

## **4.6 EMERGENCY PLANS**

### **4.6.1 Introduction**

On-site emergency plans will be prepared to protect the public health, safety and environment on and off the Project site in the case of a major natural disaster or industrial accident relating to or affecting the Project. The Applicant shall prepare the plans and be responsible for implementing the plan with its operations team in coordination with the local emergency response support functions. The plans will describe the emergency response procedures to be implemented during various emergency situations that may affect the Project or the surrounding community or environment.

The emergency plans described in this section are an outline of the details that will be included in the detailed emergency plans to be developed prior to the construction and operating phases of the Project. This outline is based on Applicant's experience in operating other similar wind power projects. For wind power projects, the key element of an effective emergency and safety plan is the ability to communicate. During both construction and operation of the Project, all operations and construction team leaders will be equipped with two-way short-band radios and cellular phones.

Preliminary construction emergency plans will be developed and submitted for review by EFSEC prior to the start of construction activities. EFSEC, as well as local emergency response organizations, where appropriate, will review and approve all plans before they are implemented. Preliminary operations and maintenance emergency plans will also be developed and submitted for review by EFSEC and prior to the start of plant operations. During the Project construction and startup period, the emergency plans will be updated to conform to manufacturer and vendor safety information for the specific equipment installed at the Project.

### **4.6.2 Events Covered By Emergency Plans**

The emergency plans cover a number of events that may occur at or near the Project site by natural causes, equipment failure or by human mistake. The following is a list of potential events that will be covered by the emergency plans and form its base table of contents.

- Personal medical injury;
- Construction emergencies;
- Project evacuation;
- Fire or explosion;
- Floods;
- Extreme Weather Abnormalities;
- Earthquakes;
- Volcanic eruption;
- Facility Blackout;
- Chemical or Oil Spill or Release;
- Blade or Tower Failure;
- Aircraft Impact;
- Vandalism
- Bomb Threat.

The Project operating and maintenance (O&M) group and third party contractors will receive regular emergency response training as part of the regular safety training program to assure that effective and safe action will be taken to reduce and limit the impact of emergencies at the Project site.

#### **4.6.3 Personal Medical Injury**

Medical emergencies will be normally handled by calling 911 and alerting the EMS (Emergency Medical Services) system. The City of Ellensburg fire department provides emergency medical services (EMS) for the entire county, directly billing for services that include treating, burns, fractures, lacerations, fall injuries, and heart attacks. Ambulances are located in Ellensburg, and the towns of Kittitas. Also, Cascade Search and Rescue is located in Ellensburg. Emergency calls are dispatched through the Sheriff's office to the fire districts that provide search and rescue support.

Kittitas Valley Community Hospital in Ellensburg serves the entire county. The hospital has Level Four trauma service, with a limited number of specialists available. Patients with head injuries, severe burns, and/or trauma are transported to a different facility, usually Harbor View Medical Center in Seattle. Less severe accident victims are sometimes transported to Yakima for hospitalization and treatment. There is a heliport on the roof of the hospital, and a helicopter is available for emergency response (Eric Jensen, Kittitas Valley Community Hospital administrator, personal communication). MedStar, a critical care transport service located in Moses Lake, Washington, also provides air ambulance support services to Kittitas County.

All operations personnel, working on the turbines, will work in pairs. All turbine maintenance staff will be trained in lowering injured colleagues to prepare for the possibility of an injury while working in the nacelle that prevents a worker from climbing down the tower safely. A rescue basket, especially designed for this purpose, will be kept at the operations and maintenance facility and will be available for use by local emergency medical services personnel. Training in its use will also be provided to local EMS personnel.

The following actions will be taken for personnel injuries:

- The Site Construction Manager(s), O&M Manager, or designee, will be notified of the injury(s);
- A qualified first aid attendant will administer first aid until medical assistance arrives;
- The Site Construction Manager(s), O&M Manager, or designee, will notify Kittcom, the county-wide emergency response (911) system;
- All key supervisors will be paged or called and advised of the injury;
- For off-site assistance, the Construction Manager(s), O&M Manager, or designee, will meet the emergency responders at a prearranged gate and direct them to the location of the emergency;

- Should an employee become injured and require emergency off-site medical transportation, they will be accompanied by a Project representative to give pertinent information needed;
- In the event of death, only a professional medical practitioner can confirm the death. The paramedics will be called first and then a physician. Notification of the Kittitas County Sheriff's office and the local Emergency Medical Service (EMS) is required plus OSHA per the requirements of the OSHA Health and Safety Act of 1970 which requires the notification within eight hours after the death of any employee from a work-related incident or the in-patient hospitalization of three or more employees as a result of a work-related incident;
- If a medical practitioner declares death, the Construction Manager(s) or O&M Manager, as the case may be, will inform the deceased's next of kin.

