil conditions to the extent practical.

4.0 NOTIFICATION

After the Facility has reached the end of its useful life, and prior to the start of decommissioning activities the Applicant will notify the NDPSC, Dickey County Board, landowners, affected parties, and other stakeholders in writing, of the intended

¹ “Applicant” refers to any operator, subsequent owner, or transferee of the Facility.

² This plan incorporates and consolidates information contained in Tatanka’s April 2021 Updated Decommissioning Plan and Cost Estimate (Docket No. 13) and Tatanka’s subsequent corresponding filings (Docket Nos. 15,17-18) to consolidate information for ease of review, This plan also includes additional information in response to the Commission’s discussion at its October 21, 2021 meeting.

decommissioning activities and schedule as required by applicable law.

5.0 DECOMMISSIONING TASKS AND TIMING

Decommissioning includes several phases and activities such as:

- Removal of above ground components (turbines, transformers, and met towers);
- Removal of turbine, transformer, and met tower foundations to a depth of four feet;
- Removal of underground collection system and fiber optic cables to a depth of twenty- four (24) inches;
- Removal of access roads (unless the NDPSC approves a landowner's request for the roads to remain);
- Restoration of access roads, including decompaction;
- Reclamation, re-grading, and restoration of disturbed areas including topsoil reapplication and decompaction of soils;
- Application of necessary sediment and erosion controls during and following decommissioning; and
- Repair of public roads and culverts to pre-construction condition.

Underground utility lines deeper than twenty-four (24) inches below ground may be left in place to minimize land disturbance and associated impacts to future agricultural land use.

Decommissioning will include the removal and transportation of all turbine components and debris from the Facility site. Decommissioning will also include the removal of cabling, electrical components, access roads, and any other associated facilities in the manner described in the Plan, unless otherwise agreed upon by Applicant and the applicable landowner and approved by the NDPSC. All dismantling, removal, recycling, and disposal of materials generated during decommissioning will comply with rules, regulations, and prevailing laws at the time decommissioning is initiated, and will use approved local or regional disposal or recycling sites as available. Recyclable materials will be recycled to the extent practicable. Non-recyclable materials will be disposed of in accordance with state and federal law. In accordance with NDPSC practice, the value of recycled components will not be deducted from the gross decommissioning costs in determining the financial assurance amount.

There are no known hazardous materials contemplated for incorporation in the Facility, with the exception of mineral oil in the gearbox and transformers, and hydraulic fluids and grease in some mechanical components. During decommissioning, current regulations for identifying, handling, and disposing of hazardous materials will be followed.

6.1 DECOMMISSIONING

Public Road Modifications and Removal

Temporary turning radius modifications are not expected to be needed for decommissioning as turbines that have reached the end of useful life have scrap value, but little resale value. Transportation of the turbine components off site will be accomplished using conventional over the road trucks. Following removal of the decommissioned turbine components, any turning radius modifications required for decommissioning will be removed and any disturbed areas will be restored to preconstruction condition using thorough decompaction techniques and re-application of topsoil. After all hauling

activities are complete the county and township public roads will be restored to pre-construction condition.

Crane Path and Crane Pad Preparation and Removal

This cost estimate is based on the hybrid method of removal, previously discussed in Tatanka's September 20, 2021 supplement (Docket No. 17) which includes removal of blades and hub assembly using a truck mounted crane, and then felling of turbine towers. This method eliminates the need for large industrial crawler cranes, the associated crane paths, and crane pads and related reclamation.

Wind Turbine Felling and Mobile Crane Removal

This cost estimate assumes the hybrid method which includes "felling" to bring down the turbine tower segments and truck mounted crane removal of blades and hub assembly. The turbine components will then be disassembled and processed for recycling. This hybrid method has several advantages over disassembly using large crawler cranes. This type of removal eliminates the use of crane paths and crane pads that are otherwise necessary to disassemble the components of a turbine.

The truck mounted crane (mobile crane) is a 6 to 8 axle truck with a crane mounted to it. with a lift capacity of up to 100 tons and a maximum boom height reach of 89 meters. The mobile crane can utilize existing access roads and turbine pads to remove turbine components such as blades (approx. 7 tons each) and hub assembly (approx. 38 tons). The mobile crane can utilize existing access roads and turbine pads to remove turbine components such as blades and hub assembly. The removal of blades and hub assembly at each location would be carried out by a crew of approximately 5 workers including a foreman and a crane operator. Although it is unlikely that fiberglass shattering would result from blade felling, any such risk is eliminated by using a truck mounted crane to lower the blades and hub assembly. After the blades and hub are removed, the turbine tower components will be felled. The anticipated time to bring down turbine blades and hub assembly by a truck-mounted crane is approximately 35 days for all 61 turbines or about one-half day for each turbine.

