
Emergency Response Plan (DRAFT)

South Hill Road,
Villanova, NY

Applicant:
Villanova Wind 3, LLC
Villanova Wind 4, LLC
Villanova Wind 5, LLC

For Activities At:
South Hill Road
Villanova, NY 14062

Prepared by:



New Leaf Energy
22 Century Hill Drive
Latham, NY 12110

Dated: August 2023



DISCLAIMER STATEMENT

The information contained in this Emergency Response Plan (“ERP”) is being made available by New Leaf Energy, Inc. (“NLE”) and Villanova Wind 3, LLC, Villanova Wind 4, LLC, & Villanova Wind 5, LLC (Referred to as “Villanova Wind”) to local first responders and to the general public to educate and provide a preliminary plan for Villanova Wind Turbine Project (“Project”) of the procedures to follow in the event of an emergency.

The contents of the ERP are preliminary and provided in good faith, but nothing herein should be taken as constituting professional advice. By the dissemination of the information contained herein, NLE and Villanova Wind intend to ensure the transmission of important information to site personnel and visitors regarding emergency procedures.

In no event shall NLE, Villanova Wind or their affiliates, be liable for any damages of any kind arising out of or in any way connected with the use of this ERP.



Table of Contents

1.0	Introduction	3
2.0	Emergency Management Organization.....	5
3.0	Emergency Contact List.....	7
4.0	Emergency Response Procedures.....	8



1.0 Introduction

Villanova Wind recognizes that site personnel have the right and need to know the procedures to follow in the event of an emergency. With this ERP, Villanova Wind is attempting to transmit information to site personnel regarding emergency action.

This Emergency Response Plan (“ERP”) is developed to support the safety of persons at the Villanova Wind and Battery Energy Storage System (BESS) facility in the event of a major emergency which could occur at the Facility where work is performed. The ERP discusses events which include:

1. Communication media
2. Field Injury
3. Fire
4. Earthquake
5. Adverse Weather
6. Hazardous Material Spill
7. Crime / Violent Behavior / Civil Disturbance

The ERP is established to give additional awareness to the following:

- Identify alarm and emergency evacuation procedures.
- Identify procedures to be followed by site personnel who remain to operate critical operations before they evacuate.
- Identify rescue and medical duties for all site personnel following emergency evacuation.
- Identify persons who can be contacted for further information or explanation of duties under this plan.
- Establish training guidelines for site personnel regarding this plan to support safe practices in the event of an emergency.

Plan Maintenance

The responsibility for maintaining this Plan has been assigned to the facility Plant Operator. Herein the term “Manager” or “Management” shall mean any Manager or Supervisor, unless otherwise specified.

Site Personnel Training

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

Beyond new hire orientation, the Plant Operator, or the employee’s direct supervisor, shall provide training to support their job function.



A copy of this Emergency Response Plan (“ERP”) is provided to each site person and is to be available at all times for all site personnel to review.

Local First Responder Training and Access

Local first responders will be provided with a copy of the final ERP.

Annual training will be held for local first responders. The specifics of the annual training will be decided by the Plant Operators and local first responders. Only personnel who have been certified in High Tower Rescue procedures (or equivalent) may perform rescues at levels above the ground or base level in wind turbines.

