

## **Attachment 4**

# **Health, Safety, Security, and Environment (HSSE) Plan**

**BP Wind Energy**



**MOHAVE COUNTY WIND FARM PROJECT**

**HEALTH, SAFETY, SECURITY &  
ENVIRONMENTAL MANAGEMENT PLAN  
(HSSE PLAN)**



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<b>Attachment</b>	<b>Attachment Title</b>	
<b>A</b>	<b>Control of Work Procedure</b>	 HSSE 13.10.01 Control of Work.pdf
<b>B</b>	<b>Corporate Permit to Work Policy</b>	 HSSE 13.20.01 Permit to Work.pdf
<b>C</b>	<b>Permit to Work Form</b>	 HSSE 13.21.01 PTW Form.pdf
<b>D</b>	<b>Ground Disturbance Procedure</b>	 HSSE 13.60.01 Ground Disturbance F
<b>E</b>	<b>Ground Disturbance Permit</b>	 HSSE 13.61.01 Ground Disturbance F
<b>F</b>	<b>Critical Lift Procedure</b>	 Critical Lift Procedure.pdf
<b>G</b>	<b>Critical Lift Permit</b>	 Critical Lift Permit.pdf
<b>H</b>	<b>Crane Mobilization Procedure</b>	 Crane Mobilization ProcedureRev1.pdf
<b>I</b>	<b>Driving Safety Procedure</b>	 HSSE 40.10.01 Driving Safety.pdf

<b>J</b>	<b>Emergency Response Plan</b>	 Emergency Response Plan  Att-A Mohave ER Plan.pdf  Att-B Mohave ER Plan.pdf  Att-C Mohave ER Plan.pdf  Att-D Mohave ER Plan.pdf  Att-E Mohave ER Plan.pdf
<b>K</b>	<b>Contractor Management Practice</b>	 HSSE 12.10.01 Contractor managem
<b>L</b>	<b>BP Wind Energy's Drug and Alcohol Free Policy</b>	 BP drug policy.pdf
<b>M</b>	<b>Barricade and Barrier Requirements</b>	 HSSE 29.10.01 Barricading.pdf
<b>N</b>	<b>Blood borne Pathogens</b>	 HSSE 50.40.01 Bloodborne Pathoger
<b>O</b>	<b>Confined Space</b>	 HSSE 13.40.01 Confined Space Entry
<b>P</b>	<b>Working at Heights</b>	 HSSE 23 10 01 Working at Heights.p

<b>Q</b>	<b>Electrical Safety</b>	 AEPA_ALL_BU_SP_4 0_000029_00 - Electr
<b>R</b>	<b>Energy Isolation Procedure</b>	 HSSE 13.30.01 Lockout Tagout Proce
<b>S</b>	<b>Energy Isolation Permit</b>	 Energy Isolation Permit
<b>T</b>	<b>ATV Use Policy</b>	 ATV Driving Policy.pdf
<b>U</b>	<b>Rigging Inspection Documentation Sheet</b>	 Rigging Inspection Checklist.xls
<b>V</b>	<b>Cold Weather Work Plan</b>	
<b>W</b>	<b>Fire Prevention / Protection Plan</b>	 Mohave Fire Prevention Plan Rev2
<b>X</b>	<b>Daily JSEA</b>	 JSEA Procedure.pdf   JSEA Short Form.pdf
<b>Y</b>	<b>Forklifts and Powered Industrial Trucks</b>	 Forklift and Industrial Truck Ops.
<b>Z</b>	<b>PPE Assessment</b>	 PPE Hazard Assessment.pdf
<b>AA</b>	<b>Reserved</b>	
<b>BB</b>	<b>Reserved for Waste Handling Plan</b>	
<b>CC</b>	<b>Reserved</b>	
<b>DD</b>	<b>Lifting Procedure</b>	 Lifting Procedure

<b>EE</b>	<b>Assured Grounding</b>	 Assured Grounding
<b>FF</b>	<b>Chemical Hazard Communication Program</b>	 Hazardous Communication
<b>GG</b>	<b>Personal Protective Equipment</b>	 PPE
<b>HH</b>	<b>Respiratory Protection</b>	 Respiratory Protection
<b>II</b>	<b>Scaffolding</b>	 Scaffolds
<b>JJ</b>	<b>Compressed Gas</b>	 Compressed Gas Cylinders.pdf
<b>KK</b>	<b>Hot Work, Safe Welding, and Burning</b>	 Hot Work
<b>LL</b>	<b>Flammable and Combustible Liquids</b>	 Flammable and Combustible Liquids
<b>MM</b>	<b>Medical Case Management</b>	 HSSE 11.30.02 Medical Case Manage
<b>NN</b>	<b>Simultaneous Operations</b>	 SIMOPS
<b>OO</b>	<b>Hearing Conservation</b>	 Hearing Conservation
<b>PP</b>	<b>Stop Work Authority</b>	 Stop Work Authority.pdf
<b>QQ</b>	<b>BMPS</b>	 Appx_B.pdf

<b>RR</b>	<b>Fire Restrictions – BLM or Reclamation (Reserved)</b>	
<b>SS</b>	<b>Blasting Plan</b>	 Attach6 Mohave Blasting Plan.pdf
<b>TT</b>	<b>Blasting Permit</b>	 Blasting Permit.pdf
<b>UU</b>	<b>Heat Illness Prevention</b>	 Heat Illness Prevention.pdf
<b>VV</b>	<b>Daily Concrete Truck Route Inspection Form</b>	 Daily Concrete Truck Route Inspection For
<b>WW</b>	<b>Excavation Checklist</b>	 Daily Excavation Inspection Checklist.r
<b>XX</b>	<b>Excavation Competency Evaluation</b>	 Excavation Competency Evaluati
<b>YY</b>	<b>Reserved</b>	
<b>ZZ</b>	<b>Reserved</b>	

## 1.0 List of Acronyms

AA	Area Authority
ATV	All Terrain Vehicles
ANSI	American National Standards Institute
BLM	Bureau of Land Management
BU	Business Unit
BOP	Balance of Plant
CoW	Control of Work
CDL	Commercial Drivers License
DOT	Department of Transportation
EPC	Engineering Procurement Construction
GFCI	Ground Fault Circuit Interrupter
HSSE	Health, Safety, Security & Environmental
IA	Issuing Authority
JHA	Job Hazard Analysis
JSEA	Job Safety & Environmental Assessment
LOTO	Lockout Tagout
mph	Miles Per Hour
MOC	Management of Change
O&M	Operations and Maintenance
OSHA	Occupational Safety and Health Administration
PA	Performing Authority
PIC	Person in Charge
POD	Plan of the Day
PPE	Personal Protective Equipment
PTW	Permit to Work
Reclamation	Bureau of Reclamation
SHIP	Safety & Health Improvement Plan
SIMOP	Simultaneous Operation
SPA	Single Point of Accountability
SWA	Stop Work Authority
UV	Ultra Violet

## 2.0 Introduction

BP Wind Energy is fully committed to a program of responsible management in all areas of health, safety, security and the environment (HSSE). Every Contractor company is empowered and expected to adhere to the requirements of this Plan at a minimum.

This Plan provides the framework for communicating specific policies and demonstrating management's commitment to an HSSE culture that has, as its goal, No Accidents, No Harm to People and No Damage to the Environment. This requirement would apply internally and externally as appropriate to other stakeholders of the Project.

Compliance with federal, state, and local safety regulations as well as the safety and training requirements of the Contractor and BP Wind Energy is mandatory on this project. Specifically, compliance with 29CFR1926 and compliance with... Bureau of Land Management (BLM)/Bureau of Reclamation (Reclamation) Right-of-way grants is required unless the written safety policies and procedures of the Contractor or Sub-Contractor are more stringent in which case the most stringent shall apply. Subcontract personnel are to comply with the intent of this plan in implementing their safety program on-site. This does not relieve Sub-Contractors from their responsibility to address any specific hazards not identified in this plan.

Contractor will be responsible for the actions and work performed by their Sub-Contractors on the Project Site. Contractor is responsible for implementing this HSSE Policy and the Contractor's comprehensive safety program will be enforced for its employees and the employees of its Sub-Contractors while on the Project Site or to ensure that the individual Sub-Contractor's program equals or exceeds same.

In day-to-day operations, all work on the Project Site will utilize and conform to this HSSE Policy. Additionally, such work will comply with the environmental requirements of the Agreement.

### 2.1 Health and Safety Statement

All Project employees, Contractors and visitors are essential to this team effort and must be committed to conduct themselves in a safe and responsible manner. Every employee and Contractor has the responsibility to follow established safety, health and environmental requirements as well as enforcing accident prevention procedures within their function of responsibility. If you should determine that a situation will cause harm to personnel, loss of property or damage to the environment you are **authorized and required to stop the work** until the safety concerns have been adequately addressed.

Should you become aware of any practice, condition, or information that you believe is contrary to these commitments, inform your supervisor or a BP Wind Energy Representative. BP Wind Energy is committed in providing an injury-free work environment with the ultimate goal of **No Accidents, No Harm to People and No Damage to the Environment**.

### 2.2 BP Wind Energy's Golden Rules

BP has conducted an analysis of serious and sometimes fatal incidents across the regions and business units and has identified eight (8) areas of highest risk. Everybody who works for BP Wind Energy, **anywhere**, is responsible for getting HSSE right. Good HSSE performance and the health, safety and security of everyone who works for BP Wind Energy are critical to the success of BP Wind Energy business.

- **Permit to Work (PTW)** – Before conducting work that involves confined space entry, work on energy systems, ground disturbance or hot work in potentially hazardous or explosive environments, a permit must be obtained.
- **Energy Isolation** – Any isolation of energy systems; mechanical, electrical, process, hydraulic and others cannot proceed without an approved method isolating potentially dangerous energy and testing that isolation to insure that it is effective.
- **Ground Disturbance** – Work that involves a manmade cut, cavity, trench, open hole or depression in the earth's surface or in a walking surface cannot engage in conducting this work until a complete hazard assessment has been completed by a competent person, approved by BP Wind Energy Management and appropriate protections (mitigations) have been installed.
- **Confined Space Entry** – Entry into any confined space must be done in accordance and in compliance with BP Wind Energy's Confined Space Entry Procedure.
- **Working at Heights** – Any work conducted six (6) feet or higher above the walking surface requires the use of fall protection. This fall protection may include the installation of temporary or permanent guard or hand rails that are in compliance with Occupational Safety and Health Administration (OSHA) regulations or fall arrest equipment and capable anchorage points. This equipment must limit the free fall distance to < six (6) feet.
- **Lifting Operations** – Lifts utilizing cranes, hoists or other mechanical lifting devices will not commence unless an assessment of the lift has been completed and the lift method and equipment approved by a competent person.
- **Vehicle Safety** – Vehicles will not be operated for BP Wind Energy either commercial 'for hire' transportation services provided by third parties or rented/leased vehicles operated on BP Wind Energy business unless these vehicles meet all of the applicable state and federal requirements. Drivers of these vehicles will comply with all state and federal regulations and will not utilize mobile telephones, radios or other electronic devices while operating the vehicle with authorized exceptions. Exceptions include communication between heavy load escorts and drivers of vehicles being escorted. Any other exceptions will be specifically approved by the BP Wind Energy Lead HSSE Advisor. Vehicles will be fit for purpose. Seat belts will be utilized. All applicable state and/or federal laws governing the use of motor vehicles will be followed.
- **Management of Change (MOC)** – Work arising from temporary and permanent changes to organization, personnel, systems, process, procedures, equipment, products, materials or substances, and laws and regulations cannot proceed unless a MOC process is completed, where applicable.

### 3.0 Control of Work (CoW)

**CoW on the project site will be governed by the BP Wind Energy CoW Practice.**

**Purpose:** The purpose of this section is to define BP Wind Energy's CoW Procedure for the project. The site shall be operated under the BP Wind Energy Control of Work Policy and Business Unit (BU) Safe Work Practices.

BP Wind Energy reserves the right to implement an electronic PTW system at any point in the project.

#### 3.1 Authorities

**3.1.1 Area Authority (AA)** – Area Authorities will be the BP Wind Energy Site Construction Manager and his/her designees.

**3.1.2 Issuing Authority (IA)** – Issuing Authorities will be competent personnel meeting the requirements as indicated in other section of this plan or attached procedures.