Felling consists of disconnecting electrical connections and draining oil, hydraulic fluid, and any other liquids from the turbine. A long cable is attached to the nacelle, and to a piece of heavy equipment, such as a bulldozer, usually positioned on the access road. Wedge shaped areas are then cut out of the tower steel using cutting torches to create a hinge that will direct the turbine to fall on, or next to, the access road when pulled by the dozer. The felling technique has been used on numerous wind turbine decommissioning projects, including on thousands of abandoned turbines in Palm Springs and Tehachapi, California. As evidence of the success of this technique we have reviewed confidential information prepared for the decommissioning of the Cerro Gordo Wind Project in Clear Lake, Iowa, dated October 2018. The information listed 12 projects where the felling technique had been used in four states. The decommissioning on the Cerro Gordo Wind Project was accomplished during the summer of 2020.

The turbines can be felled in very precise locations because the hinge formed with the cutting torches restricts the direction the turbine can fall. The turbine nacelle is also connected, via a cable, to a piece of heavy equipment which pulls the turbine tower in the intended direction. The turbines can be felled accurately so they fall on the adjacent

access roads, which are slightly wider than the nacelles and towers. This minimizes crop loss and surface disturbance that would otherwise occur if large crawler cranes were used for disassembling the turbines.

By felling the nacelles and towers on the access roads, no compaction occurs on previously undisturbed land. The area of the access roads will be decompacted to facilitate returning the land to productive cropland. See Access Road Removal and Restoration, and Restoration (Section 6.1) below for the process used to restore compacted areas.

To evaluate the possibility that the felling of turbines will cause damaging compaction to the soil, Westwood conducted a literature search on dynamic compaction. Dynamic compaction of soils is a technique to consolidate (compact) soils by repeatedly dropping heavy weights (as heavy as 40 tons) from cranes (from as high as 100 feet). The technique has been in use since the 1960s, originated by Louis Menard³. Dynamic compaction works best in dry, granular soils, and relies on repeated impacts of the weight. The results of single impacts are not reported in the literature, so we conclude that single impacts present overall negligible compaction risk.

Additionally, Westwood consulted with the owner of the Cerro Gordo Wind farm referenced above to inquire if landowners had made claims for lost crop productivity in the areas surrounding the decommissioning of turbines by felling.

Representatives of the Cerro Gordo Wind Farm reported that to date, there were no claims from landowners for the loss of crop productivity. Standard decompaction methods applied to areas disturbed by decommissioning operations appear to have been effective at restoring the agricultural productivity of the land.

In addition to the costs associated with preparing crane paths and pads, this hybrid method will reduce the total disturbed area, including disturbance to wetlands and cultivated cropland, reducing area that will need to be reclaimed and restored during the decommissioning process. The elimination of the use of large cranes also reduces the number of trucks delivering and removing equipment and associated dust impacts. It eliminates the need for crane crossings of public roads and the associated temporary road closures and potential for damage to the public roads from the crossings.

This method is also potentially safer as fewer iron workers are exposed to the dangers of assembling and breaking down the large cranes, and the exposure to tower pieces and nacelles as they are hoisted from their assembled positions and lowered to the ground. Dismantling turbines with a crawler crane typically requires a minimum of five picks, with each pick requiring a team of iron workers working on and around the turbine to remove bolts and cut pieces free so they can be removed.

In contrast to the potential safety risks of disassembling the turbines using large crawler cranes, fewer workers are directly exposed using the felling method. Only two iron workers are in the immediate vicinity of the turbine during the brief time they are actively cutting the base of the turbine. The safety perimeter (as described in Attachment A) has to be evacuated and controlled for only a brief time during the actual felling. A detailed safety protocol for felling operations is attached as Attachment A.

³ <https://www.sciencedirect.com/topics/engineering/dynamic-compaction>

The reduction in overall impacts also reduces the total time required to decommission the Facility since the restoration efforts are reduced to a smaller area.

Wind Turbine Removal

Each turbine consists of three (3) steel tower segments, nacelle, rotor and hub assembly, and three blades. If it is not cost effective to resell the turbines, the components will be processed on-site, or at an off-site location, into sizes which conform to scrap metal recycling requirements. The materials can then be sold for scrap material value and recycled. The tower sections, in particular, represent a substantial amount of high-quality steel materials. The processed scrap materials will be loaded on tractor-trailers and removed from the site to a prearranged receiving location, or directly to a recycling or disposal facility. The fiberglass blades will be transported to the Waste Management Bismarck Recycling Center which can accept fiberglass turbine blade waste.

Turbine Foundation Removal and Restoration

Turbine foundations are fabricated of concrete and rebar. Topsoil and aggregate from the area surrounding the foundations will be stripped, segregated, and stockpiled near the work site for reapplication during restoration. The turbine foundation will be exposed using backhoes, bull-dozers, or other earth moving equipment. Because the Facility was constructed prior to 2017, the NDPSC's rules require foundation removal to a depth of three feet. Consistent with Tatanka's prior representations, as part of this plan Tatanka commits to increase foundation depth removal to four feet. The pedestal (upper part of the turbine foundation) will be removed to a depth of four (4) feet below the final ground surface. Demolition of mass concrete is generally accomplished using hydraulic hammers mounted on a backhoe or similar equipment (hoe ram), or by the use of expansive chemicals placed in holes drilled in the concrete. Concrete and rebar will be broken into manageable-sized pieces and loaded into dump trucks to be hauled off site for recycling as aggregate or disposal.

