

Section 27. PUBLIC SAFETY

27.1. PUBLIC SAFETY RELATED SETBACKS

Maine law requires that proposed generating facilities be constructed with setbacks and other considerations that are adequate to protect public safety.²⁰

27.2. DESIGN SAFETY CERTIFICATION

The Project will be constructed with 4.2 MW wind turbines (Vestas V150). The conformity of Vestas V150 with International Electrotechnical Commission (IEC) standards has been certified by Det Norske Veritas (Exhibit 27-1).

27.3. OVERSPEED CONTROL

The Vestas V150 4.2 is a 3-bladed, horizontal-axis, upwind, variable-speed, and pitch-regulated turbine model.

The turbine has a DASG 560/6M induction generator rated for 1485 rpm. Inductive sensors monitor both the generator and main shaft rpm and alert the wind turbine controller to overspeed scenarios. The turbine's independent programmable logic controller (PLC) monitors rotor rpm and initiates feathering of the blades for braking in overspeed situations.

Primary braking of the Vestas V150 4.2 is aerodynamic. The pitch system can fully stop the turbine with full blade feathering, made possible by blades mounted on pitch bearings and operated by hydraulic cylinders in each blade. There is also a mechanical disc brake, with its own dedicated hydraulic system, that can be activated by emergency stop buttons and that serves as a park brake when the blades are inactive.

The cut-in speed for this model is 3 meters per second (m/s) or approximately 6.7 miles per hour (mph). The cut-out speed for this turbine is an average wind speed of 24.5 m/s (58.8 mph). When that occurs, the turbine will shut down automatically via blade feathering. The turbine will cut back in when the wind speed reaches an average of 17.5 m/s (39.1 mph). The Vestas V150 4.2 can withstand gusts of up to 52.5 m/s (117.5 mph). In addition to safety controls designed and programmed into the turbine itself, all turbines are monitored remotely around the clock by Apex's Remote Operations Control Center (ROCC), which provides redundancy in monitoring and alerts technicians to system malfunctions and changes in performance. It also enables technicians to manage turbine operations in anticipation of severe weather events, including conditions that could create icing on turbine blades.

27.4. PUBLIC SAFETY-RELATED SETBACKS

MDEP requires evidence that wind turbines have been sited with appropriate safety-related setbacks from adjacent nonparticipating properties and public roads. The recommended minimum setback to an adjacent nonparticipating property line or public road is a distance that complies with the local setback requirements, or 1.5 times the hub height plus the rotor diameter, whichever is greater. The hub height of the Vestas V150 4.2 turbine is 125 meters (m) and the rotor diameter is 150 m, resulting in a setback of 337.5 m or 1,107.28 feet (ft). Downeast Wind is

²⁰ Available online: <http://www.mainelegislature.org/legis/statutes/38/title38sec484.html>

using a setback of 1,117.28 ft (an additional 10 ft) from nonparticipating parcels because parcel boundaries are not surveyed.

Downeast Wind turbines will be more than 1,117.28 ft from property lines of the nearest nonparticipating abutting landowner and 1,107.28 ft from public roads. The turbines in the Town of Columbia use the same setbacks from abutting property lines of nonparticipating landowners and public roads and adhere to a 2,500-ft setback from nonparticipating occupied dwellings, in accordance with the town's wind ordinance. One turbine (T33) is closer than the property line setback in the Town of Columbia but remains in compliance because of a wind lease on the adjacent parcel. All parcel boundaries were assigned a rotor radius + 4 m (259 ft) setback to avoid blade overhang, but T33 is only 60 ft from the parcel boundary, causing the blade to overhang on the adjacent participating parcel, 29120_010-024-000. T33 does comply with the full nonparticipating setback from the adjacent nonparticipating parcel to the east, 29120_010-015-000.

27.5. FIRE SAFETY

27.5.1. FIRE SUPPRESSION

The Vestas V150 4.2 MW turbine has design features that will minimize the risk of fire and fire-related damage. The Applicant will also implement operational fire prevention protocols to minimize fire risks and emergency action planning and training to respond to fire in and around project facilities. See Exhibit 27-2 for the manufacturer's fire safety features of the Vestas V150 4.2.

In accordance with the United States National Fire Protection Association (NFPA) code 850 preferences, the Vestas V150 4.2 turbine uses dry type transformers that are air cooled and, by design, sufficiently distant from the other components in the nacelle to minimize the risk of electrical arc and fire in the medium-voltage transformer. Additionally, the turbines are monitored 24/7 using a Condition Monitoring System (CMS), which is recommended by the Confederation of Fire Protection Associations in Europe (CFPA E) document "Wind turbines fire protection guideline." The CMS monitors hundreds of signals throughout the turbine, including temperature, current, and voltage measurements. If any of these indicators exceed the pre-set thresholds, the turbine is designed to safely shut down.

Independent of the control system, the turbines contain arc detectors to instantaneously detect an arc incident, safely shut down the turbine, and open the main switchgear. The shutdown causes the blades to pitch to an aerodynamically neutral position using stored hydraulic energy, which brings the rotor to a complete stop without requiring the use of a mechanical disc brake. This is in conformance with CFPA E and NFPA.

The turbines are also equipped with an ionization smoke detector, located in the nacelle, that works independently from the turbine controller per the CFPA E recommendations. The turbine ceases operation if the smoke detection system detects smoke or heat or if the detection system fails.

27.5.2. LIGHTNING PROTECTION

The Vestas V150 4.2 is equipped with lightning protection systems. The lightning protection mechanisms will transfer lightning strikes safely to the ground and extends from the tips of the blades, around the entire nacelle, the tower, and into the foundation earthing system (Exhibit 27-

2). The V150 is designed according to lightning protection level 1 of the International Electrotechnical Commission (IEC) 62305 standard, which is the highest protection level with safe conduction of lightning strikes up to 200kA.

27.5.3. OPERATIONS AND MAINTENANCE MEASURES

Operational exposures are mitigated with regularly scheduled preventive maintenance to the turbine and balance of plant equipment. These maintenance procedures are developed in accordance with Vestas recommended best practices. In addition, the turbines are monitored 24 hours a day, seven days a week by personnel located in Charlottesville, Virginia.

The turbine technicians are required to have access to a standard safety kit when working on site. This kit includes first aid equipment, a 5–6 kg CO₂ fire extinguisher, and an emergency descent device. This equipment is regularly inspected, and technicians are required to check the condition of fire extinguishers prior to each turbine visit. Additionally, technicians will be required to receive regular training on the standard safety kit.

27.5.4. FIRE SAFETY PLANNING

Apex Clean Energy will regularly train employees and contractors regarding fire prevention and response protocols. Apex will also establish emergency response protocol with local responders to ensure timely notification, access, and coordination in the event of an incident. These protocols can be seen in the draft Emergency Action Plan (EAP) in Exhibit 27-3. The final EAP will be submitted to MDEP prior to operations and will also be reviewed in partnership with local emergency responders. Training and drills will be scheduled annually to ensure all parties are prepared for project-related emergency scenarios.

The EAP primarily contains procedures and guidelines on the following situations in and around project facilities:

1. Medical emergency
2. Building utility failure
3. Fire
4. Hazardous material spills or releases
5. Earthquakes
6. Severe weather conditions (electrical storms, tornadoes, hurricanes, flooding, and snowstorms)
7. Physical security threats or criminal activity
8. Catastrophic turbine failure

27.5.5. COMMUNICATION WITH LOCAL FIRST RESPONDERS

On May 15, 2017, the Applicant convened a meeting with local first responders to present the project and discuss first response scenarios and concerns relating to wind farm facilities. That meeting was attended by representatives from Pleasant River Ambulance in Columbia and Petit Manan Ambulance in Milbridge; LifeFlight of Maine; Downeast Community Hospital; the Washington County Sheriff's Office; and the Epping Volunteer Fire District as well as fire departments in Addison, Harrington, and Cherryfield. The Applicant has since consulted with the Maine Forest Service, the Epping Volunteer Fire District in Columbia, and the Deblois Fire Department regarding specifics of the project layout and potential emergency response scenarios.

The Epping Volunteer Fire District has jurisdiction over the Town of Columbia. The team has indicated that it has been briefed by the Applicant and is prepared for any potential assistance required of it (Exhibit 27-4).

The Deblois Fire Department has reviewed the project because of its proximity to the northern project areas in T18 and T24. It has been briefed by the Applicant and is prepared for any potential assistance required of it (Exhibit 27-4).

The Maine Forest Service has jurisdiction over the entire project area. District Ranger Jeff Currier of the Maine Forest Service reviewed the project layout and provided confirmation (Exhibit 27-4).

The risks of fire for the Project are minimal, and the Applicant will employ appropriate mitigation, response protocol, training, and communication with local emergency response personnel and assets.



EXHIBIT 27-1: INTERNATIONAL ELECTROTECHNICAL COMMISSION CERTIFICATION



Certificate No.

IECRE.WE.TC.19.0075-R2

IECRE - IEC System for Certification to Standards Relating to Equipment for Use in Renewable Energy Applications

TYPE CERTIFICATE

Wind Turbine

This certificate is issued to

Vestas Wind Systems A/S
Hedeager 42
8200 Aarhus N
Denmark

for the wind turbine

Vestas V150-4.0 MW / V150-4.2 MW

wind turbine class (class, standard, year)

Annex 1, IEC 61400-1: 2005+Amd1: 2010

This certificate attests compliance with IEC 61400 Series as specified in subsequent pages. It is based on the following reference documents:

Design basis evaluation conformity statement
Dated

DB-DNVGL-SE-0074-05341-2
2019-12-20

Design evaluation conformity statement
Dated

DE-DNVGL-SE-0074-04352-4
2019-12-20

Type test conformity statement
Dated

TT-DNVGL-SE-0074-05340-2
2019-12-20

Manufacturing evaluation conformity statement
Dated

ME-DNVGL-SE-0074-05339-2
2019-12-20

Final evaluation report
Dated

FER-TC-DNVGL-SE-0074-05338-2
2019-12-20

The conformity evaluation was carried out in accordance with the rules and procedures of the IECRE System www.iecre.org

The wind turbine type specification begins on page 2 of this certificate.

Changes in the system design or the manufacturer's quality system are to be approved by DNV GL. Without approval, the certificate loses its validity.

This certificate is valid until:
2024-12-12

Approved for issue on behalf of the IECRE
Certification Body:

Nils Kreidelmeyer *Bente Vestergaard*
Nils Kreidelmeyer / Bente Vestergaard
Senior Project Manager / Service Line Leader, Type
Certification
Hamburg/Hellerup 2019-12-20



Renewables Certification
Brooktorkai 18
20457 Hamburg, Germany



Certificate No.

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TYPE CERTIFICATE

Wind Turbine

Machine parameters:

| | |
|--|---|
| Power regulation: | pitch-controlled |
| Rotor orientation: | Upwind |
| Number of rotor blades: | 3 |
| Rotor tilt: | 6.0° |
| Cone angle: | -5.5° |
| Rated power: | 4000 kW / 4200 kW |
| Rated wind speed V_r : | Annex 1 |
| Rotor diameter: | 150 m |
| Hub height(s): | Annex 1 |
| Hub height operating wind speed range $V_{in} - V_{out}$: | 3 m/s – 24.5 m/s (with the following HWO wind speeds: $V_{HWO1} = 17.5$ m/s $V_{HWO2} = 21.5$ m/s $V_{HWO3} = 24.5$ m/s) |
| Design life time: | 20 years |
| Software version: | 2019.01 |

Wind conditions:

| | |
|--|---------|
| Characteristic turbulence intensity I_{ref} at $V_{hub} = 15$ m/s: | Annex 1 |
| Annual average wind speed at hub height V_{ave} : | Annex 1 |
| Reference wind speed V_{ref} : | Annex 1 |
| Mean flow inclination: | 8° |

Electrical network conditions:

| | |
|---|--------------------------|
| Normal supply voltage and range: | 720 V |
| Normal supply frequency and range: | 50 or 60 Hz \pm 6 % Hz |
| Voltage imbalance: | IEC 61000-3-6 TR max 2 % |
| Maximum duration of electrical power network outages: | Two 3 months periods |
| Number of electrical network outages | Max 52 per year |



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Other environmental conditions (where taken into account):

Normal and extreme temperature ranges:

*de-rating strategy above +30°C for V150-4.0 MW

*de-rating strategy above +20°C for V150-4.2 MW

Normal: -20°C to +45°C*

Extreme: -40°C to +45°C

Relative humidity of the air:

100% (max 40% of time) and
90% (rest of life time)

Air density:

1.225 kg/m³ (for normal
operation)

1.273 kg/m³ (for low
temperature operation)