**3.1.3 Performing Authority (PA)** – Performing Authorities will be the personnel conducting the actual work. All employees that are trained in the specific task will be considered performing authorities for that task.

**3.1.4 Person in Charge (PIC)** – A PIC will be required only when there are multiple crews working in one location. When it is required that multiple crews work in one location the foreman of the crew with the highest risk will be the PIC.

#### 3.2 Control of Work Registry / Control of Work Daily Meeting

The CoW Register will be maintained of all permitted activity scheduled for the day. This shall be updated as needed so that all permitted activities are visible at a glance by reading the registry. A daily Plan of the Day (POD) meeting shall be conducted any day that there are permitted activities ongoing. This is the best time to update the CoW Registry.

The AA shall review the following activities at a minimum in the daily CoW meeting:

- Higher risk work activity;
- Planned Simultaneous Operations (SIMOPs) activities; and,
- Unplanned SIMOPs activities.

If a work plan changes throughout the course of the day, the AA for that work activity shall be notified.

- a. **Registry** – The CoW Registry will be the daily POD Report which will list all permits expected to be issued for the day. It is preferred that the IA be listed for each permit.
- b. **Daily Meeting** – The Daily Meeting will be the POD meeting which will occur daily at an agreed upon time.
- c. **Permits** will be noted on a map by color of pin or other identified methodology or will be noted on an updateable dry-erase board located in the orientation/POD trailer.

## 4.0 Permit to Work

Some specific types of jobs on the construction will be governed by the use of a Cold Work Permit. Types of activities on previous projects that have required the use of Cold Work Permits have included heavy equipment moves, crane walks, pipeline crossings, and other activities at the discretion of the Site Construction Manager and the HSSE Lead. These activities are project specific and will be determined at the beginning of construction.

### 4.1 Ground Disturbance Permit

- The BP Wind Energy Ground Disturbance Permit will be utilized.
- Work that involves a man-made cut, cavity, trench or depression in the earth's surface formed by earth removal cannot proceed unless:
  - a. a hazard assessment of the work site is completed by the competent person(s)
  - b. all underground hazards, i.e., pipelines, electric cables, etc., have been identified, located and if necessary, isolated
  - c. one calls have been conducted in accordance with applicable state or local laws,
  - d. Ground Disturbance permits are required.

### 4.2 Hot Work Permit

- The BP Wind Energy Hot Work Permit will be utilized.
- Hot work permits will be required for any spark or flame producing activities in areas not specifically designated as safe for hot work.
- Federal (BLM, Reclamation), state, county or any other local fire restrictions requirements will be strictly adhered to. BP Wind Energy HSSE will monitor and advise if fire restrictions are implemented. See attachment RR.

### 4.3 Confined Space Permit

- The BP Wind Energy Confined Space Permit will be utilized.
- Entry into any confined space cannot proceed unless:
  - a. All other options have been ruled out
  - b. Permit is issued with authorization by a responsible person(s)
  - c. Permit is communicated to all affected personnel and posted, as required
  - d. All persons involved are competent to do the work
  - e. All sources of energy affecting the space have been isolated
  - f. Testing of atmospheres is conducted, verified and repeated as often as defined by the risk assessment
  - g. Stand-by person is stationed
  - h. Unauthorized entry is prevented

### 4.4 Critical Lift Permit

- The BP Wind Energy Critical Lift Procedure and permit will be utilized.
- Lifts utilizing cranes, hoists, or other mechanical lifting devices will not commence unless:
  - a. An assessment of the lift has been completed and the lift method and equipment has been determined by a competent person(s)
  - b. Operators of powered, lifting devices are trained and certified for that equipment
  - c. Rigging of the load is carried out by a competent person(s)
  - d. Lifting devices and equipment has been certified for use within the last twelve (12) months (at a minimum)
  - e. Load does not exceed dynamic and/or static capacities of the lifting equipment
  - f. Any safety devices installed on lifting equipment are operational

- g. All lifting devices and equipment have been visually examined before each lift by a competent person(s)

#### **4.5 Energy Isolation Permit**

- For all circuit, substation, interconnect, transmission line or other energization activities contractors will establish a specific checklist that references all applicable electrical components prior to energization. All other lockout tagout (LOTO) situations will be covered through site LOTO program
- Any isolation of energy systems; mechanical, electrical, process, hydraulic and others, cannot proceed unless:
  - a. The method of isolation and discharge of stored energy are agreed and executed by a competent person(s)
  - b. Any stored energy is discharged
  - c. A system of locks and tags is utilized at isolation points
  - d. A test is conducted to ensure the isolation is effective
  - e. Isolation effectiveness is periodically monitored
  - f. Energy isolation permits are required.

#### **4.6 Blast Permit**

- For all blasting, a permit will be required.

## 5.0 Competency Requirements

Each construction Contractor should establish and implement a documented process that provides employees with the necessary skills, knowledge, and certification to perform work in a safe and environmentally sound manner. This training includes employee/Contractor orientation, regulatory required training and craft skills training. In addition, the process should address Contractors by defining a method to communicate applicable site HSSE information. The level of training required should be based on the degree of inherent risks associated with the site and the complexities of the actions required to control or mitigate the particular risk. Measures should be in place to assess the competency of those trained and determine the effectiveness of the training programs. The system should include processes to effectively maintain training records.

Each employer will authorize their own competent persons and will provide BP Wind Energy with a document(s) describing the necessary training to be deemed a competent person. In addition, each employer will furnish the competent persons' training records upon request. A list of competent persons will be available for review in the site office.

There are many OSHA regulations that require the use of a competent or qualified person, and the designation of authorized individuals. Listed below are the standards and regulations that require these. They are included here because of a multi-contractor work-site.

### 5.1 Definitions:

<b>Authorized Person</b>	1926.32(d)	<i>“A person approved or assigned by the employer to perform a specific type of duty or duties or to be at a specific location or locations at the jobsite.”</i>
<b>Competent Person</b>	1926.32(f)	<i>“One who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has the <u>authorization</u> to take prompt corrective measures to eliminate them.</i>
		<i><b>Note:</b> This designation is the responsibility of the employer.”</i>
<b>Qualified Person</b>	1926.32(m)	<i>“One who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his ability to solve or resolve problems relating to the subject matter, the work, or the project.”</i>

**(Note:** A competent person can also be a qualified person, but a qualified person cannot be considered a competent person without proper training. The main distinction is that the competent person must have the authority to correct potentially hazardous conditions.)

## 5.2 Standards requiring a competent person

1926.20(b)(1) & (2)	Inspections
1926.53(b)	Radioactive materials
1926.62	Lead exposure
1926.101(b)	Ear protective devices
1926.251(a)(6)	Sling inspections
1926.354(a)	Welding on coated material
1926.404(b)(iii)[B]	Assured grounding
1926.451(f)(3)	Scaffolds
1926.451(f)(7)	Scaffold erection
1926.454(b)	Scaffolds
1926.500(b)	Fall protection
1926.502(k)	Fall protection plan
1926.503(a)(2)	Fall protection training
1926.550(a)(5)	Crane inspections
1926.550(g)(5)(iv)	Suspended personnel platform
1926.552©(15)	Personnel hoists
1926.651(k)(1)	Daily inspections of excavations
1926.651(k)(2)	Excavations
1926.652(a)(1)(ii)	Excavations
Subpart P appendix A	Classification of soil and rock deposits
Subpart P appendix B	Surcharge loads
1926.705	Lift slab operations of concrete work
1926.753©(1)(i) & (ii)	Cranes in steel erection
1926.753©(2)	Qualified rigger
1926.754(d)(1) & (3)	Plumbing-up of steel
1926.755(2)(4)	Guying and bracing of columns
1926.756(2)	Cantilevered members
1926.850(a)	Demolition operations
1926.1053(15)	Ladders
1926.1060(a)(1)	Ladders and stairways

## 5.3 Competency requirements for Issuing Authorities (IAs) - General

Generally, Issuing Authorities shall:

- Be responsible for the issuance of permits in their area of competency, i.e., hot work, confined space entry, ground disturbance, electrical (energy isolation), and lifting.
- Be on-site for completion and issuance of the applicable permit and remain onsite if required by the specific permit practice. If at any time the task is not being conducted in a safe and environmentally sound manner, the IA will stop the job and adjust the work process accordingly.
- Approve/accept and sign off on authorized permits for work activity being performed under their authority.
- Confirm that non-essential personnel are kept a safe distance from the work activity.
- Be trained in CoW, emergency response, hazard recognition/identification and risk evaluation as appropriate as well as all appropriate policies, practices and procedures that relate to all work they are accountable for as outlined below.
- Review with all site personnel a site specific emergency response plan, and confirm it is readily available at all times at the work site.
- Maintain full knowledge of all work in progress in the area concerned, including any work on the site that is under someone else's authority/control.
- Stop appropriate portions of assigned work and alert the PIC/AA if assistance is required to handle more than one concurrent task safely.

- Confirm clear and consistent communications between work groups occur as needed for the duration of the job.
- Confirm all site personnel involved in a work activity are competent and correctly outfitted for the work they will perform.
- Confirm workers have a clear understanding of the work scope, hazards, controls and mitigations.
- Confirm that the appropriate level of risk assessment has been carried out prior to any work activity and/or permit issuance and identified control measures have been addressed. Confirm all workers involved in the permitted work activity sign off on Job Safety & Environmental Analysis (JSEA) acknowledging their understanding and agreement of permit requirements. In the event that there is more than one work team, there shall be representation from each team during the risk assessment.
- Confirm the correct tools and equipment are available and appropriate certifications and/or inspections are reviewed or made as appropriate.
- Perform worksite inspections before, during (as appropriate), and after work is performed.
- Confirm that worksites are left in a clean and safe manner upon completion of work and remaining hazards have been appropriately addressed.
- Confirm that work undertaken on site is consistent with, and confined to, the original scope of work and that required permits are in place.
- Confirm appropriate JSEA and tailgate meetings have been conducted, all workers clearly understand the scope of work, the potential hazards, and the controls and mitigation actions that are, or will be, put in place to reduce risks.
- Confirm that all active permits are retained on site for the duration of the work, monitor performance under that permit, and confirm closure of the permit.

#### **5.4 Hot Work Permit Authorization Requirements**

##### **5.4.1 Area Authority**

- Familiarization with the CoW and Permitting Process

##### **5.4.2 Issuing Authority**

- Trained in the BP Wind Energy Hot Work Permit Process.
- Must have an understanding of controlling combustibles, flammables, etc.
- Training in the use of portable gas detectors (when applicable).
- Understanding of fire resistant clothing (when applicable).
- Must have successfully completed the Hot Work Competency evaluation.

##### **5.4.3 Employee(s) Performing Hot Work**

- Familiar in the BP Wind Energy Hot Work Permit Process.
- Must have an understanding of controlling combustibles, flammables, etc.

#### **5.5 Confined Space (See also section 16.2)**

##### **5.5.1 Area Authority**

- Familiarization with the CoW and Permitting Process

##### **5.5.2 Issuing Authority**

- Training in the Confined Space Permit Requirements
- Training in All Applicable Standards and Regulations including 29CFR1910.146 or applicable Part 1926 standards
- Training in the use of portable gas detectors
- Familiar with Confined Space Rescue

- Depending on the individual job specific responsibilities, judged competent as an entry supervisor and able to verify others involved are also competent. This would include entrants, attendants, atmospheric testers, rescue, etc.

### **5.5.3 Confined Space Entrant(s)**

- Training in the Confined Space Permit Requirements
- Training in All Applicable Standards and Regulations including the requirements of 29CFR1910.146 or applicable Part 1926 standards.
- Training in the use of portable gas detectors
- Confined Space Rescue Training

## **5.6 Energy Isolation Permit Authorization Requirements**

### **5.6.1 Area Authority**

- Familiarization with the CoW and Permitting Process

### **5.6.2 Issuing Authority**

- Training in the LOTO Procedure
- Energy Isolation Permit Training

### **5.6.3 Authorized Employee(s)**

- Training in the LOTO Procedure
- Energy Isolation Permit Training

## **5.7 Electrical Competencies**

Employees who may be working on or near exposed energized equipment must be trained to become qualified to work on the equipment. This training includes:

- Training in site LOTO process
- Skills and techniques necessary to distinguish exposed live parts from other parts of electrical equipment.
- Skills and techniques necessary to determine the nominal voltage of exposed live parts.
- Clearance distances specified in the program and the corresponding voltages to which exposure will result.
- When the work will involve either direct contact or contact by means of tools or materials, qualified persons must also have training on proper use of precautionary techniques, personal protective equipment, insulating and shielding materials, and insulated tools.