Following the removal of turbines and foundation pedestals, the resulting voids will be backfilled with clean native subsoils and compacted to a density similar to surrounding subsoils (typically approximately 90% of the fill material's standard Proctor density). Topsoil will then be reapplied to the site and graded to blend with the surrounding grade and preserve pre-existing drainage patterns. The soil and topsoil will be decompacted and restored to a tillable agriculture ready condition similar to the pre-construction condition, or re-seeded to promote re-vegetation. If necessary, the site will be temporarily or permanently re-vegetated, depending upon location, time of year, and anticipated post-decommissioning land use. Any drain tile lines damaged during removal and restoration of turbine foundation areas will be repaired to ensure drainage is maintained.

A concrete transformer pad is located next to each turbine pedestal. The pad can be removed with the same equipment as the pedestal, and loaded, transported, and disposed of the same as the pedestal. The transformer pad is located within the gravel ring around the turbine so no additional disturbance or restoration area is required.

Access Road Removal and Restoration

Access roads will be removed, or left in place based on the individual landowner's request, and NDPSC approval. Removal of access roads will entail removal of the road base aggregate and any other materials used for constructing the roads. During removal, the topsoil adjacent to both sides of the roads will be stripped and stockpiled in a windrow

paralleling the road. The road base materials will then be removed by bulldozers and wheeled loaders, or backhoes, and hauled off site in dump trucks to be recycled or disposed at an off-site facility. On-site processing may allow much of the aggregate to be re-used to improve public roads. The decommissioning contractor will also likely seek disposal opportunities for clean fill from nearby landowners to reduce hauling and disposal costs. The road aggregate may also be disposed of at a nearby landfill and used as “daily cover” at no cost. If geotextile fabric was utilized under the aggregate base, it will be removed and disposed of in a landfill off-site. The access road removal will proceed from the turbine area to the public roads to limit tracking and provide a stable access during removal. Following removal, topsoil will be reapplied and graded to blend with surrounding contours to promote pre-construction drainage patterns. Topsoil to cover the access roads and turbine rings will be acquired from the areas where it was stockpiled (or wasted) during the original construction. Since topsoil stayed with each parcel in the construction of the wind farm there will be adequate topsoil to restore each area to its pre-construction condition. The soil and topsoil will then be decompacted and restored to pre-construction tillable condition or re-vegetated.

Underground Electrical Collection Lines

The electrical cables and fiber optic cables are typically installed at a minimum depth of 48 inches (by plan), and contain no material known to be harmful to the environment. The only locations where the cables are less than 48 inches deep are where cables enter pad mounted transformers and junction boxes. Accordingly, the majority of underground cables will be left in place, non-functional. Any cable at a depth of less than twenty-four (24) inches will be removed. Following cable, junction box, and route marker removals, disturbed areas will be restored by the restoration methods described above for access roads, including the reapplication of topsoil to match the surrounding grade and preserve or promote pre-existing drainage patterns. A pad mounted transformer is located next to each turbine, where the connection to the collection system is made.

6.2 RECLAMATION

In addition to the reclamation activities described above for each decommissioning activity, all unexcavated areas compacted by equipment and activity during the decommissioning will be de-compacted to a depth as needed to ensure proper density of topsoil consistent and compatible with the surrounding area and associated land use. All materials and debris associated with the Facility decommissioning will be removed and properly recycled or disposed of at off-site facilities.

As necessary, the topsoil will be stripped and isolated prior to removal of structures and facilities for reapplication to promote future land use activities. The topsoil will be reapplied following backfill, as necessary, and graded to blend with adjacent contours to maintain pre-construction drainage patterns. The topsoil reapplied will be free from large rocks and will not contain debris from decommissioning. If the area is not going to be used for crops, the topsoil will then be revegetated using seed mixes approved by the local Farm Service Agency, Soil and Water Conservation District, or Natural Resource Conservation Service. Temporary erosion protection such as mulch, hydromulch, or erosion control blanket will be applied in accordance with the requirements of the project Storm Water Pollution Prevention Plan (SWPPP).

7.0 BEST MANAGEMENT PRACTICES (BMPs)

During decommissioning, erosion and sediment control BMPs will be implemented to minimize potential for sedimentation of surface waters and waters of the state. Because decommissioning will entail disturbance to more than one acre of soil, the Applicant will prepare a Storm Water Pollution Prevention Plan (SWPPP) and obtain a National Pollutant Discharge Elimination System (NPDES) permit prior to initiating soil disturbing activities. Potential BMPs described below are examples which will be subject to refinement in the SWPPP. The decommissioning team will re- view the permitting requirements at the time of decommissioning, and obtain any other necessary permits, which may include a U.S. Army Corps of Engineers Section 404 Permit to Discharge Dredged or Fill Material. Because virtually all of the project area is currently used to grow crops or for pasture, exposed soil is a common condition and only minor erosion and sediment control is expected.

7.1 EROSION CONTROL

Erosion control measures are described generally here, but will be refined based on the standard of practice current at the time the SWPPP is developed for decommissioning. All disturbed areas without permanent impermeable or gravel surfaces, or planned for use as crop land, will be vegetated for final stabilization. All slopes steeper than 4:1 should be protected with erosion control blankets. Restoration should include seed application prior to application of the blanket. All slopes 4:1 or flatter should be restored with seed and mulch, which will be disanchored.