Solar radiation:

1000 W/m²

Lightning protection system (standard and protection
class):

Designed acc. to IEC 61400-24,
Protection Level 1 and IEC
61312-1



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TYPE CERTIFICATE

Wind Turbine

Major components:

**If not otherwise stated, the certificate holder is the manufacturer.

Blade:

| | |
|----------------------------------|--|
| Type: | Hybrid / Infused |
| Material: | Carbon fibre reinforced epoxy and glass fibre reinforced epoxy |
| Blade length: | 73.65 m |
| Number of blades: | 3 |
| Manufacturer: | Vestas Wind Systems A/S |
| Drawing / Data sheet / Part No.: | 0069-0345, Rev. 3 |

Blade Aero Addons:

| | |
|---------------------------------|--|
| Type | STE's and RVG's |
| Manufacturer | Vestas Wind Systems A/S |
| Drawing / Data sheet / Part no. | STE Kit: 0072-2639, Rev. 0 RVG: 0073-5893, Rev. 0 |

Blade bearing:

| | |
|----------------------------------|-----------------------------|
| Type: | Triple row cylinder bearing |
| Drawing / Data sheet / Part no.: | 29110524, Rev. 3 |
| TPS no.: | 0023-3088, Rev. 5 |

Pitch System:

| | |
|----------------------------------|--------------------------|
| Type: | Hydraulic power unit |
| Manufacturer: | LJM/HINE/Liebherr/Hengli |
| Hydraulic Cylinder (140/90x922): | 29111326, Rev. 1 |
| Type | Pitch Actuation Module |
| Manufacturer | Vestas Wind Systems A/S |
| Drawing / Data sheet / Part no. | 29111583, Rev. 1 |



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Main shaft:

Type: Cast iron
Material: EN-GJS-500-14
Drawing / Data sheet / Part no.: 29085300, Rev. 4

Main bearing:

Type: Spherical Roller Bearing
Manufacturer: FAG
Drawing / Data sheet / Part no.: F-582562.PRL-WPO 000

Main bearing:

Type: Spherical Roller Bearing
Manufacturer: SKF
Drawing / Data sheet / Part no.: 240/950 CA / C3LW33VQ113

Main bearing:

Type: Spherical Roller Bearing
Manufacturer: JTKET / KOYO
Drawing / Data sheet / Part no.: 240/950 RHAW33TS1CS

Gearbox:

Type: 2 stage planetary and 1 helical stage gearbox
Manufacturer: ZF (EH1052A)
Gear ratio: 1:143.37
Drawing / Data sheet / Part no.: 096-EH1052A001, Rev. A

Gearbox:

Type: 2 stage planetary and 1 helical stage gearbox
Manufacturer: Winergy (PZAB 3580)
Gear ratio: 1:142.76
Drawing / Data sheet / Part no.: A5E45622888A, rev.2



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TYPE CERTIFICATE

Wind Turbine

Yaw System:

Drive type: 8 x 2.7 kW, 400 V, 50 Hz asynchronous motors

Drive manufacturer: Lafert

Drawing / Data sheet / Part no.: MZ10/A4A-55337

Drive type: 8 x 3.2 kW, 400 V, 60 Hz asynchronous motors

Drive manufacturer: Lafert

Drawing / Data sheet / Part no.: MZ10/A4A-55338

Drive type: 8 x 2.7 kW, 400 V, 50 Hz asynchronous motors

Drive manufacturer: ABB

Drawing / Data sheet / Part no.: 3GZF500810-23 A 14 AA 100 A

Drive type: 8 x 3.2 kW, 400 V, 60 Hz asynchronous motors

Drive manufacturer: ABB

Drawing / Data sheet / Part no.: 3GZF500810-23 A 14 AA 100 A

Drive type: 8 x 2.7 kW, 400 V, 50 Hz asynchronous motors

Drive manufacturer: Bonfiglioli

Drawing / Data sheet / Part no.: CD00006614-02

Drive type: 8 x 3.2 kW, 400 V, 60 Hz asynchronous motors

Drive manufacturer: Bonfiglioli

Drawing / Data sheet / Part no.: CD00007013-01

Gear type: Bevel stage and three planetary stages, i = 952.3

Gear manufacturer: Bonfiglioli

Drawing / Data sheet / Part no.: I7090T010300



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TYPE CERTIFICATE

Wind Turbine

Gear type: Bevel stage and three planetary stages, i = 935
Gear manufacturer: Comer
Drawing / Data sheet / Part no.: N07297_01

Bearing type: Preloaded sliding bearing, PETP pads
Bearing manufacturer: Vestas Wind Systems A/S
Drawing / Data sheet / Part no.: 29104726, Rev. 0

Generator:

Type: DASG 560/6M, Induction generator
Manufacturer: Vestas Nacelles Deutschland (VND)
Rated power: 4450 kW
Rated frequency: 74 Hz
Rated speed: 1485 rpm
Rated voltage: 800 V
Rated current: 3650 A
Insulation class: H
Degree of protection: IP54

Converter:

Type: Full quadrant IGBT
Manufacturer: Vestas Wind Systems A/S
Rated voltage machine/grid: 720 Vrms / 800 Vrms
Rated current: 3200 A
Degree of protection: IP54
Drawing / Data sheet / Part no.: 0069-2805, Rev. 0

Transformer:

Type: Cast-Resin transformer
4GY6781-1EY
Manufacturer: Siemens
Rated voltage: 33 / 0.72 V



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TYPE CERTIFICATE

Wind Turbine

| | |
|----------------------------------|--|
| Degree of protection: | IP00 |
| Drawing / Data sheet / Part no.: | 0073-7914, Rev. 0 |
| Type: | Cast-Resin transformer DTTH1N 4000/30 |
| Manufacturer: | SGB |
| Rated voltage: | 33 / 0.72 V |
| Degree of protection: | IP00 |
| Drawing / Data sheet / Part no.: | 0073-7915, Rev. 0 |
| Tower: | |
| Type: | Conical steel |
| Number of sections: | 4 |
| Length: | 102.6 m (HH 105 m) |
| Drawing / Data sheet / Part no.: | 0074-7302 Rev.0 (T966901) |
| Tower: | |
| Type: | Conical steel |
| Number of sections: | 5 |
| Length: | 102.6 m (HH 105 m) |
| Drawing / Data sheet / Part no.: | A005-4762, Rev.0 (T966906) |
| Tower: | |
| Type: | Conical steel |
| Number of sections: | 5 |
| Length: | 102.6 m (HH 105 m) |
| Drawing / Data sheet / Part no.: | 0068-6713, Rev.4 (T966900) |
| Tower: | |
| Type: | Conical steel |
| Number of sections: | 6 |
| Length: | 152.6 m (HH 155 m) |
| Drawing / Data sheet / Part no.: | 0078-9884 Rev.2 (T969B00) |



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Manuals:

| | |
|-------------------------------------|-------------------|
| Operating manual: | 0079-9811, Rev. 1 |
| Transportation and handling manual: | 0079-9801, Rev. 2 |
| Installation manual: | 0079-9663, Rev. 2 |
| Commissioning manual: | 0079-9665, Rev. 0 |

Service lift:

| | |
|---------------|--|
| Manufacturer: | Avanti |
| Type: | Avanti Shark / Avanti Dolphin / Avanti Beluga |

| | |
|---------------|---------------|
| Manufacturer: | Power climber |
| Type: | Sherpa-SD4 |

Crane:

| | |
|---------------------------|---------------------|
| Manufacturer: | Star 071/95 Liftket |
| Maximum lifting capacity: | max 800 kg |



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TYPE CERTIFICATE

Wind Turbine

Annex 1

Configurations covered by this Type Certificate

| ID* | Variants | Hub Height | IEC WT class | Turbulence Intensity I _{ref} | Rated wind speed V _r | Mean wind speed V _{ave} |
|-----|-------------|------------------|---------------------|---------------------------------------|---------------------------------|----------------------------------|
| 1.1 | V150-4.0 MW | 105 (T966901) | IEC 3B | 0.14 | 9.7 m/s | 7.5 m/s |
| 1.2 | V150-4.2 MW | 105 (T966901) | S (based on IEC 3B) | 0.14 | 9.9 m/s | 7.0 m/s |
| 1.3 | V150-4.0MW | 105 (T966900) | IEC 3C | 0.12 | 9.8 m/s | 7.5 m/s |
| 1.4 | V150-4.2 MW | 105 (T966900) | S (based on IEC 3C) | 0.12 | 10.1 m/s | 7.0 m/s |
| 1.5 | V150-4.0MW | 105 (T966906) | IEC 3B | 0.14 | 9.7 m/s | 7.5 m/s |
| 1.6 | V150-4.2 MW | 105 (T966906) | S (based on IEC 3B) | 0.14 | 9.9 m/s | 7.0 m/s |
| 2.1 | V150-4.0MW | 155 (T969B00) | IEC 3B | 0.14 | 9.7 m/s | 7.5 m/s |
| 2.2 | V150-4.2 MW | 155 (T969B00) | S (based on IEC 3B) | 0.14 | 9.9 m/s | 7.0 m/s |

* The ID follows the hub height with its first digit, the second digit is only consecutive to identify the different configurations within one hub height



EXHIBIT 27-2: MANUFACTURER FIRE SAFETY FEATURES

June 10, 2020

Nikhil Kondabala
Apex Clean Energy
310 4th St. NE, Suite 300
Charlottesville, VA 22902

RE: Fire Safety of Vestas V150

Mr. Kondabala,

Thank you for your recent inquiry about the risk of fire associated with the V150 wind turbine generator models for Downeast Wind project. Safety is Vestas' number one priority and Vestas takes the risk of fires very seriously. As described below, the V150 turbines are designed to minimize this risk.

Electrical Equipment

The importance of safety at Vestas means electrical safety is a major design focus for all Vestas wind turbines, including the V150 models. Proper design and manufacture of electrical systems is essential for protection of personnel and minimizing risk of fires.

One source of potential fire in wind turbines is the medium-voltage transformer which is located in the nacelle. The Vestas V150 turbines reduce risk by using dry type transformers that are air cooled and physically separated from other components in the nacelle. This minimizes the risk of an electrical arc and fire, and is the preferred configuration of the United States National Fire Protection Association (NFPA) code 850 (section 5.1.5.1).

Vestas turbines utilize a Condition Monitoring System (CMS) to monitor hundreds of signals throughout the turbine, including temperature, current, and voltage measurements, to ensure that the turbine is operating completely within normal bounds. The turbine is designed to safely de-rate or shut down if any parameter exceeds pre-set thresholds. Such use of CMS is recommended by the Confederation of Fire Protection Associations in Europe (CFPA E) document "Wind turbines fire protection guideline" (sections 4, 5.1.2, and 5.1.6).

In the case of an electrical arc incident, arc detectors are positioned to instantaneously detect the arc, safely shut down the turbine, and open the main switchgear. This system acts independently of the control system, and removes the energy source for the fire before it has a chance to ignite. The shutdown causes the blades to automatically pitch to an aerodynamically neutral position using stored hydraulic energy, causing the rotor to come to a complete stop within seconds, without requiring use of a mechanical disc brake. This is in accordance with CFPA E (section 5.1.2) and NFPA (section 10.5.1.3) recommendations.

There is an ionization smoke detector located inside the nacelle as recommended by the CFPA E (section 5.2.1). The smoke detector acts independently from the turbine controller and automatically shut down the turbine and open the main switchgear of the turbine using the same procedures as the arc detectors.

Manufacturing quality is essential for ensuring the effectiveness of the turbine's electrical safety systems. Vestas uses state-of-the-art quality systems in its manufacturing facilities, and cascades many of these requirements to sub-suppliers, to ensure that product quality enhances fire safety. Sophisticated systems ensure that bolted connections are at the correct torque value, cable connections are secure, and the entire turbine functions properly before leaving the manufacturing facilities. Each turbine undergoes full-scale testing both in the factory and at the site before it is released for operation. Such quality systems are recommended by the CFPA E to ensure safe operation of wind turbines for their service life (section 5.4).

Lightning Strike

The V150 are designed according to lightning protection level 1 of the International Electrotechnical Commission (IEC) 62305 standard; the highest protection level, corresponding to safe conduction of lightning strikes up to 200 kA; this is the recommended level according to the CFPA E (section 5.1.1). The lightning protection system of the V150 turbines is a proven design, refined over many previous turbine models, incorporating design best practices to ensure safe operation for the duration of the turbine's life. During the turbine design phase Vestas validated the performance of the lightning protection system according to all applicable IEC test standards in state-of-the-art facilities in Europe. This provided verification that the system is designed to transfer lightning strikes safely to ground, no matter where the turbine has been struck. The lightning protection system extends from the tips of the blades, around the entire nacelle, the tower, and into the foundation earthing system. This comprehensive approach to lightning protection is recommended by the CFPA E (section 5.1.1).