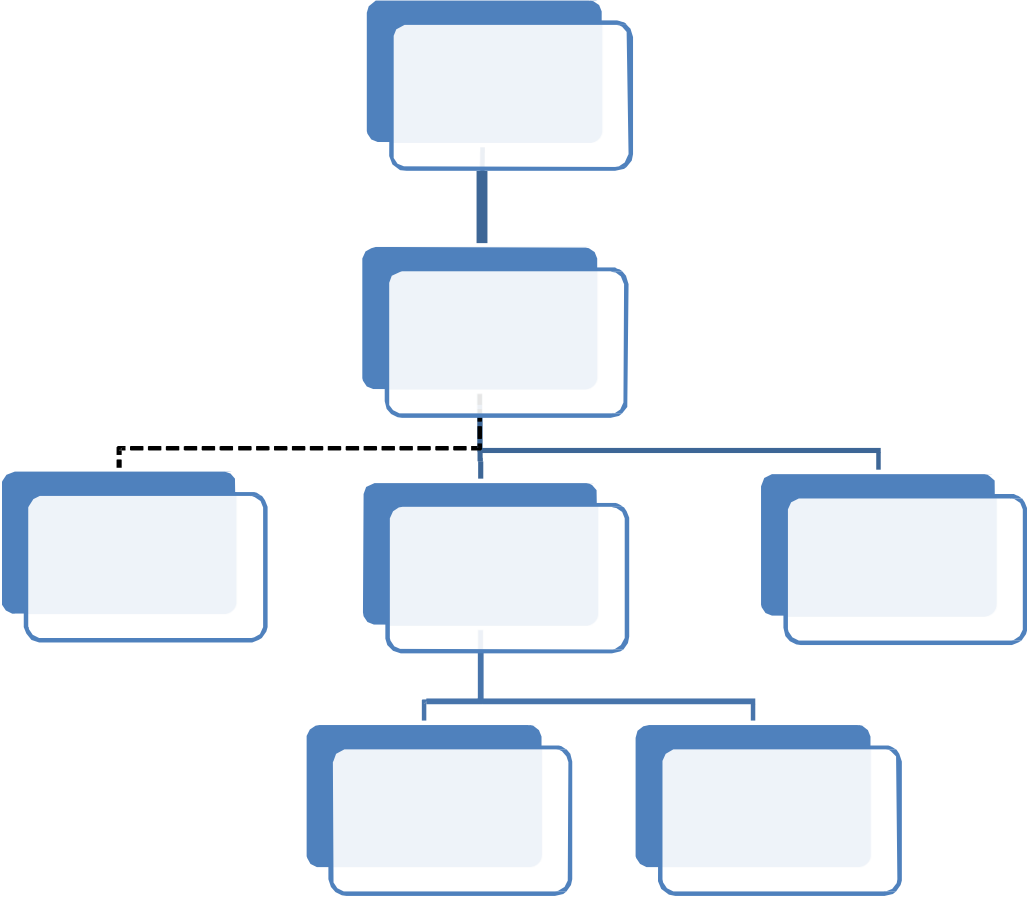
Fire responders are not expected to access a turbine location to fight a fire since current best practice is to let the fire burn out at a turbine. Emergency responders will not have direct access to turbines through access roads due to security and landowner preference reasons. However, anytime that the Facility operators and maintenance personnel are at a turbine site, the access road gates remain unlocked, so medical personnel will be able to access turbines when personnel are at these locations.

Regarding the BESS facility, access will be provided in accordance with industry standards. Equipment specific fire response information and chemical Safety Data Sheets (SDS) will be provided to the local Fire Department as suppliers are determined. Regular fire drills will be coordinated between Fire Responders and site staff on a schedule and frequency suitable to both parties.



2.0 Emergency Management Organization

Emergency Management Hierarchy **to be determined.**





Key Personnel Contacts

Villenova Wind Corporate	TBD	TBD
	TBD	TBD
Plant Operators	TBD	TBD
	TBD	TBD
Turbine supplier O&M Supervisor	TBD	TBD
Turbine supplier Health and Safety	TBD	TBD
BESS Hazmat Responder	TBD	TBD