## **5.8 Ground Disturbance**

### **5.8.1 Area Authority**

- Familiarization with the CoW and Permitting Process

### **5.8.2 Issuing Authority**

- Training in the Ground Disturbance Practice and Permit Requirements
- Excavation Competent Person Training (29CFR1926 Subpart P)
- Must have successfully completed an excavation / trenching competency evaluation.

### **5.8.3 Employee(s) Performing the Ground Disturbance**

- Training in the Ground Disturbance Practice and Permit Requirements
- Any Applicable Equipment Operation Training

## **5.9 Lifting**

### **5.9.1 Area Authority**

- Familiarization with the CoW and Permitting Process

### **5.9.2 Lift Leader Competency (IA)**

- Lift leaders shall be trained to the level of competency consistent with their assigned role. To be competent as a lift leader, the person shall:
- Be designated as a competent Lift Leader by their employer,
- Understand the requirements associated with rigger/signal person and crane/hoist operator,
- Complete/pass a formal lifting training program or equivalent,
- Understand the IA position responsibilities, and
- Have responsibility for the issuance of the lifting permit.

### **5.9.3 Crane Operator Competency (PA) 1926.1427**

To be competent as a crane operator, the person shall:

- Meet the requirements of the applicable OSHA standard
- Be designated as a competent operator by their employer to operate cranes,
- Possess certification as required by jurisdictional agency,
- Meet the requirements of a competent rigger and signal person,
- Verify completion of an actual or simulated practical operating skill evaluation test for the specific type of equipment to be operated,
- Verify the operator has demonstrated the ability to read and comprehend load capacity charts in the language of the crane manufacturer's operation and maintenance instruction materials,
- Verify satisfactorily completion an evaluation on load chart usage that covers a selection of the operating configurations for the specific type of equipment,
- Verify the operator has demonstrated knowledge of inspection requirements for equipment, including safety devices, being operated,
- Demonstrate knowledge of the PA position, and
- Act as the PA.

### **5.9.4 Rigger/ Signal Person Competency (PA)**

To be competent as a rigger, the person shall:

- Meet the requirements of the applicable OSHA standard
- Be designated as a competent rigger by their employer to perform rigging activities,
- Complete a formal rigging training program or equivalent,
- Demonstrate the ability to read and comprehend sling capacity charts,
- Demonstrate the ability to perform the pre-use, initial, and annual rigging inspections as described in this Practice,
- Demonstrate knowledge of the PA position, and
- Act as the PA.

## **5.10 Blasting**

### **5.10.1 Area Authority:**

- Familiarization with the CoW and Permitting Process

### **5.10.2 Issuing Authority:**

- Familiarization with the Mohave Blasting Plan

## **6.0 JSEA / Risk Assessment**

### **6.1 JSEA**

The purpose of the JSEA is to protect the health and safety of all our employees and to protect the environment. The JSEA is considered an important accident prevention tool that works by finding hazards and eliminating them before the job is performed. A JSEA is required to validate that the inherent risks discussed in the JSEA are actually being experienced and any additional risks noted and mitigated. The Contractor crew shall develop a JSEA and complete it at the Job Site. Upon completion of the JSEA, all employees assigned to the task, prior to work beginning, shall review and sign it. During the review of the JSEA, employees are encouraged to offer any input they may have to ensure a safer working environment.

Pre-populated JSEA's showing basic information and equipment for the task are allowed but site specific information must be added and covered at the task location.

Contractors may, with the specific approval of BP Wind Energy HSSE, utilize internal forms such as job hazard analysis (JHA's) as long as the format meets or exceeds BP Wind Energy's.

### **6.2 Risk Assessment**

#### **6.2.1 Type I Risk Assessment**

- All Type I Risks will be assessed through the JSEA or equivalent.
- A Type I Risk Assessment (JSEA, JHA) shall be completed for nearly every work activity performed on the project. Work activities that are not subject to JSEA/JHA requirements are not required to have a risk assessment completed, but one may be completed if personnel involved in the work activity determine the need for one.

#### **6.2.2 Type II Risk Assessment**

- All Type II Risks will be assessed through issuance of the applicable permit in conjunction with the JSEA or equivalent.
- A Type II Risk Assessment shall be completed for permitted activities and when the AA, IA, or PA determine that a significant risk is present and should be managed with a greater level of scrutiny or when required by procedure such as critical lifts. When a Type II Risk Assessment is required, a Type I Risk Assessment must also be completed. A type II Risk Assessment is considered fulfilled by the completion of the permit applicable to the job.

#### **6.2.3 JSEA/JHA**

- A JSEA/JHA will be considered as the authorization for any work activity registered in the Daily CoW Registry that does not require a permit be issued.
- All work permits and JSEA's/JHA's shall be valid for no more than one shift.

## 7.0 Project Health, Safety, Security & Environmental (HSSE) Policy–STOP Work Authority (SWA)

It is the policy of the BP Wind Energy Project Team to be a good neighbor to the citizens and businesses in and around the Project. BP Wind Energy will not compromise its values concerning the safety of personnel and the protection of the environment. These critical areas take precedence over all other business pursuits in that requiring employees and contractors to follow established safety policies while protecting the environment demonstrates our values as an organization.

The project and construction managers have the ultimate responsibility for the Project HSSE Process. They will demonstrate their commitment to the HSSE Process by participation in; but not limited to, project safety orientations, pre-task safety meetings, safety observations and safety coaching sessions.

Each employee, Contractor and Sub-Contractor is responsible for providing and maintaining a safe and healthful work environment where all hazards and unsafe acts are identified, analyzed and eliminated. BP Wind Energy has empowered all personnel to “**STOP WORK**” when they feel that they, a coworker or the environment may be in danger. The Project Management Team is responsible and accountable for the safety and safe work conduct of all employees of the Project. Each employee is expected to comply with established safety & environmental practices and procedures, use the safety equipment, proper tools and devices provided, and act in a manner which assures their safety and that of their fellow employees while protecting the environment. All personnel are responsible to assist in the jobsite safety & health program by participating in training activities and STOP any unsafe act, practice, procedure or condition observed and reporting it to their superior or BP Wind Energy Representative. A personal commitment to participate in this program is expected and is a key condition to the success of the project.

## 8.0 BP Wind Energy's Influence on Contractor Safety Activities

### 8.1 Program Administration

- All personnel will follow project safety policies and procedures when on project sites.

### 8.2 Owner Responsibility

BP Wind Energy reserves the right to audit contractors and with requested representation of the Contractor, audit Sub-Contractors at appropriate time intervals. Additionally, BP Wind Energy may provide field observations of Contractor or Sub-Contractor activities.

BP Wind Energy will participate, and will have an active role, in Contractor's site safety management program. This will include activities such as site visits, reviews of Contractor's safety procedures to ensure conformance to BP Wind Energy's minimum requirements, safety meeting attendance, participation in site safety auditing and sharing of safety learning's and incidents from other sites.

The BP Wind Energy Contractor Management Practice will be adhered to on each project. The purpose of this Practice is to ensure that Contractor and Sub-Contractor operations are conducted with adequate HSSE systems and practices. This Practice establishes how BP Wind Energy evaluates and reinforces Contractor HSSE performance improvement. BP Wind Energy will review Contractor HSSE performance and practices before establishing a contract and commencing Contractor operations.

The Contractor must make certain that their Sub-Contractors recognize and execute the work safely in accordance with the site specific safety & environmental plans.

Sub-Contractors should be selected based on the following criteria:

- Past safety performance
- Safety attitude
- Present programs and practices
- Ability to achieve expected safety performance
- Degree of Contractor's involvement necessary to meet safety standards and, if awarded, what they will be required to do
- Level of involvement of Sub-Contractor management in safety
- Present a signed construction safety program for review, which incorporates the project safety requirements.
- Designate a responsible, knowledgeable supervisor/staff to coordinate safety on site.
- Attend and participate in joint Contractor/Sub-Contractor meetings to be held prior to and during construction.
- Participate in safety audits during construction
- Establish, along with Contractor, lines of communication at all levels, so that safe work practices are understood and implemented by both parties.

Sub-Contractor Selection:

- After the award of the Balance of Plant (BOP) and Turbine Supply Contracts, the Pre-qualification data of the "proposed" Sub-Contractors, as well as their Sub-Contractors shall be submitted to BP Wind Energy Houston for review and approval.
- This review shall be completed by BP Wind Energy third party contractor, PIC's and each Sub-Contractor shall be classified according to the following three groups:
  - a. Acceptable – Total Recordable Incident Rate less than 2.0
  - b. Marginally Acceptable – Total Recordable Incident Rate of 2.0 to 5.0

- Any marginal Sub-Contractors shall be controlled with a detailed Safety & Health Improvement Plan (SHIP) document detailing all necessary risk prevention countermeasures that shall be put in place prior to starting the project and be approved through the use of an MOC approved by the BP Wind Energy VP – EPC (Engineering Procurement Construction).
- c. Unacceptable – Total Recordable Incident Rate greater than 5.0
- Not to be used on project without special considerations and an MOC approved by the BU Leader.

## **9.0 Safety Management System and General Requirements**

### **9.1 Getting Safety Kicked Off**

- Immediately after the award of the BOP contract, an up to three (3) day meeting may be held if requested by the BP Wind Energy.
- This meeting may be used to:
  - a. Set safety expectations and key performance indicators, Weekly safety observation targets, come to resolution on the Safety Management System that will be used, and discuss the safety support structure for the project,
  - b. Conduct a CoW Gap Analysis if necessary,
  - c. Discuss Incident Investigation methodology,
  - d. Discuss the BP Wind Energy Contractor Selection and Approval Process,
  - e. Discuss a safety incentive/recognition program,
- This meeting should be attended by selected members of the BP Wind Energy Project Team, BP Wind Energy Projects HSSE Manager, BP Wind Energy Onsite HSSE Advisor(s), Contractor Safety Director, Contractor On-Site Safety Advisor(s). (BOP and Turbine Supplier at minimum) and others as required.
- The length of this meeting will be determined by the BP Wind Energy and may be based on many factors including whether the applicable contractor has worked for BP Wind Energy before.

### **9.2 Safety Incentive System:**

- A formal safety incentive system may be developed in conjunction with the BOP Contractor and discussed in general terms at the pre project meeting referred to in section above. The incentive program will NOT be based on the completion of days or hours without an accident occurring. Rather, the incentive program will be based on the completion of value added activities to be determined at this meeting or on the project site at the beginning of operations.

### **9.3 Site Communication: Under the Control of BP Wind Energy**

- At the beginning of the project, a site wide radio system with a dedicated private HSSE frequency (s) will be put in place and each HSSE professional will be given a site radio for on-going communication. All contractors will operate under a single radio system which BP Wind Energy will be provided access to. There will be a dedicated HSSE channel for HSSE professionals, secured. There will be a dedicated secure owner's channel. The radio system will be in place within a week of beginning of civil activities past the lay down yard. The radio system shall be capable of reaching the entire project site. Each work crew will have a portable radio with them for notification of emergencies.
- BP Wind Energy reserves the right to install the radio system for use. Contractors may be required to supply compatible radios or rent from a BP Wind Energy specified radio supply company.
- If any Contractor elects to utilize their own radio system, it shall be compatible with the site wide system. Contractor shall provide frequencies to BP Wind Energy. BP Wind Energy reserves the right to program such frequencies onto BP Wind Energy radios.

### **9.4 Site Craft Safety Committee:**

- Within a suitable time period of the start of field activities, and as determined by the BP Wind Energy HSSE professional(s) and Site Manager, a site craft safety

committee shall be formed. This committee shall be provided paid time to meet for approximately two (2) hours bi-weekly to discuss safety progress and issues on the site from the craft workers perspective. This committee will be chaired and facilitated by a selected member of the BOP Contractor.

- To encourage participation:
  - Each meeting should be scheduled to start at approximately 11:00 a.m. and end at 1:00 p.m.
  - A suitable meeting room (such as a conference room in a project trailer) shall be provided.
  - Lunch shall be provided by the project delivered to site to facilitate the meeting.
- At the end of each meeting, the HSSE Administrative Assistant shall prepare minutes of the meeting, which will then be distributed to all onsite HSSE advisors and Site Managers for follow up corrective actions.