Hot Surfaces

Hot surfaces are kept to a minimum in the V150 turbines. In order to bring the rotor to a safe stop, no matter what the wind conditions, the hydraulic pitch system is used, not the mechanical disc brake. This method of operation is reliable and proven across more than 20 years of Vestas wind turbine designs. Each blade of the wind turbine has its own pitch actuator, and in case of problems with the pitch system only two blades are required to bring the rotor to a complete stop.

The mechanical disc brake in the V150 is only used for service activities (stopping rotation of the rotor so that the rotor lock pins can be installed) or when a technician physically presses the emergency stop button. Even during an emergency stop, the mechanical disc brake is only applied at low rotational speeds to limit the amount of heat build-up, and the brake is automatically released after approximately 30 minutes so that brake friction doesn't cause excessive heat. The disc brake is covered, according to the recommendations of the CFPA E (section 3.3.3)

Work Involving Fire Hazards

Welding, burning, grinding, and other work involving heat sources are not part of the standard installation or maintenance plan of the turbine. Such work typically takes place in the factory during the manufacturing process, or in workshops in the case of component repair.

In the rare instance that "hot work" is required to be performed in the turbine (hot work in the turbine is avoided if possible) Vestas' work instructions include numerous requirements to ensure that personnel and equipment are safe. Precautions include ensuring the work area is free of any flammable materials, sufficient ventilation, use of fire blankets, ensuring that extinguishers are on hand, and clean-up and inspection of the work place after the job is finished. Technicians must complete appropriate documentation and obtain permits from site management before engaging in any hot work. Limitation and regulation of hot work is recommended by the CFPA E (section 5.1.5) and NFPA (section 16.3(5)).

Combustible Materials

The use of flammable materials in the turbine cannot be avoided for practical reasons, but Vestas makes efforts to manage these risks appropriately. For example, oil is used in the hydraulic pitch system and to lubricate the gearbox; so the turbine continuously monitors oil pressures and oil levels to ensure that there are no leaks. If a leak is detected the turbine is automatically shut down and technicians need to visit the turbine and repair the issue before it can be re-started.

Materials that are not essential to the operation of the turbine are not left in the machine, including cleaning solvents, rags, papers, garbage, etc. This keeps the amount of flammable materials in the turbine to a minimum, as recommended by the CFPA E (section 5.1.3 and 5.1.4). Smoking is not allowed in Vestas wind turbines, in accordance with CFPA E recommendations (section 5.1.7).

Fire Fighting

Technicians have a standard safety kit that they bring when working on the turbines (in addition to their standard personal protective equipment including safety boots, safety glasses, gloves, fall arrest equipment, etc.). This includes a first aid kit, 5-6 kg CO₂ fire extinguisher, and emergency descent device. Fire blankets are required if any hot work is to be performed. These items are stored at the site office, not the turbine, because it is easier to maintain and inspect them on the ground than during turbine visits, which may be as long as 1 year apart if there are no turbine operation faults.

Technicians receive training and regular refresher courses on the proper usage of these items in the case of emergency situations, as the CFPA E recommends (section 5.1.8). Prior to each turbine visit technicians are required to check that fire extinguishers are in good condition and are not late on inspections.

Maintenance

The V150 turbines are designed with much more working space than other wind turbine models to ensure that technicians have enough open space to safely maintain, repair, and replace equipment as needed – an increase of 60% versus previous Vestas turbine models. In addition to fluorescent lighting along the entire height of the tower, and throughout the nacelle, skylights provide additional lighting during daytime hours. This allows technicians to properly see their work, ensure high quality, and clean up when the work is done; aspects that have been recognized by the CFPA E as important to fire safety (section 3.3.7)

While working on the turbine, technicians keep fire safety in mind at all times. Before performing any work, technicians prepare thorough planning documents to describe the activities that are planned to take place in the turbine and the potential hazards associated with these tasks, including confined space and risk of fire assessments.

During annual service visits, technicians inspect and maintain a variety of components in the turbine that ensures safe operation. For example, electrical connections are inspected and re-tightened, oil filters are replaced, the disc brake is inspected, arc detectors are tested and cleaned, the transformer is inspected and cleaned, etc. These maintenance activities are considered by the CFPA E to be important steps that mitigate the risk of fires (section 5.1.6). Technicians are qualified to perform this work after attending regular and extensive training sessions at our North American training center in Portland, Oregon as well as on the job training and certification activities.

Conclusion

Vestas takes fire safety very seriously, which is shown in the design of the V150 wind turbines. Every aspect of the turbine from layout, to electrical design, to maintenance requirements have been developed to ensure years of safe and trouble-free operation. This wind turbine is an excellent fit for the Downeast Wind project and is designed to safely provide years of clean energy.

Kind regards,



Ben Quinn
Senior Technical Bid Specialist
Vestas-American Wind Technology, Inc.



EXHIBIT 27-3: PRELIMINARY EMERGENCY ACTION PLAN



Downeast Wind EAP

Prepared By: Director, Health & Safety

Approved by: COO

Document ID:

Version: 2.0

Effective Date:

Preliminary Downeast Wind Emergency Action Plan

Site Address

February 2021

Prepared by

Director, Health and Safety

Approved by

Facility Manager, Downeast Wind

Regional Operations Manager

| | | |
|---|---|---|
|  | <p style="text-align: center;">Downeast Wind EAP</p> <p>Prepared By: Director, Health & Safety Approved by: COO Document ID:</p> | <p>Version: 2.0 Effective Date:</p> |
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Introduction

Downeast Wind recognizes that site personnel have the right and need to know the procedures to follow in the event of an emergency. With this policy, Downeast Wind intends to ensure the transmission of necessary information to site personnel regarding emergency action.

This plan focuses only on situations and incidents which are deemed localized and manageable by the site Incident Management Team. In the event of a large-scale crisis such as a runaway turbine, turbine fire, turbine collapse, etc., response actions will be guided by the Apex Crisis Management Plan and supported by the Business Support Team.

This Emergency Action Plan (“EAP”) is maintained to ensure the safety of all site personnel at Downeast Wind facility in the event of a **major** emergency that could occur within our facility or at the fields in which we work. The EAP includes provisions for:

1. crisis management
2. medical emergency
3. building evacuation
4. building utility failure
5. fire
6. earthquake
7. adverse weather
8. hazardous material spill
9. crime / violent behavior / civil disturbance
10. bomb threat
11. turbine fire

The EAP is established to:

1. Identify alarm and emergency evacuation procedures.
2. Identify procedures to be followed by site personnel who remain to operate critical business operations before they evacuate.
3. Identify rescue and medical duties for all site personnel following emergency evacuation.
4. Identify persons who can be contacted for further information or explanation of duties under this plan.
5. Establish training guidelines for site personnel regarding this plan and what they need to know to protect themselves.

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Responsibility

The responsibility for maintaining this EAP has been assigned to the Facility Manager.


Herein the term “Manager” or “Management” shall mean any Manager or Supervisor, unless otherwise specific

Site Personnel Training

New site personnel will be oriented to the EAP via a copy and review of this document in combination with their orientation to other Downeast Wind safety policies.

Beyond new hire orientation, the Facility Manager, or the persons direct supervisor shall be responsible for providing training

A copy of this EAP is provided to each site person and is always to be available for all site personnel to review.

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| | Approved by: COO | |
| | Document ID: | |

Downeast Wind Emergency Management Organization

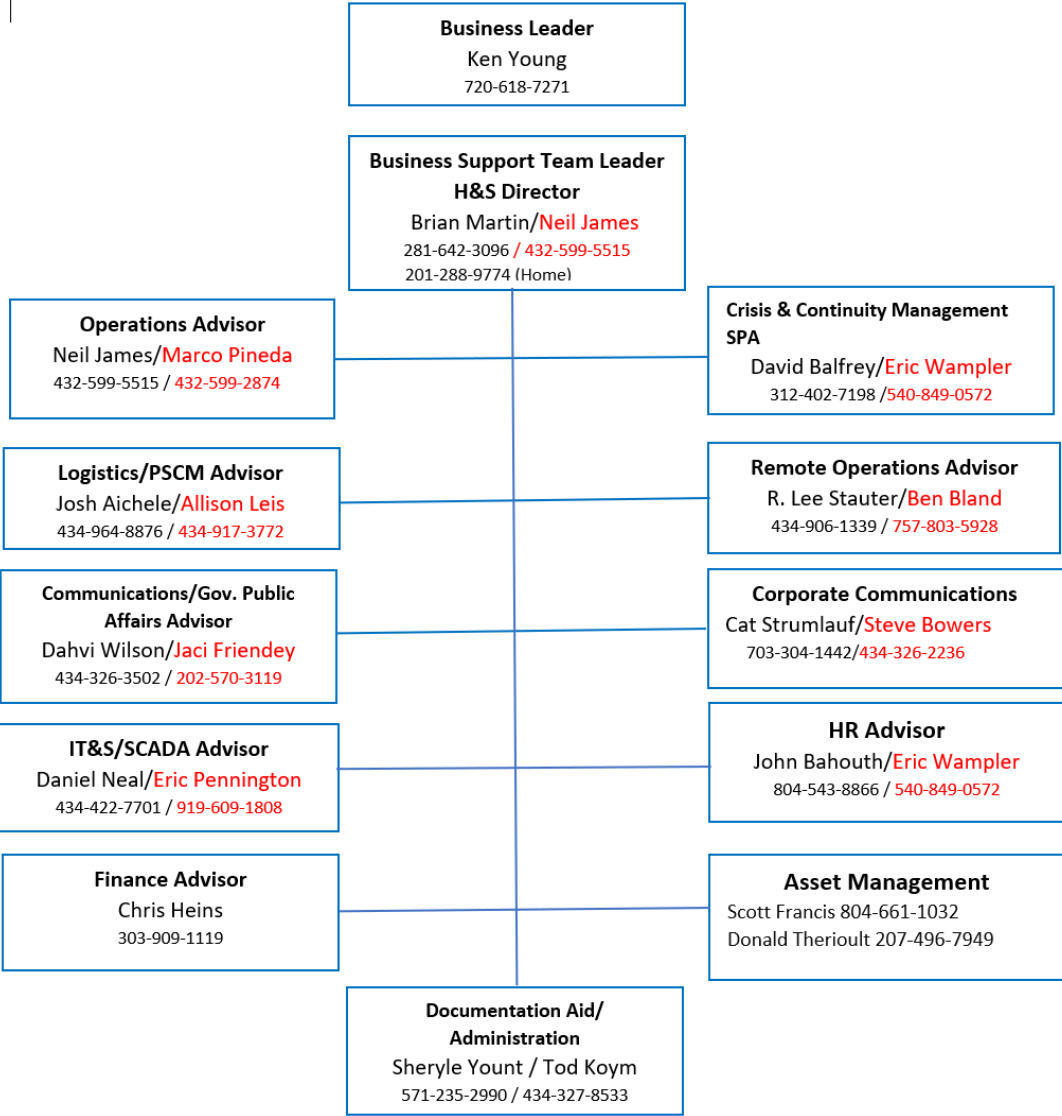
Emergency Organization Chart

| EMERGENCY RESPONSE (ALL SITE PERSONNEL) | | | |
|--|---|--|---|
| First Aid/Survival | Security | Maintenance | Communications |
| <ul style="list-style-type: none"> • Evacuation • Emergency supplies • Injury assessment • First aid • Light search and rescue • Vehicles and other heavy equipment for rescue • Light firefighting • Site personnel shelter | <ul style="list-style-type: none"> • Security personnel to protect lives and property (e.g., equipment lock-up, sentry posting) • Signage, plywood and plastic sheeting, security ribbons, flares • Property damage assessment (physical threats; structural damage) | <ul style="list-style-type: none"> • Utilities control (building utilities shut-off; field high-voltage procedures) • Hazardous materials decontamination • Debris removal • Auxiliary power equipment | <ul style="list-style-type: none"> • Operate communications equipment (PA, phones, pagers, field radio) • Compile and relay disaster information as needed (site personnel roll call, injury lists) • Notify outside emergency services • Deploy messengers • Set up message board |

| MANAGEMENT GROUP | | |
|---|---|--|
| Preparation | Response in an Emergency | Business Recovery |
| <ul style="list-style-type: none"> • Develops and maintains overall emergency plan and policies • Reviews recommendations for mitigative measures and training; makes necessary decisions; authorizes use of finances • Ensures site personnel training on policies and procedures • Maintains supply of emergency cash • Develops, maintains and distributes forms, maps, personnel assignment flowcharts, etc. | <ul style="list-style-type: none"> • Overall coordination and personnel deployment • Declares existence of an emergency based on status and damage assessment reports from teams • Authorizes evacuation when necessary • Interfaces with local utility companies • Interfaces with area Emergency Operation Centers regarding extent of disaster and availability of mass shelter • Responds to media and public inquiries | <ul style="list-style-type: none"> • Responsible for business recovery • Maintains documentation necessary to resume business • Determines value and estimates damages • Handles insurance claims • Handles loan applications • Interfaces with Heritage WindUS corporate entities |