Personnel Responsibilities

All Site Personnel	
<ul style="list-style-type: none"> Respond and assist (when safety is not jeopardized) to emergency situations 	
<p style="text-align: center;">Plant Operator</p> <ul style="list-style-type: none"> Updates emergency plans and policies Ensures site personnel have access to policies and procedures Interfaces with local utility companies Interfaces with emergency response service entities Interfaces with general public Responsible for BOP equipment isolation When possible notifies all site personnel of emergency situations Reports to Villenova Wind Corporate 	<p style="text-align: center;">Turbine Supplier Health and Safety</p> <ul style="list-style-type: none"> Oversees incident reporting
	<p style="text-align: center;">Plant Remote Operations Center (ROC)</p> <ul style="list-style-type: none"> Monitor plant assets 24/7 Notifies Plant Operator of equipment irregularities
<p style="text-align: center;">Turbine Supplier O&M Supervisor</p> <ul style="list-style-type: none"> Reports emergency situations to Plant Operator and Turbine Supplier H&S In absence of Plant Operator reports to Villenova Wind Corporate Ensures timely incident reporting to Turbine Supplier H&S and Plant Operator 	<p style="text-align: center;">Customer Subcontractors</p> <ul style="list-style-type: none"> Notifies Plant Operator of any emergency situations Completes incidents reports



<p style="text-align: center;">Turbine Supplier Technicians</p> <ul style="list-style-type: none"> • Report emergency situations to Turbine Supplier Supervisor • Complete incident reports 	<p style="text-align: center;">Turbine Supplier Subcontractors</p> <ul style="list-style-type: none"> • Report emergency situations to Turbine Supplier Supervisor • Complete incident reports
<p style="text-align: center;">BESS O&M Supervisor</p> <ul style="list-style-type: none"> • Reports emergency situations to Plant Operator and BESS Supplier H&S • In absence of Plant Operator reports to Villenova Wind Corporate • Ensures timely incident reporting to BESS Supplier H&S and Plant Operator 	<p style="text-align: center;">BESS O&M Technicians</p> <ul style="list-style-type: none"> • Report emergency situations to BESS Supplier Supervisor • Complete incident reports

3.0 Emergency Contact List

Medical Assistance

Local facilities that will be used to assist or treat medical injuries include:

CLOSEST EMERGENCY HOSPITAL:

Brooks Memorial Hospital

529 Central Ave, Dunkirk, NY 14048 Phone: 716-366-1111

LOCAL PROFESSIONAL EMERGENCY RESPONSE:

911

Notification of Landowners

Plant operator will notify Project component host land owners of incidents occurring on their property via telephone. This reporting will be at the discretion of the Plant Operator.

Notification of Utilities

The Plant operator will notify any relevant utilities that may be impacted by incidents that occur at the Project by telephone.

Notification of Environmental Agencies

Plant Operator will notify local or regional environmental agencies of incidents which may have resulted in violation of applicable environmental regulations (for example, release of chemicals or lubricants to the environment).

New York State Department of Environmental Conservation

Spill Hotline (24-hour, toll-free hotline for reporting oil or chemical spills)

1-800-457-7362



4.0 Emergency Response Procedures

4.1 Communication Media

All field site personnel shall carry or have access to communication media and is identified by their 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 field 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 has communication media at all times during working hours.

4.2 Field Injury Procedure

A. FIRST PERSON AT THE ACCIDENT SCENE

Upon arriving at the scene of the injury related Accident, the first person shall survey the scene (Is it safe?). The first person at the scene will have to determine whether to call 911 or to transport the injured person to the hospital. If the responder is unsure call 911.

B. CALL 911

The responding individual will...

1. Dial 911 immediately.
2. Identify yourself as a Villanova Wind employee.
3. Relay information to the 911 operator.
4. If the Victim has been hanging in a harness the 911 caller must notify 911 and the emergency response crew that the victim could be suffering from orthostatic shock (suspension trauma). DO NOT allow any personnel to lay an unconscious person who has been hanging in a harness on their back. IT COULD KILL THE PERSON. If the injured person is to be emergency descended from the tower someone must be on the ground to catch them to prevent them from coming to rest on their back.

If a life flight is required, a 100x100 area is required to land the helicopter. The on scene leader of the fire department will pick the suitable area.