#### **9.5 Safety Observations**

- Prior to start of the project, Safety Observation systems shall be established and agreed upon.

#### **9.6 Routine HSSE meetings**

- POD Meeting
  - Each POD meeting shall begin with a safety discussion covering (at minimum) the following topics:
    - a. Recognition of exceptional safety performance
    - b. HSSE incidents (injury, near miss, spills, etc.) of the previous day
    - c. Related HSSE incidents from other projects ongoing with owners, Contractors, and Sub-Contractors.
    - d. Safety statistics from the Safety Observation Process
    - e. These discussions will be led by the BP Wind Energy Manager or his/her designee.
- Periodic to Daily:
  - As determined by the BP Wind Energy HSSE Lead as to time and frequency, the Site Safety HSSE personnel shall meet to discuss the daily project status. These meetings will begin at the discretion of the BP Wind Energy HSSE Advisor.
  - Action items shall be discussed and assigned with respective due dates, if applicable.
- Weekly:
  - To include the site BP Wind Energy and BOP Construction/Site Managers at the discretion of site management.

## 10.0 HSSE Reporting System

All Incidents will be reported immediately to the BP Wind Energy Project HSSE Advisor via radio/cell phone as soon as possible after occurrence.

The BP Wind Energy Project HSSE Advisor will provide guidance regarding response, medical case management, etc.

All incidents involving personal injury, property damage, and environmental issues such as spills, archeological finds, security issues, vandalism, property damage, vehicle incident, near misses and the like will be immediately reported.

Each Contractor employee is encouraged to report near misses when they occur. Regardless of how minor they may appear, they should be reported immediately (prior to the end of the shift of occurrence) so that corrective action can be taken and the hazard safe-guarded.

The Project Site Safety Management team encourages employee participation in safety & health and views a quality near miss as a positive contribution to the health and safety of the project.

Near miss analysis are not meant to place blame but by using the information gained and lessons learned can possibly prevent a more disastrous accident from occurring.

The severity of any incident will be jointly determined in accordance with Owner/Contractor safety and management representatives. Contractor will provide sufficient information in order to satisfy Owner's TR@CTION incident reporting system. All records and other pertinent information pertaining to the incident will be documented and provided upon request including written reports, drawings, statements, photographs, etc.

Contractor will ensure a methodology is in place to share results of incident investigations and lessons learned with all onsite personnel to the extent the incident may apply to them.

All Contractors shall provide a written report to BP Wind Energy within twenty-four (24) hours of any incident. This could be an initial report only if further investigation is necessary.

### 10.1 HSSE Incident Investigation

- All investigations will be completed by a collaborative team to include BP Wind Energy based on principles and requirements, established during the Safety Kickoff Meeting. At the discretion of BP Wind Energy, the investigations will be BP Wind Energy lead.

### 10.2 Injury Case Management:

- Prior to the start of the project, an Occupational Clinic shall be designated as the initial injury care clinic for all workers on the project.
- All Contractors and Sub-Contractors will agree to use this clinic for treatment/diagnosis of non-life/limb threatening injuries that occur on site.
- Axiom Medical Consulting will be utilized for medical case management on work related injuries. All Contractors shall participate. Any exceptions shall be approved by the BP Wind Energy HSSE Director.
- Life and/or limb threatening injuries shall be treated appropriately (911, emergency room, etc.).

- There will be a medical service provider on the jobsite. BP Wind Energy typically utilizes a registered nurse or paramedic to provide these services. The specific provider will be identified and selected as the project begins the construction phase.

All determinations regarding the recordability of an alleged incident will be made in accordance with the OSHA Recordkeeping Handbook (OSHA 3245) and will be logged on the relevant employer's OSHA 300 log, as required by Federal law.

- Under the federal Health Insurance Portability & Accountability Act of 1996, certain health information is private and protected. Notwithstanding, Owner does not seek any such protected information. Rather, Owner wants to know information pertaining to any alleged occupational injuries or illnesses that may have occurred on the Project Site. Contractor and Sub-Contractors are similarly advised not to provide protected information to Owner unless the employee who has claimed an occupational injury or illness has signed a medical release authorizing the exchange of any information considered to be protected and a signed copy of this release is on file with the employer.

## 11.0 Emergency Response/First Aid

Prior to the start of the project, the respective BOP, Turbine (if available), and BP Wind Energy HSSE staff may meet and complete development of a comprehensive Emergency Response Plan meeting with the minimum philosophy below:

- Method and plan for response to all injury incidents
- Method and plan for response to all environmental incidents
- Plan for an on-site Medical Provider through the life of the construction project.
  - This may involve the staffing of a contract EMS service with an associated ambulance to provide triage and transportation of life threatening injuries from the site to the nearest medical facility.

Designation of global positioning system coordinates for med-flight pickups for injuries of serious nature, where ambulance transportation is not prudent.

- In order to establish these coordinates, a meeting will be held with the nearest med-flight trauma center, including an on-site visit by the operations manager or designee.

Emergency response drills shall be conducted at time periods specified by BP Wind Energy. Generally, at a minimum there will be one drill during civil activities and one drill during erection activities.

The emergency response plan should include, at a minimum.

- a. Medical Emergency
- b. Property Damage
- c. Fire
- d. Chemical Release or Spill
- e. Pipeline Release
- f. Tower Rescue
- g. Weather
- h. Evacuation Procedures
- i. Bomb Threats
- j. Suspicious Packages / Mail

## 12.0 Department of Transportation (DOT) / Driving Safety

### 12.1 Entrance to the Site (existing highway/ traffic systems and restrictions)

Prior to the start of each project, a DOT safety review will be conducted, by a BP Wind Energy 3<sup>rd</sup> Party Organization, of selected Contractors on the project site, with findings shared with all applicable Contractors and Sub-Contractors working on the project.

- All workers on the project are required to follow all applicable prescriptive corrections suggested as a result of this DOT safety review.

Site access road speed limits will be 25 miles per hour (mph) unless conditions warrant slower speeds. When driving at night is required, the night speed limit on turbine access roads shall not exceed 15 mph.

The BP Wind Energy Driving Safety Standard shall be followed on all projects and for all drivers, including short term service delivery (dump truck drivers, turbine delivery drivers, etc.) with a few exceptions:

- Specific areas that should be recognized include:
  - All contract employees who are to drive on the project shall complete (or have completed within the last three (3) years) a recognized defensive driving course before being allowed to drive or an expanded section of the site orientation program shall be dedicated to driving safety.

All project drivers shall be given training on the BP Wind Energy Driving Safety Standard during orientation, before being allowed access to the project.

A driving history check shall be conducted of all employees required to drive either company or personal vehicles on the project site.

- The acceptable conditions for driving include (but not limited to):
  - No Type A violations in the past three (3) years
    - a. Type A violations Include:
      - i. Driving while intoxicated
      - ii. Driving under the influence of drugs
      - iii. Negligent homicide arising from the use of a motor vehicle
      - iv. Operating with a suspended license
      - v. Using a motor vehicle to commit a felony
      - vi. Aggravated assault with a motor vehicle
      - vii. Reckless driving
      - viii. Hit and run driving
  - No more than three (3) Type B Violations within the past eighteen (18) months
    - a. Type B Violations include all moving violations not listed as Type A violations above.
  - Licensed to operate the class of vehicle, in accordance with the laws of the given state(s) of the project location.
  - A program shall be put into place requiring all employees to immediately report any motor vehicle violations (project and not project related) to their supervisor immediately after occurrence.
  - Driving records shall be routinely checked by each Contractor through the life of the project as a method of auditing compliance with Item #34. These records shall be available for review by the site owner as requested.

Employees who are qualified to operate a vehicle, should be given some type of certificate or designation (hard hat sticker) to verify through field audits, that all drivers are meeting the specifications of this section. Employees, who fail to meet the qualifications for driving on the project, shall be required to report to work at a designated parking area, and then be transported by a qualified driver to the given worksites.

Radar guns shall be in place along with a driving observation/audit checklist at the beginning of the project and randomly throughout the project to insure compliance with site speed requirements.

All sub-contracts shall be structured to pay delivery drivers by the hour instead of by the mile or load, to eliminate the incentive to rush or speed.

All BP Wind Energy trucks shall have the name of the company on the both sides of the truck along with an individual number. The logo shall be visible from five-hundred (500) feet. The individual number shall be, at a minimum, six (6) inches in height.

All project vehicles shall be equipped a flashing yellow strobe to enhance visibility unless specifically prohibited by state or local laws visible from five-hundred (500) feet. The preferred location is on the top of the vehicle; however judgment should be used to place the strobe in a location on the specific vehicle that provides maximum visibility. In the event of dispute, the BP Wind Energy Project HSSE Advisor will have the final determination.

Lever chain binders will not be allowed on the project site. All delivery drivers, over which the project has no control, that arrive onsite with lever chain binders securing their loads will be required to remove the binders themselves. Only ratchet type chain binders will be allowed.

Prior to beginning transportation activities, a Site Specific Transportation Plan must be developed. This plan shall include, at a minimum:

- Turbine Deliveries
- Concrete Trucks
- Aggregate Trucks
- Appropriate Signage
- One-Way Traffic Routes (Where Applicable)
- School Bus Routes

If concrete is being placed at night, the route that the concrete trucks will be required to take must be pre-driven by a representative of the BOP Contractor as well as a representative of the concrete supplier. All hazards identified during the pre-drive must be removed or mitigated prior to concrete placement. The Concrete Truck Route

Inspection form will be utilized in conjunction with a Cold Work Permit signed by a BP Wind Energy employee unless otherwise designated by the BP Wind Energy Site/Facility Manager.

All vehicles must be inspected daily.

All heavy equipment must be inspected prior to use and documented by the operator.

Radar detectors will not be allowed onsite.

Concrete trucks will be equipped with fall protection or fall prevention on the wash out platform if in excess of 6'.

Concrete truck drivers shall have a minimum of two (2) years' experience driving a concrete truck unless otherwise specified by the BP Wind Energy Site/Facility Manager. It is strongly recommended that other commercial driver license (CDL) drivers have at least one year of CDL driving experience with the type of vehicle to be driven on the project.

### **12.2 Use of All Terrain Vehicles (ATV) and Off Road Driving**

The BP Wind Energy ATV Use Policy (attached) will be followed.

ATV's will be utilized only with the direct expressed permission of the BP Wind Energy Site Construction Manager or his/her designee. Drivers/operators will be trained in accordance with the BP Wind Energy procedure. Helmets/Hard Hats with chin straps will be utilized. ATV's will be equipped with seat belts and they will be utilized whenever the vehicle is in motion.

ATV's, if utilized, will be operated only on existing roads or other disturbed areas such as turbine pads, laydown yards, etc.

### **12.3 Vehicle Parking**

The BOP Contractor shall designate car-parking areas at the site office location or other areas to be designated by the BOP Contractor's Project Manager in consultation with the BP Wind Energy Site Construction Manager. All vehicles must be reversed into the parking spot they've chosen or arrange their vehicle in a way that will allow the operator to pull out of the space in a forward direction.

## 13.0 Security System

Security issues will be addressed prior to mobilization. Site Security may include, but is not limited to: a reading card system that tracks employees entering and leaving the work site and approximate number of vehicles onsite, security guards, cameras, and vehicle, tool box or lunch box inspections upon entering or leaving the work site. BP Wind Energy assumes no responsibility for theft of Contractor procured materials or personal property.

### 13.1 Security

- Prior to start of the project, a Security Review may be conducted by the BP Wind Energy SPA (Single Point of Accountability) for security, and recommendations provided shall be implemented.
- Contractor shall be responsible to provide security for the Project Site for all hours during which work is not being performed at the Project Site, unless otherwise specified by the contract.
- All Sub-Contractors are to leave the work in a condition that will not give rise to a safety risk to members of the public on the site (whether authorized or unauthorized) and are to protect their materials, equipment and the Works against theft and vandalism.
- Employees are expected to use common sense and good judgment when assessing the threat potential of any suspicious activity. Employees will be expected to report any observed or suspected suspicious activity or theft to their supervisor/foreman immediately. In the event of a security breach which results in immediate danger, then local law enforcement officials shall be summoned in accordance with the site's Emergency Response Plan (**Appendix D of Attachment J**).
- We will manage the Mohave site security to the following guidelines:
  - All visitors will be required to check in before proceeding with their business. All visitors will be orientated on the General Job Site Safety Rules. All visitors must be escorted at all times, until the Site Orientation Training is complete. There will be a prominent sign posted at the laydown yard entrance which instructs all visitors where to report.
  - Employees shall approach visitors or unfamiliar persons that are in unauthorized areas, and/or those visitors without the appropriate personal protective equipment (PPE), and refer such visitors to the BOP Contractor and/or BP office trailers.
  - All connex's, gang boxes, pickups, equipment, turbines, fuel sources and fenced areas will be locked when not in use and during off-shift hours.
  - The BOP Contractor will provide a roaming Security Officer during off-shift hours.
  - Copper and inductor will be stored in a secured location.
  - No photos are allowed without proper clearances from BP Wind Energy project management.
  - All security events will be reported to OWNER immediately.