#### **4.6.4 Construction Emergency Plan**

The Project will be managed and constructed by personnel and contractors experienced and familiar with the construction of wind power projects of the type proposed for the Project. The construction specifications will require that the contractors prepare and implement a Construction Health and Safety Program that includes an emergency plan. The Construction Health and Safety Program will include the following provisions:

- Construction Injury And Illness Prevention Plan;
- Construction Written Safety Program ;
- Construction Personnel Protective Devices;
- Construction On-Site Fire Suppression Prevention; and
- Construction Off-Site Fire Suppression Support.

Each contractor will develop its own plans which will be tailored to suit the specific site conditions, design and construction requirements for the Project. The outline, as presented in this section and Section 4.4.4, 'Construction Management - Safety Program', will provide the minimum requirements for the Project.

In the event of a construction emergency, the construction plan will require an alert broadcast to all on-site personnel and the requirement that all employees gather at a predetermined gathering place to receive further instructions. The construction emergency plan will focus primarily on personnel injury, construction related accidents and on weather related events. The Construction Emergency Plan will be submitted to EFSEC prior to the start of construction.

#### **4.6.5 Project Evacuation**

Under the most severe weather events, a potential threat to the Project property or workers such as a bomb threat, the Project site area may have to be evacuated. The Construction Written Safety Program, the operating power plant Emergency Action Plan

or the Plant Operational Safety Program, whichever is in force, will provide the plans for the site evacuation and include the following actions:

- A predetermined evacuation area will be designated unless the evacuation area is in danger;
- The Site Construction Manager(s), O&M Manager, or designee, will broadcast via two-way short band radio and over cell phones, a predetermined alarm and announce the specific egress, gathering area and the nature of the emergency. Acknowledgement from each on-site team leader and their crews will be required;
- The Site Construction Manager(s), O&M Manager, or designee, will notify the appropriate local authorities such as Kittcom (911) for fire, injury or hazardous material spills or other disturbances;
- For off-site assistance such as from the local fire district, Ellensburg EMS, or the Kittitas County Sheriff's Office, the Site Construction Manager(s), O&M Manager, or designee, will meet the off-site emergency response assistance at a prearranged location and direct them to the source of the emergency;
- All visitors and vendors/subcontractors will be guided by their key on-site contact;
- If required, the Project will be shut down using the central SCADA system or by opening breakers at the main substation as required. If a shut down is performed, the utility transmission system operator (either BPA or PSE) will be notified of the anticipated outage;
- The Site Construction Manager(s), O&M Manager, or designee, will proceed to predetermined evacuation area, perform a head count and provide further instructions to evacuated personnel;
- After all employees are accounted for, the employees may leave the area or go back to work, whatever the situation calls for.

#### **4.6.6 Fire or Explosion**

Prevention of fires or explosions is discussed in detail in 4.3.16.3, 'Health and Safety – Mitigation Measures'. Detailed measures will be spelled out in a number of the on-site safety programs including: the Construction Written Safety Program, the Construction On-Site Fire Suppression and Prevention Program, the Operational Safety Program, the Operations Written Safety Program and the plant Emergency Action Plan and the plant Fire Prevention Plan.

All on-site employees will be responsible to contribute to prevention through the following programs:

##### **During Construction:**

- Construction Written Safety Program;
- Construction On-Site Fire Suppression And Prevention;
- Construction Off-Site Fire Suppression Support.

**During Operation:**

- Operational Safety Program;
- Operations Written Safety Program;
- Emergency Action Plan;
- Fire Prevention Plan.

**4.6.7 Floods**

The Project Site and Feeder Line Transmission corridor lie entirely in Flood Zone C classified areas. Flood Zone C is defined by FEMA as a ‘flood insurance rate zone that corresponds to areas outside the 1-percent annual chance floodplain, areas of 1-percent annual chance sheet flow flooding where average depths are less than 1 foot, areas of 1-percent annual chance stream flooding where the contributing drainage area is less than 1 square mile, or areas protected from the 1-percent annual chance flood by levees. No Base Flood Elevations or depths are shown within this zone. Insurance purchase is not required in this zone’. The closest 100 year flood zone is approximately 2.4 miles from the PSE Interconnect Substation and 4.4 miles from the Project site boundary. Exhibit 10 shows the Project with Flood Zone Overlays.