Project Phasing/Design BMP: Time periods during which disturbed soils are exposed should be minimized to the degree possible. Stabilization of soils will generally be accomplished immediately following decommissioning of the access roads, turbine sites, and electrical and fiber optic cables. Where this is not possible, temporarily exposed soils will be temporarily stabilized with vegetation in accordance with the SWPPP for decommissioning.

Erosion Control Blankets and Seed BMP: Erosion control blanket (double sided netting with wood fiber or weed-free straw fiber blanket) will be used as temporary stabilization for areas of slopes steeper than 4:1 and for areas of concentrated flow, such as ditches, swales, and similar areas around culverts. Seed will be applied in these areas with the blanket for temporary and/or permanent vegetative growth as necessary. The SWPPP developed for decommissioning will provide detailed specifications for erosion control blankets to be used under various slope and drainage conditions.

Ditch/Channel Protection: Where new channels are formed, as in the case of culverts removed from access roads and the removal of low water crossings, the resulting channel will be protected with erosion control blankets as described in the section above.

Surface Roughening: Surface roughening or slope tracking is the act of running a dozer or other heavy tracked equipment perpendicular to the grade of disturbed slopes with a grade of 3H:1V and steeper with a continuous length of 75 feet or greater. The tracks will provide a rough surface to decrease erosion potential during an interim period until a smooth grade, seed and erosion control blanket can be applied.

Temporary Mulch Cover and Seed BMP: Temporary mulch cover (wood fiber to resist loss from grazing by wildlife or domestic animals) will be applied at a rate of two tons per acre to provide temporary erosion protection of exposed soils areas with slopes flatter than or equal to 3:1. Seed will be applied with the mulch for temporary and/or permanent

vegetative growth as called for in the SWPPP. Mulch will be used for all soil types where slopes are flatter than 3:1 and no significant concentrated flows are present. The mulch will be disc-anchored to the soil to keep it from blowing away. The mulch prohibits the impact of the rain drop from dislodging soil and subsequently carrying the soil away during sheet drainage. For sandy soils, tackifier may be used to assist the disc anchoring if the mulch cannot be secured to the sandy soils.

Soil Stockpiles: Topsoil that is stripped from the construction site and base materials will be stock-piled on-site. Stockpile areas will be located in areas that will not interfere with the decommissioning activities, and be located away from pavement, site drainage routes, or other areas of concentrated flow. Stockpiles will be located away from wetlands and surface waters. Perimeter controls, such as silt fence, will be installed around all stockpiles if stockpiles are not placed within existing silt fences or other sediment control, where the potential exists for material to be eroded and transported to sensitive natural areas. Soils that are stockpiled for longer durations will be temporarily seeded and mulched or stabilized with a bonded fiber polymer emulsion.

Permanent Seed and Temporary Mulch and/or Erosion Control Blanket BMP: In areas at final grade that will not be used for agriculture, permanent seed will be applied to promote vegetative cover for permanent erosion control. Temporary mulch and/or erosion control blanket will be applied as appropriate in areas to provide temporary erosion protection until the permanent seed is established.

7.2 SEDIMENT CONTROL

Removal of Ditch Crossing BMP: Temporary ditch crossings may be needed to accommodate the movements of cranes or other heavy equipment. Perimeter controls such as silt fence will be used at crossing locations to minimize runoff from exposed soils. Crossings will be done during dry conditions, if possible. If a stream is wet at the time of the crossing, alternative BMPs will be applied. These could include a temporary dam and bypass pump to install the crossing in dry conditions. Timber construction mats will be used as needed to prevent compaction and rutting at crossing locations. All temporary fills and construction mats will be removed immediately after the crossing is successfully completed and the temporarily disturbed area restored using the appropriate BMPs as described above.

Dewatering: A temporary sump and rock base will be used if a temporary pump is used to dewater an area of accumulated water. If a rock base cannot be used, the pump intake will be elevated to draw water from the top of the water column to avoid the intake and discharge of turbid water. Energy dissipation riprap will be applied to the discharge area of the pump hose. The water will be discharged to a large flat vegetated area for filtration/infiltration prior to draining into receiving waters of conveyances/ditches. If discharge water is unavoidably turbid, dewatering bags, temporary traps, rock weepers, or other adequate BMP will be used to control sediment discharge.

Silt Fence BMP or Fiber Logs: Silt fences or fiber logs will be used as perimeter controls down-gradient of exposed soils during construction to capture suspended sediment particles on-site, to extent possible. The standard silt fence or fiber logs will also be used in smaller watershed areas where the contributing areas are typically less than 1/4 acre of drainage per 100 feet of standard silt fence or the fiber logs. Standard silt fence or fiber logs will also be used for stockpiles 8 feet high or higher which have slopes of 3:1 or steeper. Standard silt fence or fiber logs should not be used in areas of highly erodible soils

which are found within streams, slopes, or banks of creeks and streams within the Facility's site.