#### **14.0 Selection of Personnel**

Selective hiring of employees who can safely perform all assigned work is mandatory. This is accomplished through pre-employment screening and careful, thorough, systematic consideration of the applicant's capabilities. This is based strictly on the physical job requirements and the hazards of related tasks. Where a training solution and/or a reasonable accommodation for the physically handicapped are possible, they shall be provided.

All personnel assigned to the project jobsite are required to be drug and alcohol free as indicated in the Substance Abuse Policy and screening guidelines. Pre-employment, random, for cause, and post-accident testing is required.

Applicants are evaluated as to their craft skills and experience prior to screening and hired/placed according to their skill levels. Those applicants meeting these requirements must also complete the project safety orientation as part of pre-hire processing.

## **15.0 HSSE Personnel Requirements**

### **15.1 Site Safety Organization**

Each BOP, Turbine Supplier Contractor, and Sub-Contractor HSSE Advisors shall function as one unit, under the general leadership of the BP Wind Energy on-site HSSE Advisor.

Each Sub-Contractor shall be required to provide HSSE support generally in accordance with the following structure after discussion with The BP Wind Energy HSSE Advisor/Manager:

- Less than 25 employees – no dedicated HSSE advisor required
- 25-50 employees – one (1) dedicated HSSE Advisor
- 50-100 employees – two (2) dedicated HSSE Advisors
- Over 100 employees – three (3) dedicated HSSE Advisors
- This formula may be modified as a result of the MOC for sub-par HSSE performance from Contractor – see above)

The project shall be staffed by one HSSE Safety administrative assistant. (To be provided by the BOP Contractor)

Contractors and their Sub-Contractors are required to submit the resumes of ALL designated safety personnel for BP Wind Energy's approval before selection. BP Wind Energy will either approve or disapprove of the proposed HSSE representative.

## **16.0 BP Wind Energy's PM Responsibility**

The BP Wind Energy Project Manager is responsible to provide adequate resources and top management support for necessary loss prevention activities. BP Wind Energy's Site Management Representatives are also responsible to identify when the Contractors' activities need to be changed or adjusted to ensure safe work execution from project inception to completion.

## **17.0 Management of Change**

BP Wind Energy engineering is accountable to ensure that MOC procedures are followed before the work is completed. The BP Wind Energy representative will ensure applicable MOC requirements are met.

## 18.0 Business Unit HSSE Procedures

The following sections generally reference stand-alone procedures that are required on all BP Wind Energy project sites. The procedures can be found, in their entirety, in the attachment referenced in each section.

### 18.1 Barricade and Barrier Requirements (Attachment M)

The purpose of this policy is to identify situations requiring a Barricade or Barrier to prevent personnel injury and/or equipment damage.

This procedure will provide minimum requirements for acceptable types of Barricades and Barriers. Access to areas with hazardous activities or unsafe conditions will be restricted. These situations require the use of Barricades, Barriers, caution/danger tape, and/or signage.

### 18.2 Confined Space Entry (Attachment O)

The purpose of this procedure is to establish the minimum requirements for personnel to follow when conducting confined space entry work. This procedure addresses the requirements that must be implemented under routine confined space entry and/or potential situations where confined spaces may meet the OSHA requirement for entry as a permit-required confined space.

This procedure addresses permit-required, alternative entry and non-permit-required confined space entries and is intended to:

- Prevent unauthorized and unintentional personnel entry into a confined space, and;
- Confirm safe entry into, and work within confined spaces by authorized personnel and emergency rescue services.

This procedure is applicable to all BP Wind Energy employees and Contractors who enter confined spaces, prepare confined spaces for entry, or provide emergency rescue services in confined spaces at all BP Wind Energy locations.

This procedure does not apply to “Non-Operational” Construction sites. These sites will utilize the confined space procedures of the General Contractor as long as those procedures meet or exceed the requirements outlined in this procedure.

Examples of confined spaces at BP Wind Energy locations may include but are not limited to:

- Wind turbine blades,
- Rotor hub,
- Main Power Transformer(s)

### 18.3 Working at Heights (Attachment P)

The purpose of this HSSE Procedure is to establish minimum requirements for the use of fall prevention measures, fall protection equipment, and systems to protect employees exposed to fall hazards while working at BP Wind Energy facilities.

This procedure applies to all employees and Sub-Contractors' employees exposed to fall hazards, while working at the same level, at elevated levels, and near excavations, pits, or shafts.

**18.4 Electrical Safety (Attachment Q)**

This procedure specifies minimum requirements for the control of electrical energy and should be used in conjunction with Energy Isolation (LOTO and isolation) procedures.

**18.5 Environmental Management (Reserved)**

Reserved.

**18.6 Forklifts and Powered Industrial Trucks (Attachment Y)**

The purpose of this procedure is to provide guidelines for the prevention of injuries and illnesses where Powered Industrial Trucks are used and to ensure these types of equipment are safely operated, properly maintained, and employees are trained in their use.

This procedure is based on the OSHA requirements of 29 CFR 1910.178.

The requirements of this procedure applies to all BP Wind Energy operated and/or controlled sites

**18.7 Assured Grounding (Attachment EE)**

All portable electrical equipment shall be equipped with or protected by a Ground Fault Circuit Interrupter (GFCI) or grounded.

All non-battery powered tools, extension cords, GFCIs, and ladders must be marked must be inspected monthly, at a minimum, and marked according to the below colors.

Monthly color inspections:

<b>Month</b>	<b>Color</b>
January	White
February	White & Yellow
March	White & Blue
April	Green
May	Green & Yellow
June	Green & Blue
July	Red
August	Red & Yellow
September	Red & Blue
October	Orange
November	Orange & Yellow
December	Orange & Blue
Repair	Brown

**18.8 Chemical Hazard Communication Program (Attachment FF)**

This procedure outlines information on the OSHA Hazard Communication Standard which regulates chemical substances that present a potential hazard to workers. Workers covered by this standard need to know:

- The properties of any hazardous chemicals at the facility.
- The location of hazardous chemicals at the facility.

- How to determine necessary precautions for protection from hazardous chemicals. Actions and information required when bringing a new chemical into their facility.

This program does not apply to the use of chemicals in the same manner and quantity as by a normal consumer and Food and Drug Administration regulated products.

#### **18.9 Personal Protective Equipment (Attachment GG)**

This procedure describes the minimum PPE requirements for BP Wind Energy employees and Contractors.

Engineering and administrative controls should be implemented, where possible, before PPE is used.

This procedure is not intended to replace the requirement for a risk assessment process, which identifies additional PPE required for a task, e.g., high voltage work, welding, working at heights, and specialty chemical exposures.

#### **18.10 Respiratory Protection (Attachment HH)**

This procedure provides the requirements for protecting personnel in environments with potentially harmful airborne contaminants and low oxygen concentrations. The first line of defense against harmful atmospheres is the use of engineering and administrative controls. Where such methods are not feasible, personnel shall use Respiratory Protection as outlined in the OSHA Respiratory Protection Standard [1910.134](#). The medical evaluation procedures to determine a worker's ability to wear a respirator are outlined in 1910.134 (e)(2).

#### **18.11 Scaffolding (Attachment II)**

This procedure establishes the basic safety requirements and safe work practices for the erection, use, inspection, and/or dismantling of scaffolding.

This HSSE Procedure applies to all BP employees and on-site Contractors performing work on BP Wind Energy sites.

#### **18.12 Compressed Gas (Attachment JJ)**

The purpose of this procedure is to establish the requirements for the prevention of injuries and illnesses to employees who handle, store or use compressed gas cylinders.

This procedure applies to all employees and on-site Contractors engaged in activities occurring on BP Wind Energy sites.

#### **18.13 Hot Work, Safe Welding, and Burning (Attachment KK)**

The purpose for the BP Wind Energy Hot Work procedure is to establish the minimum requirements for personnel to follow when conducting Hot Work activities.

Permitting of Hot Work activities is a key component in controlling work on a location.

This procedure is applicable to all BP Wind Energy employees and BOP Contractors that intend to perform Hot Work activities on BP Wind Energy premises.

Operations and Maintenance (O&M) agreements require that permanent on-site Contractors have a Hot Work procedure that meets or exceeds the requirements of the BP Wind Energy Hot Work procedure. If the Contractors' agreement does not meet this requirement, the Contractor must default to and follow the BP Wind Energy Hot Work procedure.

#### **18.14 Flammable and Combustible Liquids (Attachment LL)**

This procedure provides the minimum requirements to be followed for the storage of flammable or combustible materials in the workplace.

It applies to all employees and on-site Contractors engaged in operations covered by BP Wind Energy HSSE procedures.

#### **18.15 Medical Case Management (Attachment MM)**

This procedure establishes the minimum requirements for BP Wind Energy employees and Contractors that are impacted by injury or illness at a BP Wind Energy managed site.

It is intended to ensure effective and timely decisions regarding treatment, securing medical attention, care transportation, and return to work practices.

This procedure applies to all BP Wind Energy employees, contract employees and Contractors at all BP Wind Energy managed sites.

#### **18.16 Simultaneous Operations (Attachment NN)**

This procedure outlines the processes and general plan for conducting SIMOPS so as to provide for the safety of personnel and protection of the environment and equipment.

SIMOPS shall be coordinated through joint planning efforts by the separate operations, such as development, construction, and operations managers/supervisors/engineers who plan and direct activities.

This procedure applies to all BP Wind Energy managed facilities and sites.

This procedure shall be used as a minimum. Supplemental plans shall be prepared for site specific operations and should include a description of the operations to be conducted and any special precautions that will be required.

#### **18.17 Hearing Conservation (Attachment OO)**

The purpose of this chapter is to protect workers from the effects of occupational noise exposure.

#### **18.18 Stop Work Authority (Attachment PP)**

The purpose of this procedure is to establish the SWA of all BP Wind Energy employees and Contractors to suspend individual tasks or group operations when the control of HSSE risk is not clearly established or understood.

It is BP Wind Energy policy that:

- Employees and Contractors have the authority and obligation to stop any task or operation where concerns or questions regarding the control of HSSE risk exist.

- No work will resume until all Stop Work issues and concerns have been adequately addressed.
- Any form of retribution or intimidation directed at any individual or company for exercising their authority as outlined in this program will not be tolerated.

#### **18.19 Ladders (Attachment P – Working at Heights)**

- All “A-frame” (step) ladders will be used properly (fully opened and not as a straight or extension ladder).
- All straight or extension ladders must be tied off or secured.
- When initially climbing a ladder to tie off the top, a second person must be holding the ladder in place.
- The side rails of the extension ladder must extend above the upper landing surface by a minimum of thirty-six (36) inches.
- Like power cords, ladders will be inspected before each use and on a quarterly or monthly basis marked with the required color code.
- Ladders must be rated for a construction job (A-1 or 300 lb. limit, fiberglass, not metal).
- Employees must be forward facing and maintain three (3) points of contact on ladders.

#### **18.20 Trenching and Excavation**

Anytime ground disturbance operations take place a “One Call” notification shall be made three (3) days prior to the anticipated date of digging or in accordance with state law. A competent person will determine that there are no unidentified pipelines or utility lines in the affected area. In addition to the “One Call” locates, the Contractor must perform sweeps before excavating.

A Ground Disturbance permit must be completed daily prior to excavation beginning. The Permit and Plot Plan will be together and kept on site and returned as part of the job documentation. The Plot Plan must include a hand sketch of, at a minimum, the following:

- Location of the area to be excavated
- Any utilities within the work area

##### **18.20.1 Applicability**

The Ground Disturbance Procedure and Ground Disturbance Permit are applicable for the following activities:

- Any mechanical excavation that results in penetration of the ground. Unless Exempted in Section 18.2.
- Any manual ground penetration, such as digging with a shovel or driving a T-Post, greater than twelve (12) inches. Unless Exempted in Section 18.2.
- Any demolition activity such as pulling or removing concrete foundations, pipelines, or other underground facilities.