Since Project facilities are located significantly outside the floodplain of the Yakima River and are more than 500 feet in elevation above the level of river or other water body, the risk of flood impacts is insignificant and is therefore not discussed here.

It is extremely unlikely that the 100-year rainstorm event will occur during Project construction, which could produce local short term sheet flooding on the Project site. However, most of the construction activities at the Project site will be outdoors and require access to roads which would be exposed to such local sheet flooding. Therefore, the Applicant has developed the following list of actions to be performed under these unlikely conditions:

- The Project Construction Manager(s) will consult with appropriate authorities at the County to determine the severity of local flooding;
- Construction materials that can be damaged by water or pollute waters if submerged will be moved to either enclosed areas or elevated areas above the short-term local sheet flooding to remain dry;
- If the flooding is severe, construction work will be shut down.

**4.6.8 Extreme Weather Abnormalities**

Extreme weather events might include blizzards, massive sleet or hail, ice storms, or extremely high winds. In the event of extreme wind gusts, the wind turbine generators automatically shut down and go into standby mode. All Project transportation vehicles will be maintained in good running condition with full fuel tanks. The Project will have

adequate foul weather gear for personnel. If extreme weather events occur, the following actions will be taken:

- When there is a weather warning issued by the National Weather Bureau, the Site Construction Manager(s), O&M Manager, or designee, will consult with appropriate authorities at the local weather service offices and at the county to determine the anticipated severity and duration of the weather event;
- The O&M Manager will hold planning meetings prior to a foul weather incident to prepare and implement a foul weather prevention plan;
- Loose materials that can be blown around or damaged will be moved inside or tied down;
- All doors will be secured;
- If the Project is shut down, the O&M Manager, or designee, will notify the electric transmission line operator (BPA or PSE) of the anticipated outage;
- Communication equipment will be checked;
- The substation high voltage line transmission facilities will be double checked for secure terminations on poles, relays, transformers and supports.

#### **4.6.9 Earthquake**

Project facilities including the wind turbines, towers, foundations and substation are all designed for the seismic class zoning at the Project site. Earthquakes occur without warning, thus damage prevention measures and plans must be made in advance. The probability of a severe earthquake at the Project site is described in Section 2.2.4, 'Design Criteria for Protection from Natural Hazards'. The wind turbines are all equipped with an over vibration sensors which will automatically shut down the turbine in the event of a severe earthquake.

Injuries and fatalities can be reduced by properly storing heavy objects and placing furniture to prevent displacement and overturning that will injure personnel. The following actions will take place during an earthquake:

- All personnel will seek safety at the nearest protected location;
- Personnel located inside the wind turbines will be instructed to get out of the turbine immediately, or if they are up-tower, they should stay there and take cover;
- Personnel will take cover so displaced material is not a problem and wait until the shaking has stopped;
- All personnel will check the immediate area to identify injuries and equipment failures and report to the Site Construction Manager, O&M Manager, or designee;
- All personnel will be instructed to report to a protected area, as necessary, or will continue monitoring the operating equipment;
- A determination will be made on missing personnel and a search and rescue effort will be taken if safe and appropriate;

- If the conditions warrant, Kittcom and BPA or PSE, (the electric transmission line operator), will be notified;
- Turbines will be shutdown manually as required depending on the severity of the quake and brought back on-line after they have been cleared for re-starting;
- Off-duty personnel will report, if they can, as designated in the emergency plan;
- The O&M Manager will approve re-entry to any turbines to carry out search and rescue efforts if the structures are intact and other plant safety issues are under control.

#### **4.6.10 Volcanic Eruption**

Volcanic eruption can result in ash falling on the Project site, which can cause lung damage, respiratory problems, and death by suffocation under extreme conditions. In addition, ash clogs machinery, filters, causes electrical short circuits, and makes roads slippery. Ash will damage computer disk drives and other computer equipment, strip paint, corrode machinery, and dissolve fabric. Communications and transportation may also be disrupted over a large area.

Precursory activity prior to eruption may provide early warning of impending eruptive activity. The decision to take shelter in-place or initiate a Project site evacuation will depend upon information concerning the safety of roadways. The actions to be taken are:

- Close all O&M building vents to prevent ash from entering buildings;
- Data processing equipment will be covered and all computers not required for safe Project operation or shutdown and other electronic equipment sensitive to dust will be shutdown;
- If the dust load is heavy enough, the Project will be shut down;
- If the conditions warrant, Kittcom and BPA or PSE (the electric transmission line operator) will be notified;
- A determination will be made if employees should be sent home immediately before roads become unsafe or if personnel must be sheltered on-site;
- Any ash cleaning operations would be initiated with cleanup personnel wearing protective equipment;
- The Project would coordinate all ash disposal activities with local Kittitas County officials.