Rock Entrance/Exit Tracking Control BMP: Rock construction entrances will be installed where access to a construction area is needed from adjacent paved surfaces.

Street Scraping/Sweeping BMP: Street scraping and sweeping will be used to retrieve sediment tracked or washed onto paved surfaces at the end of each working day, or as needed.

7.3 CONTROLLING STORMWATER FLOWING ONTO AND THROUGH THE PROJECT

Given the low gradient of the slopes in the project area, controlling stormwater flow that enters the project area will likely require minimal effort during decommissioning activities. Only newly disturbed areas may require new, temporary stormwater control.

Diversion Berms/Swales/Ditches: It may be necessary to direct diverted flow toward temporary settling basins via berms, swales, or ditches. If diversion controls are deemed necessary for de-commissioning activities, these must be stabilized by temporary mulch and seeding, erosion control blankets, or by installing riprap to protect the channel from erosive forces.

Rock Check Dams: It may be necessary to install temporary check dams within swales or ditches that convey storm water from areas disturbed by decommissioning activities. Rock check dams are effective for velocity control, sediment control, and to augment temporary stabilization of channels. Filter fabric can be utilized to help filter the flow, minimize the scour of the soil under the rock, and facilitate removal of the check dams once permanent stabilization is achieved. The height of check dams should be at least two feet. Spacing depends upon slope. Downgradient rock checks should have the top elevation at the same elevation as the bottom of the previous (upgradient) rock check.

Hay Bale Check Dams: Hay bale check dams may be used for velocity control within swales of the project to slow the water runoff within the drainage channels/swales. The bales should be approximately three feet in length and anchored into the soil. The midpoint elevation of the top of the bale (i.e. ponding height) must be lower than the end points of the bale where the bale meets grade, to prohibit water from flowing around the bales thus causing erosion and scour. If the bales cannot be applied properly in the field, the use of rock checks as a replacement is recommended.

Temporary Sedimentation Basins: Sedimentation basins serve to remove sediment from runoff from disturbed areas of the site. The basins allow runoff to be detained long enough to allow the majority of the sediment to settle out prior to discharge. The location and dimensions of temporary sedimentation basins, if any are necessary, will be verified in accordance with North Dakota Department of Environmental Quality (DEQ) requirements at the time of decommissioning.

7.4 PERMITTING

All decommissioning and restoration activities will comply with federal and state permit requirements. Decommissioning activities that will disturb more than one acre of soil may trigger the NPDES Construction General permitting process and include North Dakota general permit or Notice of Intent filings. The permits, if required, will be applied for and received prior to decommissioning construction activities commencing. A Storm Water Pollution Prevention Plan will be developed prior to filing a Notice of Intent. If permanent

crossings are to be removed and no discharge of dredged or fill material will take place, a Section 404 permit is not anticipated for the decommissioning of the Facility. No air permits are currently required for construction activities typical for decommissioning. DEQ air quality rules will be reviewed at the time the work is scheduled to determine if an air quality permit will be required. Further, no operating air quality permits are needed for ongoing operation of the wind farm facility. Should decommissioning activities cause temporary or permanent impacts to wetlands, a DEQ Wetlands Permit will be obtained prior to any activities commencing, if required. Should decommissioning activities cause temporary or permanent impacts to vernal pools, an Army Corps of Engineers General Permit for the State of North Dakota will be obtained prior to any activities commencing. Should any interim permits become needed, they will be closed out with documentation of compliance at decommissioning. A Spill Prevention, Control and Countermeasures (SPCC) Plan for decommissioning, separate from the operating SPCC will likely be required.

8.0 TIMELINE

Decommissioning of the wind farm will be initiated within (12) months after abandonment or the end of its useful life. The following sections outline a timetable for the decommissioning plan; steps towards compliance with applicable air and water quality laws and regulations; and steps for compliance with health and safety standards.

8.1 DECOMMISSIONING SCHEDULE

It is anticipated that the decommissioning activities for the project can be completed within a 24 month period. The estimated costs for decommissioning are tied to assumptions about the amount of equipment mobilized, the crew sizes, weather and climate conditions, and the productivity of the equipment and crews.

8.2 WATER REGULATORY COMPLIANCE

Water Quality: NPDES permitting will include the following steps for compliance.

1. Complete a SWPPP consistent with the requirements of the North Dakota NPDES General Construction Permit applicable at the time of decommissioning.
2. Submit the NPDES Notice of Intent at least 30 days prior to starting construction activities associated with decommissioning.
3. Once notification of permit coverage is received, decommissioning will commence.
4. During decommissioning, compliance with the NPDES permit (applicable at the time of decommissioning) will be adhered to including inspections, documentation, maintenance of BMPs, record keeping, amendments to the Plans and implementation of the SWPPP.
5. Within 30 days of completing decommissioning and restoration, a Notice of Termination (NOT) will be submitted to the North Dakota Department of Environmental Quality to terminate coverage of the NPDES permit.

Water Quality: Section 404 Discharge of dredged and fill material, if required, will include the following steps for compliance.

1. Notification to the Corps of Engineers if needed, of expected activities such as temporary stream/water body crossings.
2. Verification of necessary permits (if any).
3. Apply for any necessary Section 404 permits prior to commencing work within waterways/ wetlands.
4. As applicable, develop Plans to comply with necessary permit regulations.