##### **18.20.2 Exemptions**

The Ground Disturbance Practice is not applicable for the following:

- Maintenance blading of lease roads is allowed where fill dirt has been added to mitigate erosion or in situations where a minimum of four (4) inches of overburden or fill exist above grade.
- Using mechanical equipment to remove stockpiled material provided the activity ceases when the stockpile is depleted to a point where ground penetration from the equipment is likely.
- Reclamation/Remediation/Reseeding. If the following apply:
  - Reseeding equipment that does not penetrate the surface to a depth of less than or equal of six (6) inches is used.
- Driving sign posts and / or T-posts when all of the following conditions have been met:
  - The posts are manually driven and do not exceed a depth of twelve (12) inches, and
  - The posts have a stop that limits the depth of penetration or a mark that indicates the depth of penetration.
- Manual use of a Probe to locate underground facilities.
- When performing “Pot holing” activities with Hydro-Vac equipment, a Ground Disturbance Permit is not required, unless the potholing is being completed to expose a non-metallic pipeline or energized electrical cables.

All workers who are engaged in excavation i.e., equipment operators, must review and sign the Ground Disturbance permit. A documented daily trench / excavation inspection, completed by a competent person, is required for entry into excavations greater than five (5) feet.

In the event that personnel will enter an excavation, the trench must be inspected by a competent person and a trench report will be completed. All equipment operators must be qualified to operate the equipment and all personnel involved in the ground disturbance will have completed the appropriate BP Wind Energy Ground Disturbance training.

This procedure describes the safety precautions and protective systems that help protect workers from excavation hazards. It should be used in conjunction with the requirements of OSHA 29 CFR 1926, Subpart P and State OSHA Requirements.

This policy has been implemented to provide guidelines for protecting personnel working in, and around, excavations and trenches. Any questionable conditions noted shall be referred IMMEDIATELY to the competent person, appropriate project management, and HSSE.

### **18.20.3 General Requirements**

A review of the nature of underground and overhead utilities must take place prior to beginning excavation activities on the project site.

The competent person shall inspect excavations, trenches, and adjacent areas daily, after every rainfall, and as soil conditions change throughout the shift. If any indications exist of the possible slides or cave-ins, failure of protective systems, a hazardous atmosphere, or other hazardous conditions, necessary safety precautions shall be taken before any additional work can take place in that section of the excavation. Inspections shall be documented.

Workers shall not work in excavations where water is accumulating unless adequate precautions have been taken to protect against the hazard posed by such accumulation.

Shoring, bracing, or underpinning shall be provided if the stability of buildings or walls is endangered by an excavation or trench. Any excavation or trench adjacent to a backfilled excavation or trench, or a backfilled excavation or trench that is subject to vibrations from railroad traffic, highway traffic, or operation of machinery (such as shovels, derricks, cranes, or trucks), shall be secured by a support system, shield system, or other protective system (i.e. sheet piled, shored and braced, etc.).

- **Access** – In trenches four (4) feet or more in depth, ladders, step ramps, or other safe means of access and egress shall be provided at intervals of twenty-five (25) feet or less of lateral travel. Ramps are the much preferred choice. If a ladder is used, the ladder shall extend three (3) feet above the original surface of the ground. Walkways, ramps, or bridges with standard guardrail shall be provided at all excavations and trenches where workers are required or permitted to cross over. The crossing shall be made of tightly secured planking of uniform size.

Turbine foundation access ramps must have excess concrete placed on the ramp as a stable walkway.

- **Set Back** – Workers shall be protected from excavated material, equipment, and small tools. That could pose a hazard by falling or rolling into excavations. Protection shall be provided by placing and keeping such materials or equipment, at least two (2) feet from the edge of the excavation. Retaining devices are to prevent materials and equipment from falling or rolling into the excavation; or by combining both if necessary.
- **Equipment** – When mobile equipment of any type is used or allowed to operate adjacent to excavations or trenches, or barricades shall be provided. All wells, pits, shafts, trenches, or other similar ground fall hazards shall be barricaded or covered. No one shall be allowed under loads handled by shovels, derricks, or hoists, or near vehicles being loaded by such equipment. Workers exposed to vehicle traffic operating in the area of excavations or trenches shall be provided with, and instructed to, wear safety vests or other personal protective equipment. Such items will be marked with made of reflectorized or highly visible material.
- **Dust** – Dust conditions should be kept at a minimum level by using water or other safe means as described in the Dust and Emissions Control Plan.
- **Confined Space** – Every trench or excavation four (4) feet or deeper shall be inspected daily before workers enter the trench. In locations where workers may be subjected to hazardous dusts, gases, fumes, or an oxygen-deficient atmosphere, workers shall be provided with proper respiratory protection, instructed in its use, and required to use such protection. In such circumstances, rescue equipment shall be immediately available for use by competent personnel.
- **Training** – An employee identified as a “competent person” shall be trained initially and every two (2) years thereafter, in accordance with OSHA Trenching and Excavation Standards (29 CFR 1926 Subpart P). They must also complete the Competency Evaluation attached to this plan.

29 CFR 1926 Subpart P should be consulted for other items and circumstances which may include:

- Structural ramp requirements for access and egress (personnel and/or equipment).

- Water removal from excavation.
- Protective system damage.
- Manufacturer's approval to deviate from standards.
- Support system removal.

#### 18.20.4 Excavation Protective Systems

Each worker in an excavation shall be protected from cave-ins by an adequate protective system. Protective systems shall have the capacity to resist all loads that are intended or could reasonably be expected to be applied or transmitted to the system.

Portable trench boxes or sliding trench shields may be used instead of shoring or sloping. Such boxes or shields shall have the capacity to resist without failure all loads that are intended or could reasonably be expected to be applied or transmitted to the system. The requirements of the appropriate option below shall be followed and properly documented. Some exceptions to this are:

- Excavations that are made entirely in stable rock (natural solid mineral matter that can be excavated with vertical sides and remain intact while exposed). The matter must first be so classified by a competent person.
- Excavations that are less than five (5) feet in depth and examinations of the ground by a competent person provides no indication of a potential cave-in (Such excavations must use a 34-degree slope, 1 ½ foot horizontal to 1 foot vertical).

#### 18.20.5 Sloping Systems

The slopes and configurations of sloping systems of excavations five (5) feet to twenty (20) feet in depth shall be selected and constructed by the competent person and shall be in accordance with the following requirements (Soil analysis by a competent person shall be done to determine the soil or rock type)

Soil or Rock Type	Maximum (Horizontal: Vertical)	Allowable Slope (Vertical)
Stable Rock	Vertical	90 degrees
Type A	.75:1	53 degrees
Type B	1:1	45 degrees
Type C	1.5': 1'	34 degrees

Without prior approval by the BP Wind Energy Site Construction Manager and HSSE Advisor, all excavations that are not classified as stable rock, must be sloped at a minimum of 1.5' / 1'.

A Registered Professional Engineer shall design all protective systems for excavations in excess of twenty (20) feet that require employee entrance. This information must be documented and filed at the project site, with the Registered Professional Engineer's stamp on the plan.

- **Support Systems, Shield Systems, and Other Protective Systems**

Designs of support systems, shield systems, and other protective systems shall be selected and constructed by each company or designee and shall be in accordance with one of the following four options:

**Option 1** – Designs using Appendices A, C, D (Found in 29 CFR 1926 Subpart P) – Timber shoring in trenching shall be determined using conditions and requirements of Appendices A (soil classification), C (timber shoring for trenches), and D (designs for hydraulic shoring).

**Option 2** – Designs using manufacturer’s tabulated data – designs of support systems, shield systems, or other protective systems that are drawn from manufacturer’s tabulated data shall be in accordance with all specifications, recommendations, and limitations issued or made by the manufacturer (such as trench jackets, hydraulic). This information must be filed on-site.

**Option 3** – Designs using other tabulated data – Designs of support systems, shield systems, or other protective systems shall be selected from, and shall be in accordance with, tabulated data. This information must be filed on-site.

**Option 4** – Designs by Registered Professional Engineer – support systems, shield systems, and other protective systems not using option one (1), two (2), or three (3) shall be approved and stamped by a Registered Professional Engineer.

#### **18.20.6 Excavation Reminders**

- Each project shall have a designated, trained “Competent Person” who is line management, and can influence and stop the work as required.
  - a. Competent person shall inspect and be responsible for all excavation work.
  - b. Competent person shall keep and maintain the required documentation on-site.
  - c. Competent person shall be trained in soil classification and testing per the OSHA 29CFR 1926.652
  - d. Competent person shall work with shoring, or other protection systems designs, when a protection system is required.
  - e. OSHA may review the competent person’s training and experience documentation on each visit to the site.
  - f. Competent person shall complete the Competency Evaluation attached to this plan.
  
- When all of the above precautions/requirements have been met, the IA will grant the permit.
  - The permit will be noted on the permit board.
  
- The PIC will remain on the scene until the work has been completed.
  - At the end of the shift, the permit will be returned to the office to be properly closed and archived.

## 19.0 Severe Weather

At the beginning of civil activities or construction of lay down yards, a weather monitoring system will be in place. The system will have the capability of monitoring lightning out to at least 60 miles from the project. Work will not commence until this system is in place and operational.

When severe weather or electrical storms move in to the area, weather service reports must be monitored closely and we must be prepared to react should severe weather become threatening. It is important to remember that the safety of project employees is our number one priority. The turbines are designed to withstand high wind speeds and are equipped with a lightning rod / grounding system, however evacuation of the turbines may still be necessary in severe weather conditions. If severe weather is discovered in the field, immediate notification should be given to the office. If radio transmission of the report is not confirmed, repeat radio transmissions until notification is given by telephone or in person to the office.

- Immediately after receiving a severe weather report, HSSE Advisors, Project / Site Manager or Site Superintendent must gather and assess the situation on site.
- The weather service, which provides lightning strike information, will be monitored to track the lightning strikes and direction of storm movement.
- If a lightning strike occurs within thirty (30) miles of a crew's work location, work will stop with the exception of process sensitive activities referenced below.
- If a lightning strike occurs within thirty (30) miles of a work location during process sensitive activities the appropriate evaluation to determine if work shall or shall not continue will be reviewed by the BP Wind Energy Safety Professional, and Site Manager or designee in conjunction with the affected Contractor. Some examples of process sensitive activities are listed below:
  - Erection of turbine or met tower components
  - Rotor Assembly
  - Grouting the base tower section
  - Concrete Placement
  - Road Stabilization
- No personnel will be allowed to re-enter a turbine for thirty (30) minutes.
- If another lightning strike occurs within thirty (30) miles of the work location the thirty (30) minute timeframe will restart.
- A decision of what areas of the project the lightning affects will be made. This will determine if the project in its entirety is shut down or if certain sections of the project are shut down. The decision will be made by the BP Wind Energy Site Safety Professional, and the BP Wind Energy site manager. The decision will be based on the following conditions:
  - Direction of storm travel
  - Work Location
  - Location of lightning strike(s)
  - Speed of storm travel
- If a decision to evacuate the towers is made, the broadcast announcement must be made on all radio channels.
- Employees must evacuate not only the towers and cranes, but the areas immediately surrounding the towers and cranes as quickly as possible – do not stop for finishing touches or equipment other than turning any gas heating devices off.
- Foremen are required to account for the personnel on their crews and report to the office that everyone is present and accounted for on their crews (including Sub-Contractors).
- Each foreman must choose a meeting point for their crew.
- No crew member shall leave until entire crew is accounted for.

- Crews must stay together until word is given to the foreman regarding either returning to the towers or ending the work day – crews must not return to the towers until an all clear is given.
- The decision to return to the turbines MUST be made by the BP Wind Energy Site Manager after closely reviewing weather reports and discussing the issue with the weather services. In all cases, if there is any uncertainty, error on the side of safety.

Everyone on site has the right and responsibility to stop unsafe work. If unsafe conditions are identified, including unsafe weather conditions, supervision should be notified immediately so that proper and timely decisions may be made.

### 19.1 Tornado / Severe Thunderstorm Threat

A severe thunderstorm watch or warning and/or a tornado watch or warning will be communicated to the project site by Data Transmission Networks/Meteorologics, Inc. Notification will be made via the web-based application and emails, text messages and/or pages will be sent to selected personnel at the site by the application. Once a notification has been received, it will be communicated to the project via the site radio system.