#### **4.6.11 Facility Blackout**

A facility blackout would occur if the main utility grid power (either BPA's or PSE's system) de-energized or if a grid fault causes the substation's main circuit breaker to open. If the transmission system is shut down, the substation main circuit breaker connecting the power plant to the transmission system will be opened immediately, if not already opened. Such a power outage causes the turbines to shutdown, trip open the turbine main breaker and lock the rotors in place all automatically. Back up batteries at

the substation main control house will be tripped on for emergency power to the substation relay controls and also to emergency lighting inside the control house. The O&M Facility will also have emergency indoor lighting which will come on-line. The central Supervisory Control and Data Acquisition (SCADA) system's Uninterruptible Power Supply (UPS) comes on-line automatically to provide backup power to the system and allow for controlled shut-down of the computer system. No Emergency diesel power generator will be installed at the facility.

In the event of a facility blackout, the following procedures will be followed:

- Station service switchgear will be checked and breakers not opened by under-voltage will be opened;
- Breaker control relays inside the substation control house will be inspected;
- The central SCADA system will be inspected;
- The O&M manager or designee will immediately contract the lead transmission system operator (BPA or PSE) on duty to determine the status, expected delay and appropriate course of action;
- If the main transmission system is energized, the restart will commence only when cleared by the transmission system operator;
- Once the transmission system is re-energized, the turbines will be brought back on-line manually or automatically depending on the appropriate course of action as permitted by the Transmission System Operator.

#### **4.6.12 Chemical or Oil Spill Release**

A detailed construction spill prevention plan will be developed by the EPC Contractor and submitted to EFSEC for review prior to construction and operations. The plan will address prevention and clean up of any potential spills from construction and operations activities. The only fluids on site during construction and operations of the Project will include: water, diesel fuel, mineral oil for the transformers, and lubricating oils and a glycol water coolant mix in the wind turbines. In the event of a spill, it is highly unlikely that it will constitute an emergency; however, if it results in a fire, injury, or other issue, the remedial action will be executed in accordance based on the appropriate emergency plan provisions. Spills of liquids will be handled as outlined in Section 3.16.1.3, 'Spillage Prevention and Control – Releases of Hazardous Materials' and the plan measures will include:

- Notification of on-site construction and/or operations management;
- Immediate containment of the spill area with an earth berm;
- Notification of Department of Ecology (DOE) to determine an appropriate action plan in compliance with CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act of 1980) and MTCA (Model Toxics Control Act of 1988);

#### **4.6.13 Blade or Tower Failure**

If a wind turbine tower or blade has a catastrophic failure, it will be immediately de-energized to keep electrical power from the turbine. If the failure results in an injury, or other issue, the remedial action will be executed in accordance based on the appropriate emergency plan provisions. If such a failure occurs, the following actions will take place.

- Immediate notification of on-site construction and/or operations management;
- De-energization (electrical isolation) of the wind turbine and entire area of the electrical collection system;
- Tape off / rope off the area to restrict access;
- Inspect the area for safe access;
- Perform repair and removal of the wind turbine.

#### **4.6.14 Aircraft Impact**

In the event of an aircraft impact there would likely be both medical emergency requirements as well immediate notification requirements and actions as outlined in both, the emergency response plans for Sections 4.6.13, ‘Blade or Tower Failure’ and Section 4.6.3, ‘Personal Medical Injury’ above.

#### **4.6.15 Vandalism**

Vandalism does not necessarily present an emergency unless the vandal is caught in the act or if the act of vandalism results in a potential safety hazard. If a vandal is caught in the act, the Project staff person shall only collect as much information as possible about the scene and the culprit and notify the local police through 911. If it is noticed that an act of vandalism is creating a potential safety hazard such as the destruction of a power line, or otherwise, the appropriate remedial action will be executed promptly to eliminate or mitigate the hazard such as de-energization of the damaged power line, etc.

#### **4.6.16 Bomb Threat**

In the event of a bomb threat to the Project property or workers, the Emergency Action Plan would be activated and local law enforcement contacted. If necessary, the Project site would be evacuated as outlined in the plans for site evacuation in Section 4.6.5, ‘Project Evacuation’.