The caller will have to make considerations for the weather conditions at the time of the emergency. If the roads are icy it may not be possible for the ambulance and/or fire truck to access the area. The caller will have to coordinate through the 911 operator if they will meet EMS somewhere on the wind farm.

C. ALSO NOTIFY THE FOLLOWING PERSONS

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

- Plant Operator
- Site Supervisor

4.2.1 Medical Emergencies

Medical cases generally fall under the following categories:

Minor Medical Case – Medical cases requiring minimal care and presenting no disability potential. Frequently do not require professional medical care.

Medical Case – Medical cases that are not life threatening and not likely to result in permanent or serious disability. Require professional medical care.

Emergency Medical Case – Those medical cases that, if not properly attended to, could result in death or serious injury. Permanent disability is possible. Require professional medical care.

A. PROCEDURE

1. Do not move victim unless safety dictates or an emergency descent is required.
2. If the injury appears to be life threatening, be prepared to give the 911 operator as much information as possible.
3. If the injury is not life threatening or likely to result in permanent disability, first aid care may be provided by trained employee, or the injured person will be transported to the ER.

B. LOCATION OF FIRST AID SUPPLIES

Each vehicle shall be equipped with an individual first aid kit.

Field: Ground floor of WTG and in the nacelle

AEDs: Automated External Defibrillators (AEDs) are located in strategic locations onsite. Their storage locations are marked on the site map.



4.3 Fire

Wind Turbine:

1. Field personnel will call 911 in the event of a fire. After the 911 call notify the Plant Operator and Turbine Supplier Supervisor.
2. Know the location of fire extinguishers, fire exits and alarm systems in your area and know how to use them. Extinguishing a fire should not be done unless it can be done in a safe manner.
3. If a minor fire appears to be controllable, trained personnel may attempt to extinguish the fire using fire extinguishers or other appropriate sources, only after "911" has been called.
4. A complete evacuation of the area will be performed in any fire emergency. All site personnel should proceed to the nearest exit or safe location.
5. Seek out any handicapped personnel in the area and provide assistance when exiting.
6. Managers or site personnel will assist in the evacuation and will meet the Fire Department to direct them to the proper location.
7. Once the Fire Department has arrived, the responding incident commander will take charge of all rescue operation and suppression activities.
8. Personnel should meet at:

Location TBD (Emergency Muster Point)

9. Keep clear of fire lanes, hydrants and walkways for emergency crews and vehicles. Personnel should remain at this location until accounted for by Management. Do not leave the 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 the Plant Operator can declare the state of emergency over and give permission to re-enter.

BESS

Villanova Wind will deliver BESS manufacturer's equipment specific fire response information and Safety Data Sheets for materials and substances when suppliers and equipment have been selected. Generally, BESS fire response shall be conducted as follows:

1. Evacuate the BESS enclosure and do not fight a battery fire with conventional equipment. Call 911. Call the Remote Operation Center (ROC). Notify the Plant Operator and BESS O&M Supervisor.



2. Establish an exclusion zone around the BESS of 100 feet on all sides. Do not stand in front of any doors or attempt to open doors or cabinets. Avoid contact with liquid releases, vapors, or smoke.
3. Site personnel should assist with evacuation, meet the Fire Department, and direct them to the proper location.
4. Provide first responders with communication to the Remote Operation Center. The ROC can provide details and support information to first responders.
5. Once Fire Department arrive, site personnel should meet at the Emergency Muster Point: **Location TBD**
6. Keep clear of hydrants, fire lanes and emergency crews and vehicles. Remain on site and proceed to the Muster point. Do not leave the site until accounted for and given permission to do so by a supervisor or the Plant Operator.
7. The Fire Department should use defensive firefighting techniques as much as possible. Spray mist around the exclusion zone and ensure that the fire does not spread to local materials or vegetation.
8. If direct suppression is needed, ensure correct suppression agent is used based on SDS. For Lithium-Ion batteries, water is preferred as it cools the batteries. Ensure that electrolysis of water does not occur.
9. A battery fire can continue for hours or days. Monitor for flareup and maintain vigilance for hazards. Do not open doors, cabinets, or ventilation. A thermal imaging camera can be used to externally disposition a battery fire.
10. Before re-entering the BESS enclosure after a fire, test the atmosphere for hazards such as flammable gases.
11. Only the Plant Operator can declare the state-of-emergency “over” and give permission to site staff to re-enter the site after an evacuation.

