Preliminary Blasting Plan

Hoffman Falls Wind Project

Towns of Fenner, Nelson, Eaton, and Smithfield

Madison County, New York

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1.0 Introduction

1.1 Project Description

The proposed Hoffman Falls Wind Project (the Project) is a utility-scale wind energy generating project located in Madison County, New York with a generating capacity of up to 100 megawatts (MW). The Facility will include up to 24 wind turbines, with 12 located in the Town of Fenner, three in the Town of Smithfield, one in the Town of Nelson, and eight in the Town of Eaton. Associated support facilities will include an underground medium voltage collection system, gravel access roads, permanent meteorological (MET) and aircraft detection lighting system (ADLS) towers, temporary construction laydown areas, a temporary concrete batch plant, an operations and maintenance (O&M) facility, a medium voltage-to-transmission voltage collection substation, a point of interconnection (POI) switchyard, and a short 115kV overhead generation tie (gen-tie) line that will connect the Facility to the high voltage electrical grid. Facility components are located within private parcels or portions of parcels that have been leased by the Applicant (the Facility Site).

1.2 Subsurface Stratigraphy

Based on the stratigraphy encountered in the geotechnical borings presented in the preliminary geotechnical report, competent bedrock is generally lacking from 0-10 feet below the ground surface. However, competent bedrock may be encountered during construction and blasting may be required in some locations for the construction of turbine foundations and access roads. Fill material resultant from blasting and other construction activities will be used elsewhere on site for road, turbine pad, and turbine crane pad construction in accordance with the geotechnical report, to minimize the net import or export of fill to or from the Facility Site.

Based on the geotechnical borings completed for this project, karst subsurface conditions are not known to be present within the project limits as discussed in the geotechnical report, and the blasting plan does not need to address special requirements applicable to the presence of karst.

1.3 Blasting Personnel

Blasting shall be performed by a New York State Department of Labor blasting contractor, who is fully licensed and insured for the transportation, use, and handling of explosives in accordance with all applicable federal, state, and local requirements. Blasting permits shall be obtained as required by local authorities.

1.4 Statutes and Regulations

Blasting operations shall adhere to applicable New York State statutes and regulations governing the use of explosives. The state regulations are contained in Title 12 New York Codes, Rules and Regulations (NYCRR) Part 39 and in Industrial Code Rule 53 and include such requirements as: licensing of operators; magazine (explosive storage) certification; and procedures for conducting operations in a safe manner. All pertinent safety regulations and standards shall be applied as required for safety, security, and other related details for blasting. Additional applicable safety regulations include:

- Code of Federal Regulations A.T.F. Title 27.
- New York State Industrial Code Rule 53.
- Directive 495 standards of the National Fire Protection Association (NFPA).
- Occupation Safety and Health Administration (OSHA) standards, 29 CFR 1926.900-1926.914 and 1910.109.
- New York State Industrial Code Title 12- Part 39.
- Article 16 of the Labor Law of the State of New York.

2.0 Notifications

The Applicant will provide notice of construction activities, including blasting, in accordance with the Section 94-c regulations All property owners located within one-half mile of the blast area (including cemeteries),[1] will be notified of blasting activities and provided with a blasting schedule. The schedule will contain, at a minimum: (1) the name, address, and telephone number of the operator, (2) identification of the specific areas in which blasting will take place, (3) dates and time periods when explosives are to be detonated, (4) methods to be used to control access to the blasting areas, and (5) type and patterns of audible warning and all-clear signals to be used before and after blasting.

3.0 Condition Surveys

3.1 Pre-Condition Survey

Prior to blasting at each site, a pre-blast survey shall be conducted. The pre-blast survey will inspect the blast area, and adjacent areas (defined as no less than a 500-foot radius from the blast area). The survey will document existing conditions and will include, but not be limited to buildings/structures, water supply wells, utilities (above and below ground). The survey will include written documentation as well as photographic documentation of existing conditions.

3.2 Post-Condition Survey

At the completion of blasting, a post-blast survey shall be conducted of the same facilities (structures, foundations, water supply wells, utilities, etc.) as documented during the pre-blast survey. Findings different than those reported during the pre-blast survey shall immediately be provided to the contractor / subcontractor / owner and shall be documented in writing and photographed. Depending on the nature (and source) of the difference, specific corrective actions should be developed in consultation with the affected party, setting forth the method, procedures, and timing of implementation.

3.3 Water Well Surveys

To ensure water wells are not impacted, a qualified third party must be engaged to perform pre- and post- construction testing of the potability of water wells within 1,000 feet of an existing, active water

[1] Should impacts occur (i.e. shifted or relocated monuments), the Applicant will work the property owner to restore monuments, if needed.

supply well on a non-participating property, provided the permittee is granted access by the property owner.

Should the third-party testing conclude that the water supplied by an existing, active water supply well met federal and state standards for potable water prior to construction, but failed to meet such standards after construction as a result of facility activities, the permittee shall cause a new water well to be constructed, in consultation with the property owner, at least 100 feet from collection lines and access roads, and at least 500 feet from wind turbines, as practicable given siting constraints and landowner preferences. The results of such tests and reports shall be made available to the relevant municipalities upon request.

4.0 Protection of Structures

Blasting shall be prohibited within five hundred (500) feet of any known existing, active water supply well or water supply intake on a non-participating property. Proposed blasting operations immediately adjacent to overhead power lines, MET and ADLS towers, communications lines, utility services, or other structures shall not be carried out until the operators and/or owners have been notified and measures for safe control have been established, agreed to, and executed.