The following are the notifications that will be communicated by the system-

**Sixty (60) miles-** An **“alert”** message will be sent following observation/information of severe weather that includes high winds, hail, lightning, storm warning and watches to include tornado warnings and watches, etc. An announcement will be made over the site radio system notifying personnel about the alert. HSSE and BP Wind Energy management personnel will begin to actively listen to the weather radios. Computers and other sources of radar will be monitored as well. If necessary, designated may attend the National Weather Service Storm Spotter training to be aware of what to look for on radar and outdoors.

Trained storm spotters may be dispatched upon an alert notification from either the Data Transmission Networks or the National Weather Service radio that a tornado warning or watch is in effect within seventy-five (75) miles.

**Thirty (30) miles-** A **“warning”** message will be sent notifying selected personnel of severe weather within thirty (30) miles of the site indicating that all personnel should be coming down tower and seeking shelter or evacuating. If crane activities are taking place at this time, loads should be placed back on the ground, booms lowered or pawls engaged and the boom turned downwind of the approaching front. An announcement will be made over the site radio system notifying personnel about the warning.

**Thirty (30) minute** period of no lightning within thirty (30) miles- An **“all clear”** message will be sent notifying personnel that the severe weather threat has ended and no lightning has been observed within thirty (30) miles for thirty (30) minutes. An announcement will be made over the site radio system notifying personnel about the all clear.

When a storm known to produce tornados is within seventy-five (75) miles of the project site, BP Wind Energy and other specified Contractor personnel will convene to review the location of the storm and direction of travel. The decision will be made to have all Contractors and Sub-Contractors assemble at the project office area when the project HSSE and Site Managers determine it necessary. At that point a headcount will be made to confirm all personnel are accounted for and then the employees will be dismissed to seek shelter on their own.

When a tornado threat is imminent and there is no time to assemble at the office area, crews will be instructed to evacuate. Usually this will be in a southerly direction but real time evacuation directions will be given via the site radio system and phone calls. Once the storm has passed, all employees will reassemble at the jobsite laydown yard for a headcount.

In the event of direct observation of severe weather, such as a tornado, the person observing the condition should utilize the site radio and call on the designated emergency channel (designated channel to be determined during the job start-up) and notify all persons of the condition, location and direction of movement. Personnel should evaluate their location and surroundings and either take shelter in a low lying area or buckle their seat belt, keep their head below the dash and shelter in their vehicle. If personnel are in towers, they should descend the tower and go to the cellar level of the tower.

The weather alert radios that are dedicated to monitoring the National Weather Service frequency for this area have been placed in the BP Wind Energy office trailer. One radio is located in the HSSE office and one in the administrative office. This radio emits an alert tone that is activated by the National Weather Service whenever information is received of severe weather. This will serve as an additional warning method to personnel at the site.

The project team will perform a tornado drill to test communication, evacuation times, and employee accountability.

#### Fujita Tornado Rating Scale

<b>F-Scale Number</b>	<b>Intensity Phrase</b>	<b>Wind Speed</b>	<b>Type of Damage Done</b>
F0	Gale tornado	40-72 mph	Some damage to chimneys; breaks branches off trees; pushes over shallow-rooted trees; damages sign boards.
F1	Moderate tornado	73-112 mph	The lower limit is the beginning of hurricane wind speed; peels surface off roofs; mobile homes pushed off foundations or overturned; moving autos pushed off the roads; attached garages may be destroyed.
F2	Significant tornado	113-157 mph	Considerable damage. Roofs torn off frame houses; mobile homes demolished; boxcars pushed over; large trees snapped or uprooted; light object missiles generated.
F3	Severe tornado	158-206 mph	Roof and some walls torn off well-constructed houses; trains overturned; most trees in forest uprooted
F4	Devastating tornado	207-260 mph	Well-constructed houses leveled; structures with weak foundations blown off some distance; cars thrown and large missiles generated.
F5	Incredible tornado	261-318 mph	Strong frame houses lifted off foundations and carried considerable distances to disintegrate; automobile sized missiles fly through the air in excess of 100 meters; trees debarked; steel re-enforced concrete structures badly damaged.
F6	Inconceivable tornado	319-379 mph	These winds are very unlikely. The small area of damage they might produce would probably not be recognizable along with the mess produced by F4 and F5 wind that would surround the F6 winds. Missiles, such as cars and refrigerators would do serious secondary damage that could not be directly identified as F6 damage. If this level is ever achieved, evidence for it might only be found in some manner of ground swirl pattern, for it may never be identifiable through engineering studies

## 19.2 Hot Weather

During hotter seasons (i.e. summer) there are a number of factors that should be considered. The following are recommendations for the selection of PPE that are in addition to the general requirements.

- To prevent overexposure to the harsh sunlight, employees should cover up in breathable (to avoid overheating) but tightly woven fabrics, such as cotton clothing,
- To block effects of ultra violet (UV) rays, sunscreen should be worn at all times. A sun protection factor (SPF) of at least 15 is the recommended minimum, and will block up to 93% of UV rays,
- Hardhats must be worn, preferably with a wide brim, to protect the neck, ears, eyes, forehead, nose and scalp to prevent overexposure,
- UV absorbent safety glasses should be worn and will block 99%-100% of UVA and UVB ray,
- Measures must be in place to address potential heat stress issues and include but are not limited to limiting work hours, frequent breaks, cool vests, work/rest schedules after ninety-three (93) Fahrenheit degrees sustained.

The BP Wind Energy Heat Illness Prevention Plan must be adhered to.

## 19.3 Cold Weather

BP Wind Energy's Risks of Winter Work Procedure, to include the Ice Checklist, will be followed. (See Attachment V.)

As with hot weather, cold weather requires special consideration when selecting appropriate PPE. The following recommendations pertain to personal protection equipment selection during colder climates:

- Wear proper clothing for cold, wet and windy conditions, including layers that can be adjusted to changing conditions
- All employees having to work outdoors should wear gloves
- In extreme conditions, take a frequent short break in warm dry shelters to allow bodies to warm up

## 19.4 Flash Floods

- The project area is located in an area prone to possible flash flooding.
- If there is a weather event that has the potential to produce flash flooding; this will be announced via the project radio system.
- Some areas are already equipped with water depth gauges that can assist personnel in evaluating the potential risk.
- Under no circumstances will project vehicle be driven into moving water in areas with potential for flash floods.
- This is a link to the Mohave County's "ALERT Flood Warning System".

<http://weather.co.mohave.az.us/perl/DWReports.pl>

There are a couple of links for gauge maps and some other information that might be of interest. It looks like the most relevant gauge is Detrital Wash @ CR145. It is about 6.5 miles above the materials pit.

## **20.0 Housekeeping**

It is also required that all Contractor employees and Sub-Contractor's employees, supervisors and craftsmen alike, practice good housekeeping at all items. Offices, jobsites, shop areas, and laydown areas, all must be kept clear of scrap and unnecessary materials. Materials necessary for work must be properly stacked, kept out of roadways, and allow for proper access for firefighting & emergency equipment. Laydown areas must be planned and laid out in sections, with access roadways adequate for firefighting and materials handling equipment.

In work areas, scrap lumber, formwork materials, etc., must be picked up, nails removed and stored or put in waste bins. All waste receptacles/bins are to be properly identified.

## **21.0 Sanitation Requirements**

Toilets, wash-up facilities, potable drinking water and eating facilities shall be provided and maintained as per federal/state requirements at a minimum. Contractor's facility plans shall be reviewed and approved by BP Wind Energy prior to mobilization and shall be audited during construction. Office trailers shall have running water and flush toilets.

Each portable toilette must have a log kept identifying the date that it was serviced.

### **21.1 Drinking Water**

Each Contractor will be responsible for supplying an adequate supply of drinking water for their employees. Drinking water, when stored in bulk, must be kept out of direct sunlight. In addition, an adequate supply of electrolyte solution must be made available.

### **21.2 Washing Facilities**

Each Contractor will be responsible for supplying necessary washing facilities for their staff.

## **22.0 Equipment Operators**

Operators of all cranes and other mobile equipment must be qualified to operate the assigned equipment and trained to operate the particular piece of equipment to be used. Documentation of operator qualifications must be available. Operator qualifications are subject to review by BP Wind Energy.

A spotter will be required for heavy equipment backing (gang trucks, concrete trucks, etc.) and is recommended for other vehicles. If needed, equipment will be marked or barricaded to prevent the equipment from getting too close. If vehicles need to be running when parked, the wheels must be chocked if the vehicle has a manual transmission. In the case of an automatic transmission, the parking brake will be set. Cell phones and two-way radios shall not be used by the operator while vehicles are in motion (see the driving Attachment I for specific requirements). When possible, vehicles will be parked so as the first move is forward when returning the vehicle to operation.

Construction equipment inspection, operation, and maintenance must be consistent with the manufacturer's recommendations and company requirements. Contractor shall ensure that manufacturer's O&M manuals are available for reference. Manufacturers shall be contacted in requesting manuals, which are not available.

## **23.0 Cranes and Lifting**

### **23.1 Cranes**

This procedure establishes guidelines for inspecting and safely operating cranes, including tower cranes and boom trucks. It also outlines the qualifications for crane operators and describes how to assemble and remove lattice booms.

As a general rule, lifting operations will be conducted as follows:

- A documented assessment of the lift has been completed in a form jointly developed and agreed upon by Owner and Contractor, and the lift method and equipment have been determined by a competent person;
- Contractors of powered lifting devices are trained and certified for such equipment;
- Rigging of the load is carried out by competent persons;
- Lifting devices and equipment are certified by a competent person as being safe for use (within the preceding twelve (12) months, with an annual recertification requirement);
- Load capacity does not exceed dynamic and/or static capacities of the lifting equipment;
- Any safety devices installed on lifting equipment are operational; and
- All lifting devices and equipment have been visually examined before each lift by a competent person.

### **23.2 Crane Suspended Work Platforms**

This procedure establishes guidelines for the use of Crane-Suspended Work Platforms. Use suspended work platforms only if their use results in the least hazardous exposure to employees.

These devices are commonly referred to as “Man-baskets”, “Work-baskets” or “Crane-baskets”. Their purpose is to enable personnel to be safely hoisted through the use of a crane or derrick for the purposes of inspecting or conducting work. The use, precautions and regulations governing their use are found in Sub-Part N of 29 CFR 1926.1431. Anytime personnel plan to use a suspended personnel platform from a crane or derrick, they must ensure 100% compliance with these regulations. Personnel must be trained in the use of such equipment, and all such equipment will be inspected prior to use.

### **23.3 Critical Lifts**

All critical lifting operations require a JSEA/JHA prior to the lift, as well as a pre-lift plan and permit. The JSEA will be discussed with applicable personnel in a mandatory pre-lift meeting prior to any lift with a crane. Prior to the lift, it will be determined if the lift is critical. For critical lifts, a critical lift plan will be prepared in accordance with the BP Wind Energy policy.

Crane cribbing – mats will be used for any mobile crane set up and lifting operations. Rigging will be inspected prior to each lift by a competent person. This inspection shall be documented. Only qualified personnel will operate cranes or other equipment used for lifting. Tag lines will be utilized.

This procedure outlines the specific planning and execution requirements for lifting critical loads. The Contractor shall submit a Critical Lift Plan for review and acceptance by the BP Wind Energy Site Manager at least thirty (30) working days prior to performing any lift that is covered by this Project Procedure.

#### **23.4 Slings and Rigging Equipment**

The BU Lifting Procedure (Attachment DD) provides minimum requirements for slings and rigging equipment used for hoisting and material handling at the Project Site. Slings and manufactured rigging equipment shall not be loaded in excess of their rated capacities. Daily documented rigging inspections are required every day the rigging is used. All slings will have a permanent identification tag.

## 24.0 Fire Prevention/Protection

As with other BP Wind Energy policies, prevention of fires is the goal. Emphasis is placed on pre-planning, hot work permit controls, flammable gases, liquids, and combustible material controls; the control of smoking; training and use of warning signs, construction grade electrical wiring, and proper waste storage and removal.