5. Once receipt of applicable permits, decommissioning work will commence adhering to rules, timelines and requirements stated in applicable permits.

8.3 HEALTH AND SAFETY STANDARDS

Work will be conducted in strict accordance with Applicant's health and safety plan. The construction contractor hired to perform the decommissioning will also be required to prepare a site-specific health and safety plan. All site workers, including subcontractors, will be required to read, understand, and abide by the Plan. A site safety officer will be designated by the construction contractor to ensure compliance. This official will have stop-work authority over all activities on the site should unsafe conditions or lapses in the safety plan be observed.

9.0 DECOMMISSIONING COSTS AND FINANCIAL ASSURANCE

Since there are few utility sized wind farms that have been decommissioned to date, the availability of historical cost data is limited. This cost estimate was prepared: (1) in current dollars; (2) with the salvage value of equipment or materials calculated separately. The estimate includes: (i) an analysis of the physical activities necessary to implement the approved reclamation plan, with physical construction and demolition costs based on applicable North Dakota Department of Transportation unit bid prices and RS Means material and labor cost indices; (ii) the level of effort or number of crews required to perform each of the activities; and (iii) an amount to cover contingencies above the calculated cost. The Estimate is shown on a total cost and on a per-turbine basis. The decommissioning plan and cost estimate will be revised periodically.

Cost and quantities for the Facility are based on as-built data provided by the client. Since this revised estimate is being made after more than ten years of the wind farm operation Westwood has assumed that there will be no resale value for the turbines, only scrap salvage value.

The method and schedule for updating the cost estimates for decommissioning and restoration of the Facility site will be similar to this cycle of revisions. An engineering evaluation of the current construction techniques and equipment used for decommissioning will be performed and the cost estimate will be revised to reflect any changes in productivity resulting from new techniques and equipment. Current unit prices from industry recognized sources, such as RS Means, will be used to compute the revised costs.

The amount of the financial assurance will be based on the net decommissioning cost estimate which includes project management/administration costs, dismantling and removal hauling costs of project infrastructure, restoration and reclamation costs of the land used by the facility, disposal cost of materials that cannot be salvaged and recycled, public road restoration costs, a contingency amount, county administration costs, and crop loss costs.

The April 2021 Plan (Docket No. 13), as supplemented, included a total proposed gross decommissioning cost estimate of \$8,878,377.00. As Tatanka has explained, the \$8,878,377.00 estimate included estimated costs for local road repairs and a ten percent (10%) contingency to account for potential variances in demolition costs. Neither of these two costs are required to be accounted for under the NDPSC's rules; however, Tatanka has voluntarily included these potential costs in its estimate. After Tatanka submitted its April 2021 Plan, Tatanka subsequently committed to increase foundation depth removal and

proposed the use of a truck mounted crane for blade removal. Tatanka previously stated that additional costs associated with these new commitments were adequately accounted for in the April 2021 Plan's estimate of \$8,878,377.00, under the existing built-in contingency. See Docket No. 17.

In consideration of feedback received from the Commission, the estimate below includes the costs included in Addendum 1, for the truck mounted crane removal of the hub and blades, and the additional foundation removal cost to a four foot depth, as well as an additional contingency on those costs. These additional costs of approximately \$600,000 result in a total cost of the decommissioning of the Tatanka Wind Project (North Dakota) of approximately \$9,478,100 (\$155,400 per turbine) which includes a ten percent (10%) contingency on the demolition costs, public road repair, and crop loss. This gross cost does not recognize the substantial salvage value of the structural steel, copper, aluminum, and other materials contained in the towers, drivetrain, generators, transformers, and other facilities that are routinely recovered and recycled.

Detailed cost estimate on next page.