4.4 Earthquake

A. 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 not 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.

B. IMMEDIATELY AFTER THE QUAKE



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. If your device does not operate at first, keep trying. Know that someone will be trying to make contact with you also.
3. If you feel safe in doing so, attempt to evacuate to the following designated meeting place:

Location TBD

Back up designated meeting place: TBD

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

4.5 Adverse Weather

A serious weather “watch” indicates that conditions for bad weather exist. During a “watch” status, maintain a normal routine. The Plant Operator and all personnel should monitor available information. 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.

4.5.1 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 or windows, metal pipes or electrical appliances.
3. Prepare for flash flooding.
4. Follow Management instructions.



General Information

During the 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 employees 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 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 for 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, 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 of 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 these 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 threat 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

1. Avoid being in or near:

Wind turbine and communication 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 employees shall wait at least 30 minutes after the last lightning strike within the warning zone surrounding the Wind Turbine 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 APPROACH the wind turbine.



When lightning is between 50 and 30 miles from the Facility, on-site personnel should complete tasks, temporarily stow equipment and begin demobilizing from wind turbines. When lightning is closer than 30 miles, on-site personnel should evacuate a wind turbine immediately. On-site personnel should wait in service vehicles a minimum of 300 feet from the wind turbine until 30 minutes has passed since the last lightning strike within a 50 mile radius of the wind turbine.

2. 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.

3. When in Vehicles during lightning:

If you get caught inside a metal vehicle 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.

4. Heavy Equipment:

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.

5. 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 individuals struck by lightning.

First:

Call 911 to provide directions and information about the individual(s).

Response:

The first priority of emergency care is "make no more casualties". If the area where the victim is located is 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.

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.

Resuscitation:

Perform CPR if trained to do so. Use an AED to restore normal heartbeat if the victim has no or abnormal pulse.

4.5.2 Flooding

Concerns to be aware of in the Field:

1. Down power lines.
2. Transformers down, exposing primary/secondary lines.
3. Cracks in dikes, exposing primary/secondary lines.
4. Control panels down, exposing secondary lines.
5. Towers over, exposing secondary lines.

4.5.3 Tornadoes

Tornado Watch

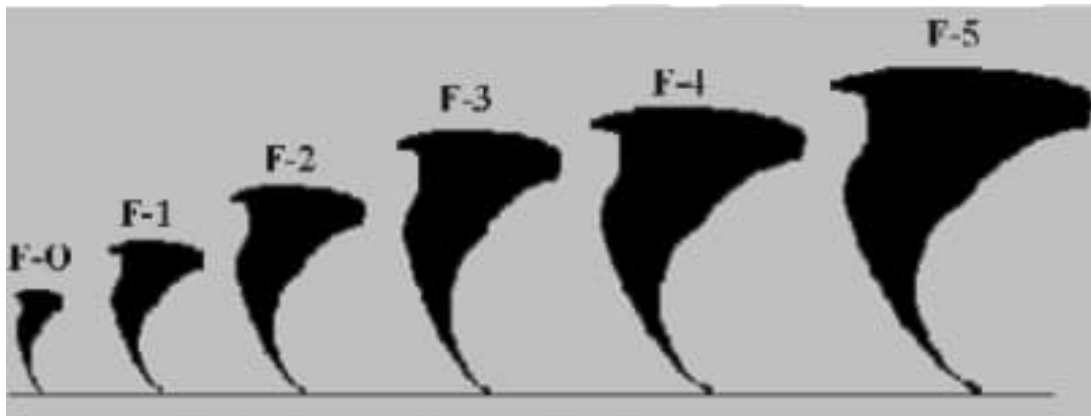
A tornado watch means that conditions are favorable for tornados to develop.