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Operations Crisis Management Flow Chart



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Emergency Contact List

FIRE/POLICE/AMBULANCE/Life Flight: 911

Washington County Emergency Mgmt.: 911, (207) 255-3931, PO Box 297, 85 Court Street, Machias, Maine 04654

Epping Volunteer Fire District.: 911, (207) 483-2036, 392 US-1, Columbia, ME 04623

Down East Community Hospital, (207) 255-3356, 11 Hospital Dr, Machias, ME 04654

**Northern Light Maine Coast Hospital, (207) 664-5311, 50 Union Street, Ellsworth, ME 06405
 Pleasant River Ambulance Service, (207) 483-2700, 183 US-1, Columbia, ME 04623**

Poison Center, (800) 222-1222

Facility Manager: TBD

Cell Ph
 After Hrs. Ph

Real-Time Desk

Phone:

Apex Emergency Contact List

Owner’s Rep: Apex Asset
 Management Address: 310
 4th St. NE, Ste 300
 Charlottesville, VA 22902
 Ph #: (434) 282-2119

VP of Operations and Maintenance:

Office Ph #: 434-270-7434
 Cell Ph # (432)-599-5515

VP of Technology and Energy Assessment:

Cell Ph #: 434-220-3790

Regional Operations Manager:

Office Ph#:
 Cell Ph #:

Apex Remote Operations Control Center (ROCC)

ROCC Ph# 434-328-2305
 Additional Line 844-442-4752

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Emergency Response Procedures

- Ensure that all personnel are safe and accounted for.
- Contact local emergency services or site response team as necessary.
- Secure the site.
- Immediately notify HSE Director (BST Leader)
- Immediately notify supervisor.
- If requested turn over Incident command to local emergency responder.
- Maintain communication with Business Support Team (BST) and/supervisor.
- Recovery Actions to be communicated immediately after incident is controlled and site is accessible for assessment.

Corporate Emergency Response

In an event of a crisis or an emergency at the site, the Facility Manager will have support from the corporate office.

All Wind Farm Emergencies require a response from the corporate office with essential personnel. The essential staff identified includes the Safety Manager, a staff engineer, Operations Directors and possible public relations support. This team is to be used at the discretion of the Facility Manager. At any time during a crisis or an emergency, the Facility Manager can request additional support or stand down the responding essential corporate personnel. At the corporate level, all emergency responses will be operations driven managed by Vice President of Asset Management.

Emergency Communication Operations

ALL FIELD SITE PERSONNEL SHALL CARRY OR HAVE ACCESS TO COMMUNICATIONS MEDIA, AND IS IDENTIFIED BY HIS/HER SITE PERSONNEL NAME/NUMBER. SUBCONTRACTORS OFTEN CARRY THEIR OWN COMMUNICATIONS MEDIA AND ARE IDENTIFIED BY NAME.

COMMUNICATIONS MEDIA IS USED FOR COMMUNICATION BETWEEN THE SITE PERSONNEL IN THE FIELDS AND THE OFFICE PERSONNEL FOR THE PURPOSES OF:

- Field status reports
- Power outage coordination Emergency conditions
- Other daily work performance

IT IS ABSOLUTELY NECESSARY THAT EVERYONE HAVE COMMUNICATIONS MEDIA AT ALL TIMES DURING WORKING HOURS.

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Power Outage Coordination

When communications media is being used to coordinate power outages for transformer maintenance or substation maintenance, you will need to know which fields are affected to call the appropriate offices for clearance of their field personnel.

Community Notification

In the event of an emergency, the Applicant’s Remote Operations Control Center Operator (ROCCO) will assess each emergency to determine whether outreach to the community and adjacent landowners may potentially be required. The Director of Communications will notify municipal officials and landowners as appropriate. Additionally, the MDEP and/or MDPS will be contacted in the event of a spill, release, or similar facility-related emergency.

Field Injury

1. Confirm the severity of injury; are emergency personnel required?
2. Obtain an Accident Report Form and ask all the questions thereon of the caller. Fill out the form as you talk.
3. Confirm that someone from the field will meet emergency personnel at the appropriate rendezvous point.
4. Have the completed Accident Report in hand and contact 911 to relay the information.

Field Injury Procedure

A. FIRST PERSON AT THE ACCIDENT SCENE

Upon arriving at the scene of an injury related accident, the first person shall survey the scene (is it safe?), then notify management personnel of the following:

1. Severity of the victim(s) injury.
2. Emergency personnel “are” or “are not” required.

B. ACCIDENT REPORT

If emergency personnel are required, the management personnel shall:

1. Obtain an “Accident Report”
2. Copy information received via radio to the form.
3. Ensure that all areas of the form are completed.
4. Continue to monitor communications for further developments.

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C. CALL 911

The designated 911-call person shall:

1. Dial 911 immediately.
2. Relay all the information on the accident form to the 911 operator.

D. NOTIFY THE FOLLOWING PERSONS

After the call to 911, the designated 911 call person shall notify all the following personnel (if possible):

1. Facility Manager
2. Health and Safety Manger
3. Regional Operations Manager
4. VP of Operations

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Medical Emergency

Medical cases generally fall under the following categories:

1. **Minor Medical Case** – Medical cases requiring minimal lay car and presenting no disability potential. Frequently do not require professional medical care.
2. **Urgent Medical Case** – Medical cases that are not life threatening and not likely to result in permanent or serious disability. Require professional medical care.
3. **Emergency Medical Case** – Those medical cases that, if not properly attended to, could result in serious injury or death. Permanent disability is possible. Require professional medical care.

PROCEDURE

1. Do not move victim unless safety dictates.
2. Notify “base” of the extent of the medical emergency and your location.
3. See “Field Injury – Emergency Operations Procedure.”
4. If the injury appears to be life threatening, be prepared to give “base” as much information as possible so that they can relay the information to the professional (911) EMT’s.
5. See “Accident Report.”
6. If the injury is not life threatening or not likely to result in permanent disability, first aid care may be provided by a trained site personnel or the injured person will be transported to our industrial clinic by a supervisor.

LOCATION OF FIRST AID SUPPLIES

1. Office: Large first aid kit, fire extinguisher, AED
2. Each vehicle is equipped with an individual trauma kit and AED.

Building Evacuation

SITE PERSONNEL GUIDELINES

1. Building evacuation will occur upon instruction by Management personnel. Notification to building site personnel will be made the via radio, telephone and or intercom system.
2. Be aware of all marked exits from your area and building. Know the routes from your work area. Marked exit signs are installed in all buildings.
3. Take note of physically handicapped individuals in your area that may need assistance.

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4. When instructed to evacuate, walk quickly to the nearest marked exit and ask others to do the same.
5. **DON'T:** Run, lag, scream, stop to get personal belongings, smoke, leave any doors open, or return to the building until you are instructed to do so.
6. All personnel should meet at:

SEE PAGE 41 FOR O&M BUILDING EVACUATION MAP

7. If it is safe, remain in this location until roll call has been taken by a Manager. Do not leave premises until accounted for and given permission to do so by Management. Valuable time could be wasted searching for personnel that have not followed correct procedures.
8. Keep fire lanes, hydrants and walkways clear for emergency crews and equipment.
9. During emergency, only personnel authorized by Management will be allowed in the building to perform such responsibilities as shutting down power, potentially hazardous equipment, heat sources, gases, machine and other electrical equipment.
10. Should you become trapped in a building, **DO NOT PANIC:**
 - If a window is available, place an article of clothing outside the window as a marker for rescue crews.
 - If there is no window, tap on the wall and shout at regular intervals to alert emergency crews.

Building Utility Failure

SITE PERSONNEL GUIDELINES

1. In the event of a major utility outage in an Downeast Wind building during working hours, notify a member of Management.
2. If there is potential danger to the building occupants or if the utility failure occurs after hours, on the weekend, or a holiday, notify a member of Management.
3. Do not evacuate a building unless directed to do so by Management, the policy or fire department. Do not return to an evacuated building unless directed to do so by Management personnel.

Electrical / Light Failure

It is advisable to have a flashlight nearby for emergencies.

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Plumbing Failure / Flooding / Water Leak

1. Cease using all electrical equipment.
2. Notify a Manager immediately.
3. Evacuate the immediate area to prevent injuries.

Natural Gas Leak

1. Cease all operations.
2. Notify a Manager immediately.
3. Evacuate the area immediately.

****DO NOT SWITCH LIGHTS ON / OFF OR UNPLUG ANY ELECTRICAL EQUIPMENT—
ELECTRICAL ARCING COULD TRIGGER AN EXPLOSION.****

Ventilation Problems

1. If smoke or odors come from the ventilation system, immediately notify a Manager.
2. If necessary, cease all operations and vacate the area.

****DO NOT RETURN TO AN EVACUATED AREA UNLESS THE “ALL CLEAR” SIGN IS
GIVEN BY A MANAGER.****

Fire

SITE PERSONNEL GUIDELINES

1. Field personnel should notify “O&M” to report the fire emergency. Someone at “base” will notify the Fire department. Office / Warehouse personnel should immediately dial “911” in the event of a fire. However, when in doubt, shout FIRE.
2. Know the location of fire extinguishers, fire exits, and alarm systems in your area and know how to use them. In most cases, do not attempt to extinguish the fire.
3. If a minor fire appears to be controllable, a Manager or a member of the Safety Committee may attempt to extinguish the fire using the fire extinguishers or other sources, such as water from a hose – only after “911” has been called.
4. A complete evacuation of the entire building or area will be performed in any fire emergency. All site personnel should proceed to the nearest exit. Last ones to exit should close doors behind them.
5. Seek out any handicapped personnel in the area and provide assistance when exiting.

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6. Managers or site personnel will assist in the evacuation and will meet the Fire Department to direct them to the proper location. Once the Fire Department has arrived, the responding incident commander will take charge of all rescue operations and suppression activities.
7. Office / Warehouse should meet at:

TBD
8. Keep clear of fire lanes, hydrants, and walkways for emergency crews and vehicles.
9. Personnel should remain at this location until accounted for by Management. Do not leave premises until accounted for and given permission to do so. Valuable time could be wasted searching for personnel who have not followed correct procedures.
10. Only members of Management can declare the state of emergency over and give permission to re-enter.

Should you become trapped in a building during a fire:

- If a window is available, place an article of clothing (shirt, coat, etc.) outside the window for the rescue crews.
- If there is no window, stay near the floor where the air will be less toxic. Shout at regular intervals to alert emergency crews of your location. **DO NOT PANIC.**
- If the door is warm, do not open it. If smoke is entering the room through cracks around the door, stuff something in the cracks to slow the flow.

Turbine Fire

1. Dial 911
2. Notify Facility Manager
3. Verify turbine affected is isolated from the electrical system.
4. Determine fire location—base or nacelle—and **investigate with binoculars 100 feet from the turbine**
5. **Base Fires-** Advise emergency responders of hazards and give them control of the scene
6. **Nacelle Fires-** Establish a sterile zone (approximately 100ft) around the base of the turbine.
7. Keep **all** personnel away from the turbine (including emergency responders)
8. Allow fire debris to fall freely within controlled area.
9. Watch for fire debris to go beyond the controlled area.

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10. Fire Department will manage the fire scene, site personnel will stand by to assist with isolation of additional turbines and electrical equipment if requested by the Fire Department Incident Commander.

Turbine Evacuation

SITE PERSONNEL GUIDELINES

Most turbine repair/maintenance activities are performed by teams of two employees/contractors. In the event dangerous conditions arise during turbine repair/maintenance activities (e.g., fire, thunderstorms other dangerous weather conditions), the affected employees/contractors will take the following steps:

1. Assessment/Immediate Response: The crews working at the turbine site will assess conditions, determine whether they pose an immediate safety threat, and initiate evacuation, if necessary.
2. Notification: use two-way radios, cell phones or other communications devices to inform the Facility Manager or designee of the situation and request guidance. If immediate evacuation is commenced without first consulting the Facility Manager or designee, initiate contact and apprise Facility Manager/designee of the situation once evacuation is completed.
3. Evacuation: Climb down the tower and/or evacuate the area.
4. Follow turbine manufacture emergency evacuation procedure

Assembly Areas: The appropriate assembly point differs depending on the nature of the emergency.