Table 1: Detailed Cost Estimate

Tatanka Wind North Dakota Decommissioning Cost Estimate				
	Quantity	Unit	Unit Cost	Total Cost
Number of Turbines	61	Each		
Mobilization/Demobilization	1	Lump Sum	\$410,000.00	\$410,000
Permitting				
County Permits	1	Lump Sum	\$2,000.00	\$2,000
State Permits (SWPPP, SPCC)	1	Lump Sum	\$5,000.00	\$5,000
Subtotal Permits				\$7,000
Disconnect Turbine Wiring	61	Each	\$2,725.60	\$166,262
Rent crane truck mounted (100 ton)	35	Days	\$1,527.75	\$53,471
Dismantel Hub and Blades (using truck mounted crane)	35	Days	\$3,466.40	\$121,324
Fell Turbine Tower	61	Each	\$1,678.88	\$102,412
Process to Size and Load Turbine Components for Disposal	41,618	Tons	\$69.85	\$2,907,018
Haul Metal Turbine Components Offsite for Disposal	41,618	Tons	\$15.67	\$652,321
Haul Non-metalic Turbine Components Offsite For Disposal	3,446	Tons	\$18.44	\$63,539
Non-metalic Turbine Components Disposal	3,446	Tons	\$74.00	\$254,985
Excavate Around Turbine Foundation	61	Each	\$178.00	\$10,858
Remove Turbine Foundation to a Depth of 4 feet and Load	2,883	Cubic Yards	\$176.47	\$508,675
Backfill Excavation Area from Turbine Foundation Removal	61	Each	\$228.16	\$13,918
Haul Concrete (Turbine Foundation)	5,837	Tons	\$18.44	\$107,637
Disposal of Concrete from Turbine Foundation	5,852	Tons	\$74.00	\$433,015
Remove and Load Transformer	61	Each	\$524.17	\$31,974
Haul Transformer for Diposal	61	Each	\$359.58	\$21,934
Remove Transformer Pad	292	Cubic Yards	\$129.58	\$37,876
Transformer Disposal (Including Oil)	61	Each	\$0.00	\$0
Haul Concrete (Transformer Pad)	592	Tons	\$18.44	\$10,914
Disposal of Concrete from Transformer Pad	592	Tons	\$74.00	\$43,800
Decompact Wind Turbine Generator Site	61	Each	\$144.18	\$8,795
Grade Wind Turbine Generator Site	61	Each	\$1,867.49	\$113,917
Erosion and Sediment Control at Turbine/Transformer Site	61	Each	\$295.50	\$18,026
Revegetation at Turbine/Transformer Sites	61	Each	\$3,300.00	\$201,300
Subtotal Wind Turbine Generators				\$5,883,971
Electrical Collection/Transmission System (Remove at Junction Boxes)				21.6
Removal of Underground Collector System Cables (34.5 kV)	72	Each	\$400.00	\$28,800
Haul Underground Collector System Cables (34.5 kV)	4.9	Tons	\$15.67	\$77
Disposal of Removed Cables	1.3	Tons	\$0.00	\$0
Removal of Junction Box	11	Each	\$100.00	\$1,100
Erosion and Sediment Control at Junction Box Location	11	Each	\$100.00	\$1,100
Revegetation at Junction Box Location	11	Each	\$88.00	\$968
Subtotal Electrical Collection/Transmission System				\$32,045

Access Roads				76,922
Remove and Load Gravel Surfacing from Access Roads	22,792	Cubic Yards	\$2.42	\$55,042
Haul Gravel Removed from Access Roads	36,923	Tons	\$18.44	\$680,852
Disposal of Gravel Removed from Access Roads (Use as "Daily Cover")	36,923	Tons	\$0.00	\$0
Remove and Load Culvert from Beneath Access Roads	94	Each	\$448.00	\$42,112
Haul Culvert Removed from Access Roads	48	Tons	\$18.44	\$887
Disposal of Culverts	48	Tons	\$10.00	\$481
Remove Low Water Crossing from Access Roads	10	Each	\$3,400.00	\$34,000
Decompact Access Road Corridor	76,922	Linear Feet	\$0.23	\$17,745
Grade Access Road Corridor	76,922	Linear Feet	\$1.60	\$122,693
Erosion and Sediment Control Along Access Roads	11,538	Linear Feet	\$1.97	\$22,730
Revegetation on Access Roads	42.4	Acres	\$9,583.20	\$406,148
Subtotal Access Roads				\$1,382,692
Public Roads Restoration	20.4	Miles	\$44,000.00	\$899,550
Total Direct Costs				\$8,615,257
Contingency (10%)				\$861,526
Total Demolition Costs				\$9,476,783
Cost Per Turbine				\$155,357
Crop Loss	2.5	Acres	\$500.00	\$1,250
Total Cost				\$9,478,100

Attachment A – Safety Protocol

Description of Work: Turbine Felling

Responsible individual: Felling crew foreman - TBD

Detailed task list:

1. Test for hazardous materials – send samples to lab for analysis
2. If hazardous materials are identified, contact hazardous materials removal/containment contractor
3. After negative test results are received proceed with the remainder of steps
4. Complete Pre-Project Hazard Analysis Form – See **Pages 16-18**
5. Hold safety meeting to verify, roles/responsibilities, schedule, emergency response readiness
6. Rotate nacelle to align with direction of felling
7. Mark hinge cutting paths at tower base to align with direction of felling
8. Drain fluids from nacelle – oil, hydraulic fluids, lubricants
9. Set safety perimeter at 1.1 times the height of the turbine to tip of blade
10. Attach cable to nacelle, and to heavy equipment aligned with direction of felling
11. Verify weather prediction for wind speed and direction is within the safety parameters for the felling operation for the required timeframe
12. Perform final inspection to clear nacelle and tower of personnel and equipment
13. Clear safety perimeter of personnel, equipment, and bystanders with the exception of hinge cutting crew and their equipment
14. Establish radio communication between hinge cutting crew and equipment operator
15. Remove slack from the cable to the tension prescribed in the engineering procedure for felling
16. Cut hinges on both sides of tower base to limits prescribed in the engineering procedure for felling
17. Evacuate cutting crew
18. Verify safety perimeter is clear
19. Increase tension on the cable and continue slowing pulling turbine to fell the turbine as prescribed by the engineering procedure for felling
20. When turbine is on the ground cancel safety perimeter and allow access for designated inspection and work crews
21. Inspect area for damage and possible injuries
22. Proceed with cutting the materials to sizes to be removed from the site