5.0 Transportation, Storage, and Handling of Explosives

All explosives will be delivered to the job site daily. All vehicles transporting explosive materials will display the placards, numbering and/or other signs required by law and will be driven only by personnel with the appropriate licenses/permits. Vehicles transporting explosives will not be left unattended. All explosives and blasting agent standards developed by the Occupational Safety and Health Administration (OSHA), will be followed (see Licenses, Permits, and Regulations below).

Explosives will not be stored overnight at the site. Only the explosives required to perform the day's work will be brought to the site. Explosives will be stored in accordance with applicable requirements of the United States Bureau of Alcohol, Tobacco, and Firearms and New York State Department of Labor. The storage area of all explosive materials shall be located on the site in an area approved by the blasting contractor. Caps or other detonating devices will not be stored with Class A explosives. The designated storage site, explosive transporting vehicles, and areas where explosives are being used shall be clearly marked and will display the required warning signs.

There shall be no smoking, open lights, or fire of any kind within 50 feet of any area where explosives are being handled. No source of ignition, except necessary means to light fuses or fire electric detonators, shall be permitted in an area containing loaded holes. Containers of explosive materials shall be opened only with non-sparking tools or instruments. Metal slitters may be used for opening fiberboard boxes, paper bags or plastic tubes. After loading of a blast is completed, all excess explosive materials and detonators shall be removed to a safe location or returned immediately to the storage area, observing the same rules as when being conveyed to the blasting area.

6.0 Blasting Operations

6.1 Hours of Operation

Blasting will be limited to 7 a.m. to 8 p.m. Monday through Saturday and 8 a.m. to 8 p.m. on Sunday and national holidays, with the exception of blasting that needs to occur during extended hours beyond this schedule on an as-needed basis.

6.2 Monitoring

All blasts will be monitored by a representative who has been properly trained in the set-up and use of seismic monitoring equipment. At least one seismograph will be in use during blasting activities. Monitoring equipment will be placed at the nearest structure to the blast site. In addition, blasting activities will be monitored for compliance with the applicable environmental commitments and permits by the environmental monitor.

Blasting shall be designed and controlled to meet the limits for ground vibration set forth in United States Bureau of Mines Report of Investigation 8507 Figure B-1 (see section 900-15.1(l)(1)(i) of this Part), and air overpressure shall be under the limits set forth in the Conclusion Section in United States Bureau of Mines Report of Investigation 8485 (USBM RI 807 and USBM RI 8485 (see section 900-15.1(l)(1)(ii) of this Part) to protect structures from damage.

Blast vibration will be monitored at the blast site, typically at the structure(s) closest to the blast site. Vibration limits will closely follow limits established by the United States Bureau of Mines Vibration Guidelines. Blast designs will be modified as required to stay within the guidelines. Blasting operations will be modified accordingly when approaching buildings and utilities.

6.3 Blasting Procedures

Blasting operations will be strictly coordinated with all appropriate parties, including the local fire departments. In establishing the blasting sequence, emphasis will be placed on the safe and efficient removal of the rock existing within the Facility Site without impact to surrounding structures. Blasting sequences will be developed to create adequate relief which will minimize ground vibrations and offer the greatest protection possible to the surrounding structures.

All loading and firing shall be directed and supervised by personnel licensed in New York State to handle explosives. All drill holes shall be sized for free insertion of explosives. Drilling and loading operations shall not be carried out in the same area, and drilling shall be separated from loaded holes by at least the depth of the loaded hole or 50 feet, whichever is greater. The loading or loaded area shall be kept free of any equipment, operations, or persons not essential to loading; no vehicle traffic shall be permitted over loaded holes; the blast site shall be guarded or barricaded and posted with danger signs to restrict unauthorized entry. No holes shall be loaded except those to be fired in the next round of blasting; after loading, all remaining explosive materials and detonators shall be immediately returned

to an authorized magazine; no explosive materials or loaded holes shall be left unattended at the blast site at any time. Cartridges shall be primed only in the number required for a single round of blasting.

Prior to firing a shot, all persons in the danger area shall be warned of the blast and ordered to relocate to a safe distance. Blasts shall not be fired until all personnel have retreated to a designated safe area and until no one is in a dangerous location. Prior to firing a shot, a competent flag person shall be posted at all access points to danger areas. Blasting machines shall be tested prior to use and periodically thereafter as prescribed by the manufacturer. Blasting machines shall be operated, maintained, and inspected as prescribed by the manufacturer.

Vehicles equipped with radio transmitters and portable 2-way radios will not be permitted within 100 feet of blasting operations.

Explosive materials shall not be abandoned. All refuse from explosive loading such as empty box paper and fiber packing shall be disposed of at an approved location.

Each blast will be preceded by a security check of the affected area and then a series of warning whistles. Communications will be made with job site supervisors and local officials as required to ensure the safest possible operation. All personnel near the blast area will be warned. No blast will be fired until the area has been secured and determined safe. The warning whistles will follow the following sequence:

1. WARNING SIGNAL - a one-minute series of long audible signals 5 minutes prior to blast signal;
2. BLAST SIGNAL - a series of short audible signals 1 minute prior to the shot; and
3. ALL CLEAR SIGNAL - a prolonged audible signal following the inspection of the blast area.

The blast site will be examined by the blaster before the “all clear” signal is given to determine if it is safe to resume work.

6.4 Matting and Protective Cover

Sufficient stemming, matting or natural protective cover shall be used to prevent fly rock from leaving property owned or under control of the permittee or operator or from entering protected natural resources or natural buffer strips. Crushed rock or other suitable material must be used for stemming when available. Native gravel, drill cuttings or other material may be used for stemming if no other suitable material is available.

For a blast initiated by detonating cord, the detonating cord must be covered by crushed rock or other suitable cover to reduce noise and concussion effects. Special care will be taken with detonating cords and connectors to protect from the impact of falling rocks or other objects.