Field personnel should meet at:

TBD

Personnel Accounting: Personnel will contact the Facility Manager/designee and report whether everyone at the location has been accounted for.

Brush Fire

1. Dial 911
2. Notify Facility Manager
3. Advise all site employees of the fire emergency and gather team at the muster location.
4. Work with local responders to address fire encroachment near the facility or turbines

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5. In the event firefighting teams utilize helicopter or fixed wing aircraft near wind farm the Fire Department Incident Commander may request to pause the turbines for safety.
6. Fire Department will manage the fire scene, site personnel will stand by to assist with isolation of additional turbines and electrical equipment if requested by the Fire Department Incident Commander.
7. All safety requests from the Incident Commander shall be followed by the site team.

Earthquake (Office / Warehouse)

GUIDELINES FOR OFFICE / WAREHOUSE / SHOP PERSONNEL

1. Stay in the building. Many injuries occur while people run through the building to the outside. It is possible to be hit by flying objects, falling plaster or other debris.
2. Assist any handicapped persons in the area and find a safe place for them.
3. Drop, cover, and hold. Try to take cover under a table or other sturdy furniture. Kneel, sit, or stay close to the floor. Hold onto furniture legs for balance. Be prepared to move with your cover. Face away from windows.
4. Doorways may not be the safest location for protection. Violent motion could cause doors to slam against your body, crush your fingers, or inflict other serious injuries. More importantly, you could become a target for flying objects.
5. You could kneel, sit, or stay close to the floor, next to a structurally sound interior wall. Place your hands on the floor for balance, as the ground may move violently for several minutes.
6. Try to avoid airborne objects. Move away from overhead fixtures, windows, bookcases, file cabinets, etc.
7. If you are outside, go to a clear area away from buildings, trees, and power lines.
8. Keep calm. Do not move. Wait for emergency instructions from Management.

IMMEDIATELY AFTER THE EARTHQUAKE

1. Be prepared for aftershocks. Although usually less intense than the main quake, they can cause further structural damage.
2. Gas leaks might be present. Do not use lanterns, torches, lighted cigarettes, or open flames.
3. Open windows, if possible, to ventilate the building. Watch out for broken glass.
4. If fire is caused by the earthquake, implement the fire procedures.

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5. If evacuation is ordered:
 - Evacuate as instructed.
 - Provide assistance to any handicapped personnel.
 - Beware of falling debris and electrical wires as you exit.
 - Personnel should meet at:

TBD

6. If it is safe, remain in this location until accounted for by Management or Communications personnel. Do not leave premises until accounted for and given permission to do so. Valuable time could be wasted searching for personnel that have not followed correct procedures.
7. Keep fire lanes, hydrants, and walkways clear for emergency crews and equipment.
8. Only members of Management can declare the state of emergency over and give permission to re-enter.

Should you become trapped in building, DO NOT PANIC.

- If window is available, place an article of clothing outside the window as a marker for rescue crews.
- If there is no window, tap on the wall and shout at regular intervals to alert emergency crews.

LOCATION OF FIRST AID SUPPLIES

Shop and within our work trucks

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**Earthquake (Field) Guidelines for Field Site Personnel
DURING AN EARTHQUAKE**

1. Move to an open area away from turbine towers, power lines, and poles.
2. Get low to the ground and balance yourself. The ground may move violently for several minutes.
3. If there is no open area, seek available shelter (such as your vehicle) to avoid falling objects. Stay in your vehicle if electrical wires fall on it. Wait for professional help – wires may still be live, and you could be electrocuted if you stepped outside.

IMMEDIATELY AFTER THE EARTHQUAKE

1. Be prepared for aftershocks. Although usually less intense than the main quake, they can cause further damage.
2. Use any communication means necessary to notify your supervisor of your status and position.
3. If you feel safe in doing so, attempt to evacuate to your safe shelter location.

MAIN ENTRANCE OF WIND FARM

SEE PAGE 42 FOR SITE MAP

4. Remain at your designated safe shelter location until you have answered to a roll call by a Manager. Do not leave the premises until accounted for and given permission to do by a Manager. Valuable time could be wasted searching for personnel that have not followed correct procedures.
5. You may be directed to return to the Downeast Wind office location. This does not give you permission to go elsewhere.
6. Only members of Management can declare the state of emergency over and give permission to leave the designated rendezvous location or the Downeast Wind shelter area.

LOCATION OF FIRST AID SUPPLIES

Service trucks

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Adverse Weather

SITE PERSONNEL GUIDELINES

A serious weather “watch” indicates that conditions for bad weather exist. During a “watch” status, maintain a normal routine. Management will monitor available information report. A “warning” is more serious. The following is a list of emergency situations, definitions of these conditions, and general emergency instructions which should be followed:

Severe Thunderstorms

Winds exceeding 55 miles per hour and heavy lightning and thunder. Lightning is the greatest danger during a severe thunderstorm.

Special Precautions

1. Remain indoors.
2. Stay away from open doors, windows, metal pipes, or electrical appliances.
3. Prepare for flash flooding and low water crossings.
4. Follow Management instructions.

Working in Adverse Weather: Lightning

In addition to the General Safety Policy and General Safety Rules of the IIPP, the following shall apply:

1. Morning safety meetings shall cover forecasted weather conditions for the day.
2. Lightning warnings shall reflect a fifty (50) mile radius as an initial advisement to technicians that a storm is in the area, and a thirty (30) mile radius will indicate an immediate weather stand down. Technicians will be required to immediately stop working and head to their vehicles until the storm passes.
3. Stand down directions will be clear. The message “STOP WORK- weather stand down is in effect” shall be communicated when a storm reaches a thirty (30) mile radius from the turbine.
4. Site supervision will confirm all employees are accounted for and down tower. At that time, they will be directed to return to the shop or stay in the field until the lightning passes.
5. Lines of communications shall include radios as a primary source.

This policy effects all locations and the procedures are consistent throughout each wind farm.

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The seemingly random nature of thunderstorms cannot guarantee the individual or group absolute protection from lightning strikes, however, being aware of, and following lightning safety guidelines can greatly reduce the risk of injury or death

General Information

During late spring to the summer months, in certain parts of the country, thunderstorms are common. Because of this, all service technicians who work in these areas need to be aware of the possible lightning conditions that may occur on our wind turbine projects during these thunderstorms. Before, during, and after thunderstorms all affected site personnel need to be aware of what to do and where to report.

Safer Locations During Thunderstorms and Locations to Avoid

No place is absolutely safe from the lightning threat; however, some places are safer than others. Large enclosed structures (substantially constructed buildings) tend to be much safer than smaller or open structures. The risk of lightning injury depends on whether the structure incorporates lightning protection, construction materials used, and the size of the structure. Avoid contact with metal or conducting surfaces outside or inside the vehicle.

Generally speaking, if an individual can see lightning and/or hear thunder he/she is already at risk. Louder or more frequent thunder indicates that lightning activity is approaching and increasing. If the time delay between seeing the flash (lightning) and hearing the bang (thunder) is less than 30 seconds, the individual should be in or seek a safer location. Be aware that this method of ranging has severe limitations in part due to the difficulty of associating the proper thunder to the corresponding flash.

High winds, rainfall, and cloud cover often act as precursors, to actual cloud-to-ground strikes by notifying individuals to take action. Many lightning casualties occur in the beginning, as the storm approaches, because people ignore the precursors. Also, many lightning casualties occur after the perceived threat has passed. Generally, the lightning threat diminishes with time after the last sound of thunder, but may persist for more than 30 minutes. When thunderstorms are in the area but not overhead, the lightning can exist even when it is sunny, not raining, or when clear sky is visible.

When available, pay attention to weather warning devices such as weather radio and/or credible lightning detection systems. However, do not let this information override good common sense as isolated storms are common.

Lightning Safety

Avoid being in or near:

Wind turbine and communications towers, other high places, open fields, isolated trees, light poles, metal fences, and open water (ocean, lakes, rivers, etc.). After the storm has passed, all site personnel shall wait at least one (1) hour before approaching any equipment. If you hear a hissing or crackling sound, this may be a sign of the wind turbine holding a charge. If these sounds are present, DO NOT TOUCH THE MACHINE.

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When inside a building avoid use of the telephone, washing your hands, or any contact with conductive surfaces with exposure to the outside such as metal door or window frames, electrical wiring, telephone wiring, cable TV wiring, plumbing, etc.

When in vehicles during lightning you must not be touching any metallic objects referenced to the outside of the car. Door and window handles, radio dials, CB microphones, gearshifts, steering wheels, and other inside-to-outside metal objects should be left alone during close-in lightning events. If you are driving and get caught in a lightning storm, pull off to the side of the road in a safe manner (in a low area, not on a hill), turn on the emergency blinkers, turn off the engine, put your hands in your lap, and wait out the storm.


Heavy equipment like boom trucks, cranes, backhoes, bulldozers, loaders, graders, scrapers, mowers, etc. which employ an enclosed rollover systems canopy (ROPS) are safe in nearby electrical storms. The operator should shut down the equipment, close the doors, and sit with hands in lap, waiting out the storm. In no circumstances, during close-in lightning, should the operator attempt to step off the equipment to ground in an attempt to find another shelter. If operating a boom truck or crane, make sure to retract the boom and place in the boom rack.

****NOTE: EMERGENCY WORK CAN BE CONDUCTED IN THE SUBSTATION. ONLY QUALIFIED AND TRAINED PERSONNEL WILL BE ABLE TO CONDUCT WORK. A JSEA MUST BE COMPLETED AND RISK ASSESSMENT SHOULD REFLECT THE WEATHER AND ITS HAZARDS****

First Aid Recommendations for Lightning Victims

Most lightning victims can actually survive their encounter with lightning, especially with timely medical treatment. Individuals struck by lightning do not carry a charge and it is safe to touch them to render medical treatment. Follow these steps to try to save the life of a lightning victim:

1. **First:** Call 911 to provide directions and information about the likely number of victims.
2. **Response:** The priority of emergency care is “make no more casualties.” If the area where the victim is located is in a high-risk area (mountain top, isolated wind turbine, open field, etc.) with a continuing thunderstorm, the rescuers may be placing themselves in significant danger.
3. **Evacuation:** It is relatively unusual for victims who survive a lightning strike to have major fractures that would cause paralysis or major bleeding complications unless they have suffered a fall or been thrown a distance. As a result, in an active thunderstorm, the rescuer needs to choose whether evacuation from very high-risk areas to an area of lesser risk is warranted and should not be afraid to move the victim rapidly if necessary. Rescuers are cautioned to minimize their exposure to lightning as much as possible.
4. **Resuscitation:** If the victim is not breathing, start mouth-to-mouth resuscitation. If it is decided to move the victim, give a few quick breaths prior to moving them. Determine if the victim has a pulse by checking the pulse at the carotid artery (side of the neck) or femoral artery (groin) for at least 20 – 30 seconds. If no pulse is detected, start cardiac

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compressions as well. In situations that are cold and wet, putting a protective layer between the victim and the ground may decrease the hypothermia that the victim suffers which can further complicate the resuscitation.

Location

TBD

Facility Manager:

Designated Muster Point: O&M Building conference room S

SEE PAGE 41 FOR MAPS

Backup Designated Muster Point: O&M parking lot near entrance sign

Note: The persons named above shall be trained in the procedures to follow and have full authority to perform said duties. Training shall be performed annually or when the plan changes. A copy of this plan shall be available to all site personnel. The location manager shall maintain the master copy of this plan and forward a copy to the corporate Safety Officer. A map of any evacuation routes shall be posted and kept up to date by the plan supervisor.

Flooding

Concerns of the Office / Warehouse

1. Top off any underground tanks. Make tank access caps water tight, plug vents, and seal off pumping lines.
2. Plug all floor drains and sanitary lines.
3. If possible, disconnect electric motors and store in dry place.
4. Move chemicals to a high shelf.
5. If possible, put merchandise on pallets.
6. Shut off main power and valves.

Concerns of the Field

1. Down power lines.
2. De-energize substation.
3. Open KPF's.
4. Transformers down, exposing primary/secondary lines.
5. Cracks in dikes, exposing primary/secondary lines.
6. Control panels down, exposing secondary lines.
7. Towers over, exposing secondary lines.

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Working in Adverse Weather: Tornadoes

General

In addition to the General Safety Policy and General Safety Rules of the IIPP, the following shall apply: This policy effects all locations that see annual weather situations. Although we have several types of wind turbines in these areas, the procedures are the same.

Definitions

Tornado Watch: A tornado watch means that conditions are favorable for tornados to develop.