Notes:

1. At each step all employees of the felling contractor may STOP the procedure to correct unsafe conditions.
2. Verify experience and training of crew in skilled and safety critical jobs.
3. Crew is required to follow the approved engineering procedures developed for the specific turbine, especially the cable attachment method and the hinge cutting layout. These procedures have been developed for the specific turbine make and model based on the manufacturer's drawings for the nacelle and tower base section.
4. All personnel on-site must adhere to project requirements for personnel protective equipment (PPE), hard hats, vests, eye protection, gloves, fall protection, etc. depending on their specific job and exposure

PRE-PROJECT HAZARD ANALYSIS FORM

Job/Task		Date Conducted		Participants	
Date of Review		Reviewed By			
MATERIAL AND EQUIPMENT USED					
Equipment in Use		Required PPE		Chemical Used	SDS On File
EHS HAZARDS THAT OCCUR THROUGH THE DURATION OF THE JOB					
Task Step 1			Task Hazards		
<i>Recommended Actions to Prevent Injury and Control Hazard</i>					
Person Responsible			Completion Date		
Initial Score:					
Score After Preventive Action:					
Task Step 2			Task Hazards		
<i>Recommended Actions to Prevent Injury and Control Hazard</i>					
Person Responsible			Completion Date		
Initial Score:					
Score After Preventive Action:					
Task Step 3			Task Hazards		
<i>Recommended Actions to Prevent Injury and Control Hazard</i>					
Person Responsible			Completion Date		
Initial Score:					
Score After Preventive Action:					

Task Step 4	Task Hazards
<i>Recommended Actions to Prevent Injury and Control Hazard</i>	
Person Responsible	Completion Date
Initial Score:	
Score After Preventive Action:	

Task Step 5	Task Hazards
<i>Recommended Actions to Prevent Injury and Control Hazard</i>	
Person Responsible	Completion Date
Initial Score:	
Score After Preventive Action:	

RISK TABLE			
Score	Description of Task	Initial Score	Score After Preventive Action
FREQUENCY: How often is the task step performed?			
1	Daily		
2	Weekly		
3	Monthly		
4	Non-Routine		
RELATIVE RISK: How hazardous are the probable effects of conducting this task step? See RISK CHART below for additional guidance.			
1	LOW		
2	MEDIUM		
3	SERIOUS		
4	EXTREME		
TOTAL RISK SCORE (See TOTAL RISK SCORE CHART below for explanation.)			

RISK CHART	CATASTROPHIC Death or permanent disability	CRITICAL Disability in excess of 3 months	SERIOUS Serious injury but recoverable	MARGINAL Minor injury resulting in lost time	MINOR First Aid Only
FREQUENT Likely to occur repeatedly	(4) EXTREME Extensive financial loss in excess of \$1m. Major disruption to operations.	(4) EXTREME Significant financial loss between \$500k and \$1m. Significant disruption to operations.	(3) SERIOUS Substantial financial loss between \$100k and \$5000. Substantial disruption to operations.	(2) MEDIUM Notable financial loss of \$5000 – \$100k. Slight disruption to operations.	(1) LOW Negligible financial loss. No effect on operations.
PROBABLY Likely to occur several times	(4) EXTREME	(4) EXTREME	(3) SERIOUS	(2) MEDIUM	(1) LOW
OCCASIONAL Likely to occur sometime	(4) EXTREME	(3) SERIOUS	(2) MEDIUM	(2) MEDIUM	(1) LOW
REMOTE Not likely to occur	(3) SERIOUS	(2) MEDIUM	(2) MEDIUM	(1) LOW	(1) LOW
IMPROBABLE Very unlikely to occur	(2) MEDIUM	(1) LOW	(1) LOW	(1) LOW	(1) LOW

TOTAL RISK SCORE	Tolerability Guidance on Necessary Action and Timescale	
0-3	Low Risk	These risks are considered acceptable. No additional controls are required unless they can be implemented at very low cost (in terms of time, money, and effort). Actions to further reduce these risks are assigned low priority. Arrangements should be made to ensure that the controls are maintained.
4-6	Moderate Risk	Consideration should be as to whether the risks can be lowered, where applicable, to a tolerable level and preferably to an acceptable level, but the costs of additional risk reduction measures should be considered. The risk reduction measures should be implemented within a defined time period. Arrangements should be made to ensure that controls are maintained, particularly if the risk levels are associated with harmful consequences.
7-9	High Risk	Substantial efforts should be made to reduce the risk. Risk reduction measures should be implemented urgently within a defined time period and it might be necessary to consider suspending or restricting the activity, or to apply interim risk control measures, until this has been completed. Considerable resources might have to be allocated to additional control measures. Arrangements should be made to ensure that controls are maintained, particularly if the risk levels are associated with extremely harmful consequences and very harmful consequences.
10-12	Extreme Risk	These risks are unacceptable. Substantial improvements in risk control measures are necessary so that the risk is reduced to a tolerable or acceptable level. The work activity should be halted until risk controls are implemented risk is reduced. If it is not possible to reduce the risk, the work should remain prohibited.