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



F-0: 40-72 mph, chimney damage, tree branches broken.

F-1: 73-112 mph, mobile homes pushed off foundation or overturned.

F-2: 113-157 mph, considerable damage, mobile homes demolished, trees uprooted. F-3: 158-205 mph, roofs, and walls torn down, trains overturned, cars thrown.

F-4: 207-260 mph, well-constructed walls leveled.

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 common. 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. Before, during, and after, tornados all affected employees need to be aware of what to do and where to report.

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

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.

When a tornado warning is issued, local EMS, if trained to do so, should take as a minimum the following precautions to alert the public:

- Sound local sirens (know what is the sequence in your area).
- Activating the Emergency Alert System (SAS), to interrupt radio and television broadcasts to provide instructions and information to the public.



Tornado Safety

1. Tornado danger signs (learn and know these tornado danger signs):
 - An approaching cloud of debris can mark the location of a tornado even if a funnel is not visible.
 - Before a tornado hits, the wind may die down and the air may become very still.
 - Tornadoes generally occur near the trailing edge of a thunderstorm. It is not uncommon to see clear, sunlit skies behind a tornado.
2. Take the following protective actions when a tornado watch has been issued in your area:
 - Have a person designated to monitor a radio or television.
 - Notify all affected employees of the tornado watch and assure that they are in immediate contact if an emergency arises.
 - If the weather is extreme, all employees should leave the field.
 - Take the following protective actions when a tornado warning has been issued in your area.
 - Seek sturdy shelter in a basement or other predestinated “tornado shelter” (not a mobile home, car or trailer).
 - Go at once to a windowless, interior room; storm cellar; basement; or lowest level of the building.
 - If there is no basement, go to an inner hallway or a smaller inner room without windows, such as a bathroom or closet.
 - Stay away from windows, doors, and outside walls (most deaths occur from the flying debris).
3. If outdoors:
 - If possible, get inside a building.
 - If shelter is not available or there is no time to get indoors, lie in a ditch or low-lying area or crouch near a strong building. Be aware of the potential for flooding.
 - Use arms to protect head and neck.
4. If in a car:
 - Never try to out drive a tornado in a car or truck. Tornadoes can change direction quickly and can lift up a car or truck and toss it through the air.
 - Get out of the car immediately and take shelter in a nearby building.



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

Designated meeting place: **TBD**

Back up designated meeting place: **TBD**

4.5.4 Cold Weather Safety

General

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.

Additionally, cold weather creates certain unique environmental hazards that workers and responders should be aware of such as wind turbine ice-shed.

Immersion

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 enhance the effects of low temperatures. The chart below 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.

U.S. Customary Wind Chill Chart												
Estimated Wind Speed in MPH	Actual Thermometer Reading (F)											
	50	40	30	20	10	0	-10	-20	-30	-40	-50	-60
	Equivalent Temperature (F)											
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	-124
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
(Wind speeds greater than 40 mph have little additional effect)	LITTLE DANGER* (for properly clothed person)			INCREASED DANGER* (for properly clothed person)				GREAT DANGER*				
*DANGER FROM FREEZING OF EXPOSED FLESH												

Cold Injuries

A. 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 temperature 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 possibly go into a coma. At a core body temperature below 86 degrees cardiac arrest is likely.



B. 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.

C. Treatment

1. General

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.