Tornado Warning: A tornado warning means that either official spotters have sighted a tornado or Doppler Radar has reported a developing tornado. A tornado warning is typically issued for a small area (possibly a county or two) for less than an hour.

Fujita–Pearson Tornado Scale:

1. F-0: 40–72 mph, chimney damage, tree branches broken
2. F-1: 73–112 mph, mobile homes pushed off foundation or overturned
3. F-2: 113–157 mph, considerable damage, mobile homes demolished, trees uprooted
4. F-3: 158–205 mph, roofs and walls torn down, trains overturned, cars thrown
5. F-4: 207–260 mph, well-constructed walls leveled
6. F-5: 261–318 mph, homes lifted off foundation and carried considerable distances, autos thrown as far as 100 meters

General Information

During late spring to the summer months in certain parts of the country, tornados are commons. Because of this, all service technicians who work in these areas need to be aware of the possible tornado conditions that may occur on our wind turbine projects.

When a tornado is coming, you have only a short amount of time to make life-or-death decisions. Planning and quick response are the keys to surviving a tornado. Therefore, it is so important to conduct tornado drills before and during each tornado season.

1. When a tornado watch is issued in your area, stay tuned to a weather radio, commercial radio, and/or television to stay informed of changing weather conditions. Remain alert for approaching storms and remember that tornados can occur with little to no warning. Be prepared to take cover on short notice.
2. When a tornado warning is issued, local EMS will take, as a minimum, the following precautions to alert the public:
 - Sound local sirens (know what is the sequence in your area)
 - Activate the Emergency Alert System (EAS) to interrupt radio and television broadcasts to provide instructions and information to the public

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Tornado Safety

Tornado danger signs (learn and know these tornado danger signs):

1. An approaching cloud of debris can mark the location of a tornado even if a funnel is not visible.
2. Before a tornado hits, the wind may die down and the air may become very still.
3. Tornadoes generally occur near the trailing edge of a thunderstorm. It is not uncommon to see clear, sunlit skies behind a tornado.

Take the following protective actions when a tornado watch has been issued in your area:

1. Have a person designated to monitor a radio or television
2. Notify all affected site personnel of the tornado watch and assure that they are in immediate contact if an emergency arises.
3. If the weather is extreme, remove all site personnel from the field and prepare for the safety of all site personnel.

Take the following protective actions when a tornado warning has been issued in your area:

1. Seek sturdy shelter in a basement or other predestinated “tornado shelter” (not a mobile home, car, or trailer)
2. Go at once to a windowless, interior room; storm cellar; basement; or lowest level of the building.
3. If there is no basement, go to an inner hallway or a small inner room without windows, such as a bathroom or closet.
4. Stay away from windows, doors, and outside walls (most deaths occur from flying debris)

If outdoors:

1. If possible, get inside a building.
2. If shelter is not available or there is no time to get indoors, lie in a ditch or a low-lying area or crouch near a strong building. Be aware of the potential for flooding.
3. Use arms to protect head and neck.

If in a car:

1. Never try to out drive a tornado in a car or truck. Tornadoes can change direction quickly and can lift a car or truck and toss it through the air.
2. Get out of the car immediately and take shelter in a nearby building.
3. If there is no time to get indoors, get out of the car and lie in a ditch or low-lying area away from the vehicle. Be aware of the potential for flooding.

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After a tornado, be aware of your surroundings. Also:

1. Turn on radio or television to get the latest emergency information
2. Use the telephone only for emergency calls.
3. Watch for downed power and telephone lines (do not use the phone unless calling 911)
4. Around the projects watch for falling debris, exposed power lines, and chemical spills.
5. Give first aid when appropriate. Don't try to move the seriously injured unless they are in immediate danger of further injury.
6. Stay out of damaged buildings. Return only when authorities say it is safe.
7. Clean up spilled medicines, bleaches, gasoline, or other flammable liquids immediately. Leave the buildings if you smell gas or chemical fumes.

Location

Downeast Wind -TBD

Facility Manager:

Designated Muster Point: TBD

Backup Designated Muster Point: O&M parking lot near entrance sign

Note: The persons named above shall be trained in the procedures to follow and have full authority to perform said duties. Training shall be performed annually or when the plan changes. A copy of this plan shall be available to all site personnel. The location manager shall maintain the master copy of this plan and forward a copy to the corporate Safety Officer. A map of any evacuation routes shall be posted and kept up to date by the plan supervisor.

Cold Weather Safety

The purpose of this Safety Document is to provide the site personnel with the basic knowledge needed to work safely in conditions where the possibility of cold exists. At the end of this period of instruction the site personnel should:

- Be able to identify the conditions and circumstances that can lead to cold injury.
- Know the signs of cold injury.
- Explain the first aid treatment for cold injury.

The Cold Environment

The human body can experience a loss of functionality, damage, or death from the cold environment. Temperature is not the only factor resulting in cold injury. Immersion and wind speed can also contribute to the severity of cold injuries.

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Immersion can cause a significant and rapid loss of body heat. In water temperatures that are well above freezing, a person can quickly become immobilized and drown.

Immersion Survival Times

| Water Temperature Degrees Fahrenheit | 30 | 40 | 50 | 60 | 70 |
|--------------------------------------|--------|--------|--------|--------------|------|
| Time for 50% Deaths | 15 min | 20 min | 50 min | 2 hrs. | Safe |
| Time for 100% Deaths | 1 hr. | 2 hrs. | 4 hrs. | Some survive | Safe |

In water temperatures as high as 60 degrees there is danger of people being overcome by the cold. Wind turbine sites are often located where there are lakes, rivers, creeks, or ponds. These are also areas where roads may become unstable. There is some chance of crashing into the water. Heavy rain can have the same effect as immersion. In the event a person should experience immersion the first step is to remove them from the cold, the second is to get them dry. As the need arises, use clothing to protect from getting wet.

Wind Chill

Just as exposure to wet and cold can rob heat faster than just temperature alone, so can strong winds. Strong winds enhance the effects of low temperatures. This chart shows combinations of wind and temperature that can lead to cold injuries. In areas where these conditions exist, care should be taken to cover all exposed flesh or stay out of the weather.

| Wind Speed (MPH) | Perceived Temperature | | | | | | | | | | | |
|------------------|-----------------------|----|----|-----|-----|-----|-----|-----|------|------|------|------|
| | 50 | 40 | 30 | 20 | 10 | 0 | -10 | -20 | -30 | -40 | -50 | -60 |
| Calm | 50 | 40 | 30 | 20 | 10 | 0 | -10 | -20 | -30 | -40 | -50 | -60 |
| 5 | 48 | 37 | 27 | 16 | 6 | -5 | -15 | -26 | -36 | -47 | -57 | -68 |
| 10 | 40 | 28 | 16 | 4 | -9 | -21 | -33 | -46 | -58 | -70 | -83 | -95 |
| 15 | 36 | 22 | 9 | -5 | -18 | -36 | -45 | -58 | -72 | -85 | -99 | -112 |
| 20 | 32 | 18 | 4 | -10 | -25 | -39 | -53 | -67 | -82 | -96 | -110 | -121 |
| 25 | 30 | 16 | 0 | -15 | -29 | -44 | -59 | -74 | -88 | -104 | -118 | -133 |
| 30 | 28 | 13 | -2 | -18 | -33 | -48 | -63 | -79 | -94 | -109 | -125 | -140 |
| 35 | 27 | 11 | -4 | -20 | -35 | -49 | -67 | -82 | -98 | -113 | -129 | -145 |
| 40 | 26 | 10 | -6 | -21 | -37 | -53 | -69 | -85 | -100 | -116 | -132 | -148 |

Little Danger if Properly Clothed ■
 Danger of Freezing Exposed Flesh ■
 Great Danger of Freezing Exposed Flesh ■

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Cold Injuries

Hypothermia

The medical term for a drop in core body temperature is Hypothermia. As temperatures drop the human body adapts various strategies to keep the core temperatures at 98.6 degree Fahrenheit. “Goose bumps” and shivering are the first signs of a drop in body temperature. The body may restrict flow of blood to the extremities making them more susceptible to freezing. As the extremities get colder there is loss of coordination. As a person gets colder they become apathetic and lose gross motor functions. At some point shivering will cease. The skin will be cold and waxy, muscles will be rigid, and the heart rate slows. As the core temperature drops, the pupils dilate and the person will go into a coma. At a core body temperature below 86 degree Fahrenheit, there is a chance of cardiac arrest.

Local Cold Injury

Local cold injury is commonly called “frost bite”. Frost bite occurs when body tissue gets cold enough to freeze. It is most likely to affect the tips of the fingers, toes, ears, nose, cheek bones, and chin. While when first exposed to cold a body part will burn and sting, eventually as exposure time lengthens, there will be a loss of sensation. The skin may turn waxy grey or yellow. If the condition is allowed to continue, the tissue will freeze and cause permanent tissue damage.

Treatment

Prevention is always preferable to treatment. Heat is lost through the body by several means, not the least of which is radiation. It is important to cover all exposed areas of the body. Hands and head are often neglected when dressing for the cold environment. Head coverings should cover as much of the head, neck, and face as possible. Gloves should be insulated as should footwear. Clothes should be loose and layered. Clothing may need to be shed and donned several times during a work day. As one works, the clothes might need to be removed to keep from overheating. The clothes will need to be put on again during periods of inactivity.

Hypothermia

For mild hypothermia treatment, keep the person dry. Use blankets, sleeping bags, etc. to cover exposed areas. For sever hypothermia apply warm packs to arm pits, groin, neck and head areas. If the person is in advanced hypothermia (confused, no shivering), handle them gently and do not allow them to exert themselves. Do not warm the legs or arms. Heat applied to the arms and legs forces cold blood back towards the heart, lungs, and brain, causing the core body temperature to drop. Which can be fatal. Immediately seek medical attention.

Local Cold Injury

In the event one suspects a local cold injury, remove the person from the cold. Never try to thaw any tissue if there is a possibility of it refreezing. Carefully remove any jewelry, wet or restrictive clothing. Leave the clothing if it frozen to the skin. Cover the skin with loose clothing or bandage to prevent friction or pressure. Never rub or massage the affected. If the area is hard and frozen, do not attempt to re- warm it by applying heat. Seek medical attention.

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Hazardous Material
SITE PERSONNEL GUIDELINES

Safety Data Sheets (SDS's) are kept on premises on all chemicals we use.

These data sheets are located in: **O&M Warehouse**

For spills, leaks, and incidents when a fire is not involved, the following steps should be taken, if appropriate:

1. Do not make contact with the chemical. Evacuate all personnel in the area immediately. Seal off the area if possible to prevent further contamination of others until someone from Management arrives.
2. Seek out any handicapped personnel in the area and provide assistance when exiting.
3. Report the incident immediately to anyone in Management.
 - Type of incident. Are there any injuries?
 - Name and quantity of the material, if known.
 - Possible hazards to persons or the environment, if known.
 - Be sure to state if you feel that the spill or its vapors may cause an immediate threat to human life so that evacuation procedures may be implemented.
4. Anyone who is contaminated by the spill should avoid contact with others as much as possible. Washing-off contamination and first aid should be started immediately.
5. Do not try to contain or clean up spills. This will be conducted by someone designated by Management.
6. If it is safe, remain in this location until accounted for by roll call by Management. Do not leave premises until accounted for and given permission to do so. Valuable time could be wasted searching for personnel that have not followed correct procedures.
7. Keep fire lanes, hydrants, and walkways clear for emergency crews and equipment.
8. Only members of Management can declare the state of emergency over and give permission to re-enter.

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Catastrophic Turbine Failure

SITE PERSONNEL GUIDELINES

- In the event of catastrophic turbine failure (blade failure, tower collapse) do the following:
- Call Facility Manager
- Stay away from the danger area
- Set up sterile zone and do not allow vehicles to park within fall down distance of any standing component
- Direct all media inquiries to the Facility Manager

Crime / Violent Behavior / Civil Disturbance

SITE PERSONNEL GUIDELINES

How to Report

You may contact any Manager or call “911” yourself to access the police department.

Reporting Crimes in Progress

If you are a victim or a witness to any in-progress criminal offense, report the incident as soon as possible, providing the following information:

1. Nature of the incident. MAKE SURE that the 911 dispatcher understands that the incident is IN PROGRESS!
2. Location of the incident.
3. A description of the suspect(s) involved.
4. A description of any weapons involved.
5. A description of any property involved.


Stay on the line with the dispatcher until a police officer arrives at the scene. Keep the dispatcher informed of any changes in the situation so that updated information can be relayed to the responding units. Even if you are the victim and unable to communicate further, try to keep the line open.