The Site Specific Fire Prevention Plan must include applicable procedures relating to fire prevention and protection. These procedures must include topics such as:

- Emergency reporting – Fire, spills & releases
- Fire equipment and extinguisher
- Control of smoking
- Warning signs
- Flammables and combustibles - storage, dispensing, and use
- Waste collection and removal
- Electrical fire prevention
- Others, as required by BP Wind Energy

## 25.0 Safety Recognition

The Contractor is encouraged to institute a graduated series of safety incentives as a proactive method of achieving the goals of the safety program. These incentives are designed to reward safe working habits, precise and timely safety record keeping, and to enhance project awareness of the relationship between Safety, Quality and Efficiency. Specific project goals and objectives are set by the Contractor and BP Wind Energy based on project requirements. Recognition programs that provide “**immediate positive reinforcement**” are designed as a structured element in the safety program that are generally received well and provide the greatest return. Supervisors should be evaluated and recognized based on written safety performance criteria.

## 26.0 Orientation, Education and Training

This section outlines most of the basic types of information and training all employees, supervisors and Sub-Contractors need to know prior to the start of work and throughout construction of this project. BP Wind Energy requires the Contractor to incorporate these programs/training sessions into their Safety Plans.

### 26.1 Employee Orientation

All Contractors and Sub-Contractors are required to attend a formal Project site safety orientation. In addition, Orientations for visitors and vendors shall be conducted accordingly. Each new employee shall receive an introduction and Site safety orientation to the project. This includes all staff personnel and subcontract personnel, regardless of the number of years worked in the industry. It should cover every person new to the jobsite. The orientation is given before applicants are hired or Sub-Contractors begin work. The orientation program is site specific. Contractor shall incorporate a means to verify understanding (tests) or the orientations and maintain documentation of such.

The effectiveness of the orientation is enhanced greatly by the active participation of senior project supervision.

Records shall be kept of all employees who receive the project orientation.

Prior to the start of the project a Site Employee Orientation Program shall be developed to include at minimum the following:

- BP Wind Energy Led Induction to Major BP Wind Energy Safety Requirements: - including as required:
  - a. Driving Standard
  - b. CoW
  - c. Golden Rules
    - Site Specific Hazards – BOP Contractor Led
    - Drug & Alcohol Program
    - JSEA – BOP Contractor Led
    - Emergency Response Plan, BOP Contractor Led
    - Permits, BOP Contractor Led
    - Threatened/Endangered species/plants, BOP Contractor Led
    - Cultural resources, if any, BOP Contractor Led
    - Desert tortoise, if required, BOP Contractor Led

### 26.2 Supervisor's Responsibility

All supervisors must learn and enforce all rules applicable to their work. They set an example for their subordinates and co-workers by their compliance with work rules and their aggressive leadership in safety. All supervisors shall know all requirements for work permits, assure no work proceeds without them, or determines that a permit is not required for the work planned. All supervisors should have attended an OSHA 10-Hour course or equivalent as well as holding a current CPR/First-Aid certificate when applicable.

### 26.3 Training Curriculum and Schedule

The Contractor is required to provide a management system in place to ensure that craft personnel have received the necessary training and/or accreditation to perform work.

Task specific training in addition to the general site specific requirements for the job shall be done before the beginning of the task and refreshed at the beginning of each shift.

Employee training records are to be maintained on site and available for BP Wind Energy's review upon request.

## **27.0 Document Control and Records**

Maintain HSSE related documents and records. The process should include a means to assure that documents and records can be identified, retained and are accessible. Documents should be periodically reviewed and revised as necessary, current versions made available and obsolete documents removed or identified as being retained for legal use. BOP and Contractor HSSE documents shall be maintained on site for BP Wind Energy review for the entire project duration.

### **27.1 Measuring and Monitoring**

A process shall be in place to measure and monitor the construction projects activities. The process will assess the implementation and effectiveness of its operation controls, track HSSE performance and evaluate the achievement of HSSE goals and objectives Performance measures should be generated on a periodic basis that is timely for the construction project and provides project management with the tools to understand trends, impacts and establish future direction.

### **27.2 Project Monthly Reporting**

Contractors shall issue a Monthly Safety Performance Report to BP Wind Energy. This report includes the below project safety statistics. This report is due by the 3rd of the following month.

- Near Miss / Hazard Recognitions
- First Aids
- Recordable Incidents
- Property Damages
- Environmental Releases
- Miles Driven by Light Vehicles and Heavy Vehicles
- Man-hours by All Contractors
- Manpower by Contractor
- Safety Observations / Audits

## **28.0 Compliance with Safety Rules**

The Contractor shall, at all times, comply with and enforce all safety rules and procedures from the very beginning of the project and ensure that their employees, agents and Sub-Contractors comply with all HSSE Procedures, rules and regulations. Specifically, Contractor shall comply with all company rules and regulations, the requirements of regulatory Occupational Safety and Health, and all related requirements. Copies of applicable Contractors and BP Wind Energy requirements shall be made available to Sub-Contractors through the Contractor's representative.

### **28.1 Failure to Comply**

Should the Contractor fail to comply with the requirements of this Section and related writings, BP Wind Energy shall notify Contractor verbally and/or in writing. Contractor shall, upon being advised of its non-compliance, immediately take all corrective action to comply. In the event Contractor fails to initiate prompt corrective action, BP Wind Energy may take any and all actions provided for in the contract terms and conditions necessary to achieve compliance. Costs incurred by Sub-Contractor as a result of such actions shall be for Contractor's account. BP Wind Energy representative request removal of any individual or contract company who fails to comply with safety requirements or is otherwise deemed detrimental to the project.

**29.0 Reserved**

### **30.0 Personal Protective Equipment**

This procedure describes PPE that is intended to protect, shield, or isolate personnel from hazards.

Engineering and administrative controls should be implemented, where possible, before PPE is used.

A PPE assessment was completed for this project and can be found in Attachment Z.

### **31.0 Hand and Power Tools**

The following guidelines will be utilized when operating power or hand tools:

- Prior to operation, employees shall be properly trained and instructed in the use and care of power-actuated tools.
- All hand and power tools shall be properly used in the manner for which they are intended and shall be maintained in safe working condition.
- Electrical power tools shall be grounded or double-insulated with proper equipment grounding, or Ground Fault Interrupter (GFI) circuit protection must be provided.
- Pneumatic power tools and their hose connections shall be secured with approved 'whip couplers' at all times.
- All portable grinders shall conform to OSHA and American National Standards Institute (ANSI) requirements.
- Cords, leads, and hoses, whenever possible, should be placed off to the side of traffic areas to prevent creating a tripping or traffic hazard, or be protected.
- Guards must remain on tools; if the guard is not on the tool, the tool is to be taken out of service and the guard must be either repaired or replaced.

## 32.0 Signs/Signals

The following guidelines will be utilized when using, or in need of, signs, signals, barricades and lights:

- Signs, signals and barricades shall be visible at all times where hazards may exist.
- Each person has the responsibility to point out potential hazards to their superiors or take preventative action if so warranted.
- Effective barricades with visible warning signs shall protect all streets, roads, highways and other public thoroughfares, which are closed or alter normal traffic flows.
- Barricades shall be located at the nearest intersecting public highway or street on each side of the blocked section.
- Open trenches and other excavations shall be evaluated in JHA's.
- Suitable barriers, signs, and lights should be considered to ensure adequate protection is provided.
- The evaluation shall include the work activity, as well as, non-work related traffic.
- Obstructions, such as stockpiled materials or equipment, shall be evaluated for similar warning signs and lights.
- All barricades, signs, lights and other protective devices shall be installed and maintained in conformance with applicable statutory requirements.
- When work is performed at night or where daylight is obscured, the employer will provide artificial light sufficient to permit work to be carried out efficiently, satisfactorily and safely, and to permit thorough inspection.
- During such time, the access to the place of work shall also be clearly illuminated.
- All wiring for electric light and power shall be installed and maintained in a first-class manner, securely fastened in place at all points, and shall be kept as far as possible from telephone wires, signal wires, and wires used for blasting.
- Signs, signals and barricades shall be removed when the hazard no longer exists.
- Every attempt should be made to ensure that the trench is not left open overnight

### 33.0 Steel Erection

In addition to the following information, refer to the BP Golden Rules regarding PTW, Working at Heights and Lifting Operations found in the preface of this booklet.

It is the duties of the Controlling Contractor to ensure the following in regards to the Steel Erection Process:

Steel erection is permitted once concrete has reached minimum compressive strength, or 75% of the intended minimum compressive design strength (exact strength to be found within the job site specifications/contract). This is accomplished through receiving tests breaks back from testing company.

Site layout: (Determined in the job specifications/contract)

- Adequate access roads for cranes, deliveries, trucks, and other necessary equipment. Road widths, base materials, and pad sites differ with the installed product and contract requirements.
- Pre-planning of overhead hoisting operations
- Critical lift procedures (refer to Cranes-Critical Lift Procedures section of this handbook) should be followed for all hoisting operations.
- Site specific plan is not generated for each site since similar crews may erect similar types of towers at multiple sites. Roads and layouts are generally similar, but may differ due to terrain. Pad area for tower erections is essentially the same from one site to the next; however customer may desire variations in pad design.
- Structural steel assembly

**Stability** - process is to have sections bolted in place before crane or hoisting apparatus is released. Also erection process follows manufacturer's specifications regarding erection of components, depending on who the manufacturer is.

**Walking working surfaces** - requires 100% tie-off during erection process. Openings in decks, plates and internal structures may be covered for fall protection during the erection process. (Walking surfaces are addressed in the Fall Protection section of this handbook)

#### 33.1 CFR 1926.759 Falling Object Protection

- Specific procedures are required for raising and lowering tools inside tower sections
- Signage is required when a crew is working in a tower to alert entrants to possible hazards
- Workers must provide protection to workers below by covering hatches

CFR 1926.760 Fall Protection is required when working six (6) feet or more above the ground or when working in a precarious position.

CFR 1926.761-Training

- Crane set-up training
- Daily crane inspection
- Fall Protection
- Fork lift operations
- Crane training
- Tower climbing safety and rescue
- Rigging, hand signals, and handling structural steel is available through corporate training.
- Connector training is provided as "hands on" due to the variety of component manufacturers.

### **34.0 Audits**

The construction project should establish and maintain a documented procedure for auditing compliance with its legal requirements and standards of construction. The program should include all levels of Contractors and Sub-Contractors on site including client interface where there exists potential HSSE impacts. In addition, periodic audits of the project HSSE management system shall be performed to verify that the HSSE management system is understood and has been properly implemented.

### 35.0 Industrial Hygiene

The BOP Contractor will, upon request by BP Wind Energy, conduct industrial hygiene monitoring and share resulting data with BP Wind Energy minus any personal identifiers. Then plans can be made to conduct sampling to determine whether levels are approaching the OSHA Permissible Exposure Limits or ACGIH® TLV®. Activity (categories) identified as producing potential exposures includes the following:

- Noise levels in or around areas such as the following:
  - Large crushing operations,
  - Batch plants and inside towers
  - While operating equipment and machinery inside towers, i.e. torquing bolts, etc.
- Spaces where there is potential for oxygen depletion or other “recognized serious safety hazards” such as in rotor hubs, nacelles, excavations, trenches, and turbine and transformer vaults. This includes off-gassing in blades.
- Silica and nuisance dust in and around areas such as crushing operations or grout mixing is taking place, along roadways, etc.
- Exposures from welding and grinding activities.
- Hazardous byproducts from existing operations that may be adjacent to or on the wind turbine site, such as hydrogen sulfide from oil wells, etc.
- Chemical exposure (epoxy grout, mag chloride, paint, etc.)
- Extreme temperature considerations (Heat/Cold index)
- Illumination – adequate illumination levels will be maintained. In the event operations are conducted at night, or in otherwise poor illumination areas, light plants or portable lighting will be utilized. In no case will vehicle headlights be used as the primary source.

### **36.0 Blasting Requirements**

The Blasting Plan is attached to this site plan and includes:

- Complete Insurance and Bonding Requirements of Sub-Contractor
- Documented Proof of the Supervisor's Blasting Qualifications
- Documentation from a Similar Project and Details of Any Previous Problems
- Storage Area Procedures and Requirements
- Emergency Procedures
- Methods of Detonation
- Signage
- Communications
- Signals
- Transportation of Explosives
- Loading of Explosives
- Firing Procedures
- Inspection Procedures
- Misfire Procedures
- If Applicable, Procedures for Protection of Surrounding Buildings

Prior to any blasting to occur, a blasting permit must be issued.