2. Hypothermia

First priority in hypothermia/ cold injury treatment is to remove the patient from the cold environment. Keep the person warm and dry. Use blankets, sleeping bags, etc. to cover exposed areas. Shelter the patient from the wind. If in the field, the cab of a vehicle with the heater running will provide a warm environment. If the patient is in advanced hypothermia (confused, no shivering) handle them gently and do not let patient exert themselves. There is possibility of cardiac arrest. Seek medical attention.

3. 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 is frozen to the skin. Cover the skin with loose clothing or bandage to prevent friction or pressure. Never rub or massage the affected area. If the area is hard and frozen do not attempt to re-warm it by applying heat. Seek medical attention.

Ice-Shed

During winter or cold weather events, conditions often become favorable for ice buildup on trees and structures. Workers or Emergency Responders working under wind turbines should learn an awareness of favorable icing conditions and should use caution when



accessing or traveling under or around turbines during favorable icing conditions. Generally, icing conditions are favorable:

- After freezing-rain, hail, or sleet events,
- After a sharp drop in temperature from above freezing to below freezing,
- After major snow accumulation.

When ice is present on wind turbines, ice-shed becomes a concern. Ice shed occurs when chunks or sheets of ice that have accumulated on the exterior of a turbine release, creating an overhead drop hazard. The greatest risk exists when the temperature begins to rise due to local weather patterns or radiant solar temperature increase. When temperatures rise, ice that has accumulated and adhered to a wind turbine's exterior releases and becomes a significant drop hazard. Personnel accessing or working near wind turbines during favorable icing or shedding conditions should take the following precautions:

- Check the weather report before physically travelling to the site. Assess any environmental hazards, including icing and ice shed probability.
- Observe surroundings while traveling to site. Note any ice accumulation on roads, trees, powerlines or structures.
- Stop the wind turbine remotely by contacting the wind turbine ROC or the Plant Operator or assignee who has credentials for remote control of the turbine.
- Upon arrival to a wind turbine, park service vehicles a minimum distance of 300 feet from the tower. Use binoculars or a spotting scope to visually inspect the tower sections, nacelle, rotor and blades carefully for ice accumulation.
- If ice accumulation is discovered, notify a supervisor or Plant Operator. Observe the turbine for falling ice debris from inside service vehicle for a minimum of 30 minutes. Check the hourly weather report for any projected major increases in temperature.
- If no ice debris has shed after 30 minutes and conditions are not forecasted to become favorable to shedding (an increase in temperature, sun exposure) during the duration of the work assignment, work may proceed.
- During work activities remain cautious. If conditions change, stop work and re-evaluate. If ice-shed is observed at any point, stop work immediately and evacuate the site by entering service vehicles and driving at least 300 feet from the tower. Notify a supervisor.

4.6 Hazardous Materials

Safety Data Sheets (SDS's) are kept on premises on all chemicals used at the site.

These data sheets are located: **TBD**



The nacelle frame of the wind turbine is designed to hold all liquid uptower in the event of a single component failure.

The enclosure of the BESS is designed to contain battery electrolytes and cooling agents for limited failures. Contact the BESS Hazmat responder if there is a liquid release.

For spills, leaks and incidents when a fire is not involved, the Plant Operator should be notified.

4.7 Crime/Violent Behavior/Civil Disturbance

A. Crime or Violent Behavior

HOW TO REPORT:

You may contact any Manager, or you may call "911" yourself to access the Police Department.

B. 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.

C. Reporting Crimes Not In Progress

All crimes should be reported. Be prepared to provide the following information to the investigating officer:

1. When the incident occurred.
2. If a property crime, what was taken or damaged.
3. The names and/or descriptions of any suspects or witnesses.

D. Civil Disturbance Response Plan

1. Any site personnel noting a possible civil disturbance should contact a Manager immediately.



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

E. Electric Disturbance Events (OE-417)

If a crime or violent behavior affects the operation of the wind farm DOE form OE-417 may need to be submitted. Verify this via the OE-417 instructions. Projects that are NERC Compliant may have additional requirements. See specific NERC instructions for such facilities.