Reporting Crimes Not in Progress

Even though it seems futile, all crime should be reported.

Be prepared to provide the following information to the investigating officer:

1. When the incident occurred.

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2. If a property crime, what was taken or damaged.
3. The named and/or descriptions of any suspects or witnesses.

Civil Disturbance Response Plan

Any site personnel noting a possible civil disturbance should contact a Manager immediately. If necessary, all entrances and exits will be secured. Should unauthorized intruders gain access onto premises, refrain from any contact with the intruders. All site personnel should remain in the area, remain calm, and follow instructions from Management. Should intruders gain access into the building and damage property, site personnel should not interfere. The personal safety of our personnel is more important than the protection of our property.

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Bomb Threat

SITE PERSONNEL GUIDELINES

All bomb threats must be treated as a serious matter and must be considered real until proven otherwise. The procedures described below should be implemented regardless of whether the bomb threat appears to be real or not.

Bomb Threats Through Mail or Suspicious Packages

1. Do not handle the envelope or package. Clear the area and call “911”. In addition, contact any manager.
2. The building will not be evacuated until Management personnel or local authorities have given orders to do so.

Bomb Threats Over the Phone

1. Keep the caller on the line as long as possible and try to obtain the following information:
 - When is the bomb going to explode?
 - Where is the bomb located?
 - What kind of bomb is it?
 - What does it look like?
 - Why did you place the bomb?
2. Also, try to record the following information:
 - Time of call
 - Age and sex of caller
 - Speech pattern, accent, possibly nationality, etc.
 - Emotional state of caller
 - Background noise
3. Immediately notify your supervisor or a Manager. Await further instructions. The building will not be evacuated until Management personnel or local authorities have given orders to do so.

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Hurricane Procedure

1. Hurricane Procedure Policy

This plan is for all personnel working at the Downeast Wind Farm.

It is our policy that safety of site personnel is the primary concern. Downeast Wind will activate this procedure well before a hurricane reaches the project to assure the safety of site personnel.

2. Notification

In the event of an approaching Hurricane the following people must be notified;

Apex Safety Manager: Office Ph#:

Regional Operations Manager: Cell Ph#:

VP of Operations and Maintenance: Cell Ph#:

Apex ROCC: Office#

3. Hurricane Procedure

48 HOURS FROM LANDFALL: About two days before a hurricane is expected to affect your location, begin implementing the following actions.

- Review the hurricane emergency action plan with all involved personnel.
- Check building roofs. Make repairs to coverings and flashing as time allows.
- Remove all loose items from the roof, secure equipment doors and covers, and remove debris.
- Verify roof drains are clear of trash and other obstructions.
- Fill fuel tanks serving emergency generators and other vital services.
- Verify dewatering pumps are in service and working.
- Verify outside storm drains and catch basins are clean.
- Remove debris from outdoor areas that may become “missiles.”
- Remove loose, outdoor, inactive equipment.
- Back up computer data.

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36 HOURS FROM LANDFALL: At 36 hours before anticipated landfall, time will be limited. Make sure you will have the staff needed to complete all of the following actions, and leave plenty of time to evacuate personnel.

- Protecting or relocating vital business records
- Removing all loose outdoor storage or equipment
- Anchoring portable buildings or trailers to the ground
- Securing outdoor storage or equipment that cannot be moved
- Installing manual protection systems (e.g. shutters, plywood covers and flood gates)
- Raising critical equipment off floors
- Moving critical equipment from basement and other below-ground areas
- Covering critical stock and equipment with waterproof tarpaulins
- Turning off fuel gas services
- Turning off non-essential electrical systems
- Verifying all fire protection systems are in service (e.g. water supplies, fire pumps, sprinklers, fire alarms and special extinguishing systems)
- Setting up flood barriers at all first-floor doors and entrances
- Temporarily closing buildings under construction to avoid entry of wind-driven rain

24–32 HOURS BEFORE LANDFALL: ALL PERSONNEL SHALL EVACUATE THE SITE

DURING THE HURRICANE- Personnel shall remain off site. ROCC will operate the site remotely.

AFTER THE HURRICANE- Apex Facility Management will return to the site to conduct a safety assessment of the O&M building, warehouse, substation, and other critical components. When returning to the site, bring additional supplies and cameras to document conditions.

AFTER THE HURRICANE HAZARD ASSESSMENT- If the site is deemed safe to return by the Apex Facility Manager, an ALL CLEAR will be issued and communicated to awaiting site personnel. Site personnel may return to the site once an ALL CLEAR is issued.

- Survey the site for hazards: Live electrical wires, broken glass and sharp metal, leaking fuel gases or flammable liquids, damaged building features or contents that could shift or collapse, Paved or hardscape areas undermined by wave action and subject to collapse, Flammable atmosphere in vapor space of flammable storage tanks, etc.

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- Verify the status of protection systems. Check water supplies, fire pumps, automatic sprinklers, fire alarms and security systems.
- Manage impairment for protection systems: or Expedite repairs, Post fire watch in area with impaired fire protection, Post security personnel in areas where building or site access is not suitably controlled.
- Survey the damage and initiate repairs immediately: Promptly notify contractors to avoid waiting in line for service.
- Perform site wide inspection to determine if Turbine start up can be initiated.
- After confirmation site restoration can be established use SCADA to remote start turbines.
- Coordinate with site team to troubleshoot and repair turbines that were faulted and could not be restarted.

Establish repair priorities, including the building envelope, utilities and fire protection systems.

Document all damage by photograph for potential insurance claims. Work with Asset Manager to determine if Met Tower Data Logger download is required.

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Operational Equipment Safety Protocols

Hurricanes

- Follow Hurricane Procedure
- Remote Operations Control Center (ROCC) to operate the site
- Conduct post hurricane inspection by management
- Report findings
- Return site to normal operations

Site Fire/ Turbine Fire

- Site management will control access to site to ensure the safety of all personnel and equipment
- Determine if de-energization is required
- Maintain communications with ROCC
- Conduct post fire inspection
- Return site to normal operations

Tornadoes

- Follow tornado procedure
- Remote Operations Control Center (ROCC) to operate the site
- Conduct post hurricane inspection by management
- Report findings
- Return site to normal operations

Substation Failure

- Site management will control access to site to ensure the safety of all personnel and equipment
- Determine if de-energization is required
- Maintain communications with ROCC
- Return site to normal operations

| | | |
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Adverse Weather Conditions

Icing

- Follow turbine manufactures icing procedure
- Determine whether work will stop or resume
- Conduct site assessment
- Determine if equipment can continue normal operations

High Winds

- SCADA will monitor
- 25mps will place turbine into pause (reference turbine manufacture wind speed specs)
- ROCC will monitor

Snow

- Conduct site assessment
- Determine if equipment can continue normal operations

High Ambient—*Per the generator resource summer preparation checklist*


- Review previous event issues and lesson learned applied
- Determine if coolant equipment is functional at the turbines Determine if coolant equipment is functional at the substation
- Determine if all transformer oil levels have checked and refilled as necessary
- Ensure that back-up generators have been tested for functionality (if applicable)

Low Ambient—*Per the generator resource winter preparation checklist*

- Review previous events issues and lessons learned applied
- Determine if equipment or exposed components need additional insulation
- Ensure all heaters in proper working order
- Determine if all cooling equipment has been disabled
- Determine if all transformer oil levels have checked and refilled as necessary
- Ensure that allback-up generators have been tested for functionality (if applicable)

Communications Loss

- Site management to remain on site and maintain turbine and substation control through communication reestablished
- Maintain communication with ROCC
- Report findings and repair communication issue

| | | |
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Pandemics

Pandemic Definition: An epidemic of infectious disease that is spreading through human populations across a large region

Examples Include: Small Pox, HIV, H1N1 Flu, Measles, SARS Coronavirus

Pandemics are declared when three conditions are met: 1) Emergence of an infectious disease to a new population, 2) the disease infects humans causing serious illness, 3) The disease is easily spread among humans

Pandemics may cause a serious reduction in workforce.

Preventative measures: washing hands, covering your mouth when sneezing, staying home from work to minimize further exposure

Pandemic Notification:

Health and Safety Manager: Office Ph#:

Regional Operations Manager: Cell Ph#: Report:

Exposure type:

- Coronavirus
- Influenza
- Measles
- Other

Contamination area:


- Isolate area
- Third party bio-hazard clean up

Worker exposure:

- Number of personnel
- Reduction in workforce
- Are there adequate available workers to ensure continued safety operations

Significant Impact to the operations:

- **Operations will be relinquished to Apex Clean Energy's Remote Operations Control Center. The site will be operated remotely until the all clear is given.**

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Water Shortage or Water Compromise

Extended water compromise or shortage more than 48 hours:

Site operations will be relinquished to Remote Operations Control Center. The site will be operated remotely until potable water is reestablished for site personnel.

Notification:

Health and Safety Manager:

Regional Operations Manager:

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| | Approved by: COO | |
| | Document ID: | |

Apex Incident Report Form OHS-011

| | | | |
|--|--|---|-------------------------|
| <input type="checkbox"/> Injury Incident | | <input type="checkbox"/> Hazard Identification | |
| <input type="checkbox"/> Near Miss | | <input type="checkbox"/> Environmental | |
| Injury Potential (Check One): <input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High | | | |
| Report Version: <input type="checkbox"/> Draft <input type="checkbox"/> Final | | | |
| Location / Department ID: | | | |
| Location of Incident: | | | |
| Contact Name(s) | | Phone Number(s) | Date of Incident |
| | | | |
| Briefly Describe the Incident or Hazard | | | |
| | | | |
| Document Used: <input type="checkbox"/> JSA <input type="checkbox"/> LOTO Procedure Work Procedure Doc ID: _____ | | | |
| Potential EHS Hazards, Injuries, Damage | | Existing Control Measures | |
| | | | |
| Root Cause: | | | |
| | | | |
| Personnel Contacted: | | | |
| Safety Manager _____ | | Line | |
| Manager _____ | | Other _____ | |



Downeast Wind EAP

Prepared By: Director, Health & Safety

Approved by: COO

Document ID:

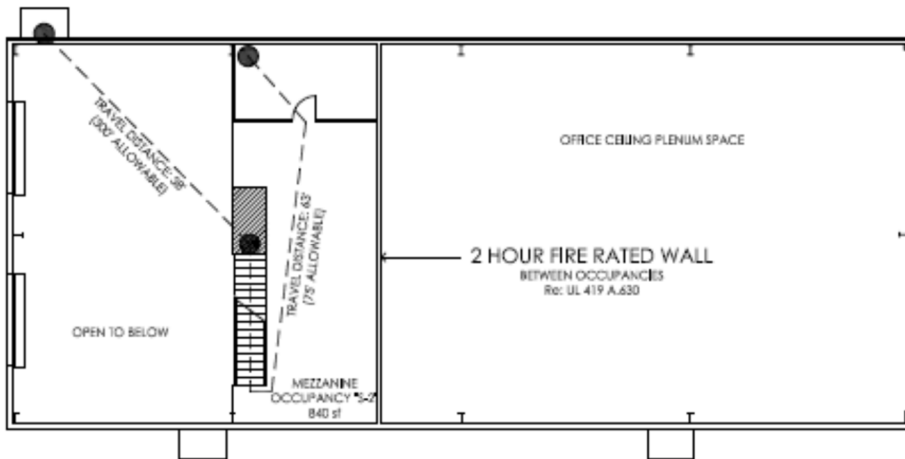
Version: 2.0

Effective Date:

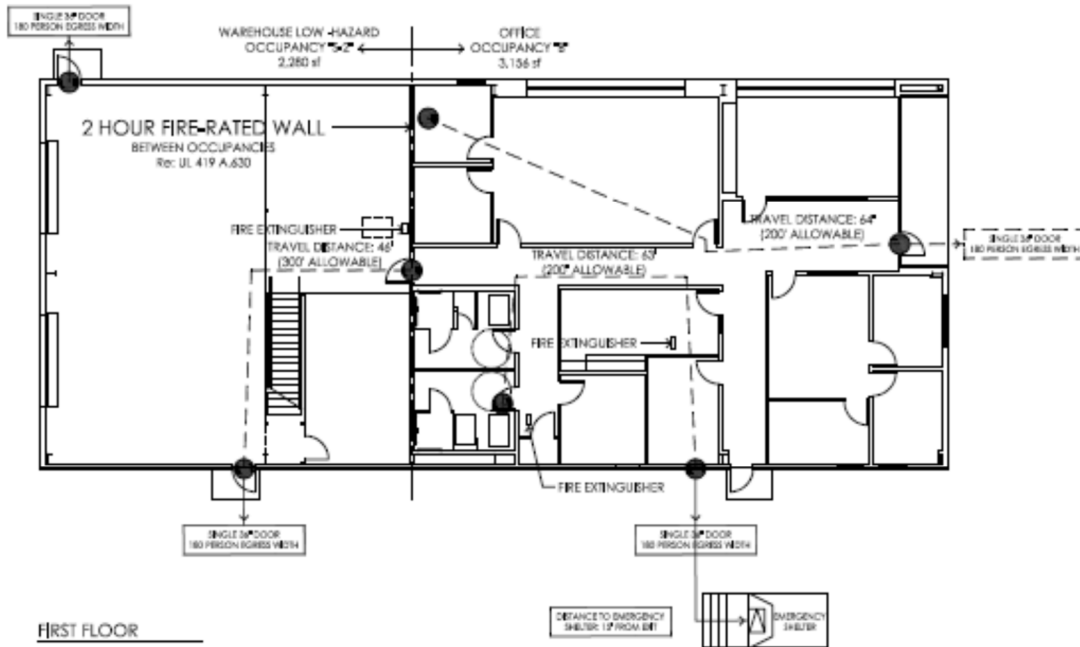
Maps

O&M Building Evacuation Map

Project O&M facility is proposed for a lot at 192 US Hwy 1, Columbia, Maine 04623



MEZZANINE PLAN



FIRST FLOOR



Downtown Wind EAP

Prepared By: Director, Health & Safety

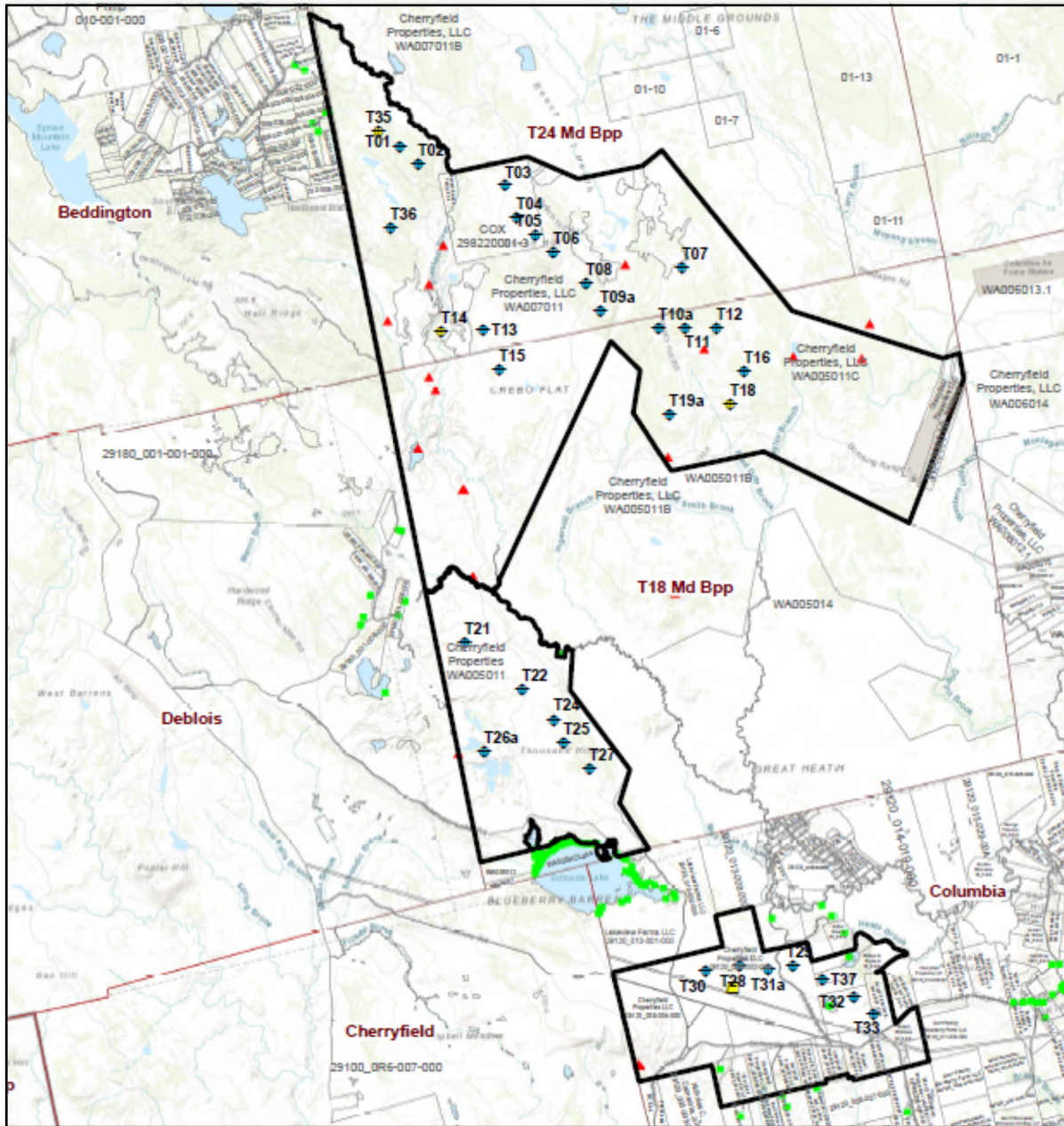
Approved by: COO

Document ID:

Version: 2.0

Effective Date:


Site Map



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| | Approved by: COO | |
| | Document ID: | |

Turbine Coordinates

| Turbine ID | Easting (m) | Northing (m) |
|-------------------|--------------------|---------------------|
| T01 | 584449.000000 | 4962824.000000 |
| T02 | 584774.093632 | 4962497.312766 |
| T03 | 586314.423200 | 4962117.904000 |
| T04 | 586514.807684 | 4961560.527613 |
| T05 | 586846.936921 | 4961239.979829 |
| T06 | 587163.894544 | 4960931.511563 |
| T07 | 589446.769800 | 4960668.030000 |
| T08 | 587741.973712 | 4960386.972325 |
| T09a | 588004.450000 | 4959914.750000 |
| T10a | 589032.100000 | 4959603.070000 |
| T11 | 589498.908660 | 4959610.260363 |
| T12 | 590059.675825 | 4959597.436801 |
| T13 | 585927.805714 | 4959564.675809 |
| T15 | 586209.000000 | 4958864.000000 |
| T16 | 590547.915423 | 4958832.316871 |
| T19a | 589228.220000 | 4958088.280000 |
| T21 | 585601.318745 | 4954044.125166 |
| T22 | 586612.731142 | 4953206.925271 |
| T24 | 587176.719339 | 4952683.782453 |
| T25 | 587349.087646 | 4952280.585551 |
| T26a | 585943.378869 | 4952107.423020 |
| T27 | 587810.229368 | 4951826.500787 |
| T28 | 590466.858685 | 4948334.578395 |
| T29 | 591411.796917 | 4948322.407588 |
| T30 | 589870.394721 | 4948239.360367 |
| T31a | 590972.351586 | 4948256.797708 |
| T32 | 592488.157405 | 4947769.254476 |
| T33 | 592837.001525 | 4947490.190946 |
| T36 | 584289.000000 | 4961384.000000 |
| T37 | 591932.576300 | 4948096.193000 |
| T35 (spare) | 584072.000000 | 4963072.000000 |
| T18 (spare) | 590299.172200 | 4958252.926000 |
| T14 (spare) | 585183.000000 | 4959549.000000 |

| | | |
|---|---|--|
|  | <p style="text-align: center;">Downeast Wind EAP</p> <p>Prepared By: Director, Health & Safety</p> <p>Approved by: COO</p> <p>Document ID:</p> | <p>Version: 2.0</p> <p>Effective Date:</p> |
|---|---|--|

Emergency Action Plan Receipt

PLEASE SIGN BELOW AND RETURN THIS PAGE TO THE PLANT MANAGER.

Downeast Wind (APEX CLEAN ENERGY) recognizes that its site personnel have the right and need to know the procedures to follow in the event of an emergency. With this policy, DOWNEAST WIND intends to ensure the transmission of necessary information to site personnel regarding emergency action.

| | |
|---|--------------------------------|
| <p>I have received a copy of the APEX CLEAN ENERGY EMERGENCY ACTION PLAN, and I have reviewed and understand its contents.</p> | |
| <p>_____</p> <p>Signature of site personnel</p> | <p>_____</p> <p>Date</p> |
| <p>_____</p> <p>Site personnel name (please print)</p> | <p>_____</p> <p>Employee #</p> |



EXHIBIT 27-4: FIRE SERVICE RESPONSE CORRESPONDENCE

Subject:Epping Volunteer Fire District Statement to Apex

Date:Sun, 2 Aug 2020 21:33:27 -0400

From:David Perham <n1dp@roadrunner.com>

To:lindabelfiore@apexcleanenergy.com

To whom it may concern,

This is to acknowledge the Epping Volunteer Fire District's awareness of the size and scope of the Apex Wind Towers project in Columbia and Township 18/19/24 Maine.

We have been briefed in the past about how the system will be laid out and remotely controlled. We also understand the possible need for fire suppression and possible rescue of personnel working in or around the towers and associated plant. We know that climber rescue will be conducted by the climbing crew. Tower Fires or other physical failures that may spread fire will primarily be fore spread of fire to surrounding terrain. We will stand by for a safe go-ahead from Apex before attempting to apply water to any tower or associated distribution equipment; as with and electric power system.

Our primary response areas are the Towns of Columbia and Columbia Falls. We are also under contract to the Washington County Unorganized Territories which include; Centerville, TWP 18, 19 24, and 25. Under the contract we provide fire suppression for structures and vehicles. All wildland fires in the organized Territories are the primary responsibility of the Maine State Forest Service.

We also understand our service may be necessary during construction of the sites.

We look forward to working with you in the future,

David W. Perham, Fire Chief
Epping Volunteer Fire District
PO Box 204
Columbia, Maine 04623

eppingvfd@gmail.com

August 20, 2020

Deblois fire Department

10 Lane Road

Deblois, ME 04622

To whom it may concern:

I am familiar with the Downeast Wind Project proposed in the town of Columbia and Territories 18 & 24, Washington County, and believe that it will have minimal or no impact on the Deblois Fire Department service. I am aware that project information is available from the project's local office on US Rt. 1 in the town of Columbia. Please feel free to contact me if you need any additional information.

Town office Phone 638-3801 only open on Tuesday's from 8:00 to 3:00

Personal Cell Phone Fire Chief Cynthia Gay 598-6945

Personal Cell Phone Assistant Chief William Kinter 460-4743

A handwritten signature in black ink, appearing to read 'Cynthia Gay', with a stylized flourish at the end.

Cynthia Gay

Fire Chief of Deblois



STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION & FORESTRY
MAINE FOREST SERVICE
87 AIRPORT ROAD
OLD TOWN, MAINE 04468

JANET T. MILLS
GOVERNOR

AMANDA E. BEAL
COMMISSIONER

December 7, 2020

Robert Gee
NE Development Team
Apex Clean Energy

Robert,

In reviewing the proposed site construction of wind turbines by Apex Clean Energy for the Downeast Wind project in Township 18 MD, Township 19 MD and Township 24 MD (Washington County), I have made the following notes relative to my agency's duties and responsibility for wildfire control in these areas and any impacts this project might have:

- We see no negative impact to our operation (Maine Forest Service) once the wind turbines are fully operational at the locations specified on the maps you have provided us. Any risks identified during the construction phase can easily be mitigated with proper communication and forethought.
- We always urge caution during the construction phase for this project as this is likely the time of greatest risk of a wildfire start. Our Forest Rangers will actively patrol these areas to ensure that construction workers and firms adhere to all of Maine's open burning laws, including that a permit be acquired for any out of door fire and that all fires must be fully extinguished before leaving them.
- Permits for brush burning can be obtained during normal business hours by calling our Central Region Headquarters in Old Town at (207) 827-1800.
- Reporting of wildfires in Maine's Unorganized Territories should be communicated by using the E-911 system.

I will gladly work with your firm and others involved with the project to ensure a safe operation from the standpoint of wildfire prevention and control.

Regards,

Jeffrey B. Currier
Regional Forest Ranger

PATTY CORMIER, DIRECTOR
MAINE FOREST SERVICE
18 ELKINS LANE, HARLOW BUILDING



PHONE: (207) 287-2791
WWW.MAINEFORESTSERVICE.GOV
TTY USERS CALL MAINE RELAY 711

Contact Information:

Jeffrey B. Currier
Regional Forest Ranger
Maine Forest Service
Central Region HQ
87 Airport Road
Old Town, ME 04468
Jeff.currier@maine.gov