

**BU 7.1 - Appendix**  
**High Risk Wind or Solar Farm Construction, Operations & Maintenance or OEM Service**  
**Contract Language**

**ARTICLE ( X ) HEALTH AND SAFETY REQUIREMENTS**

Definition: The term contractor(s) applies to any contractor; subcontractor of a contractor; supplier of goods or services; Original Equipment Manufacturer; or Service Provider who performs General Industry or Construction work, transportation, deliveries, installation, set-up, training, testing or commissioning activities on Owner's Property.

Note: **Submission of requested deliverables:** Requested documents herein are to be provided to the Owner's Representative as demonstration of compliance for the submittal of deliverable(s). Owner may comment on the documents; however Owner's comments shall not be construed as approval or rejection of the deliverable(s). Requested Documents shall be submitted to the owner's Representative a minimum of 30 business days prior to starting work on the project/ site.

**Section 1.1 Safety and Health Protection/ Injury and Illness Prevention Program**

Owner places safety at the highest priority and intends that the Project will be incident free under E.ON NA's "Zero Harm" and "Safety First" initiatives. Contractor(s) shall adopt a proactive and positive safety culture to achieve this objective and to cooperate with Owner in its application of Owner's HSSE policy. Contractor(s) shall be expected, as a minimum, to undertake all Work in accordance with all relevant Local, State, and Federal health and safety legislation, applicable consensus standards, codes and ordinances and technical standards. The requirements herein supplement the Federal, State and Local regulations. The most stringent requirements shall prevail and are applied as applicable to the Statement of Work and Contract requirements.

Contractor(s) shall be responsible for all aspects of health and safety of all its personnel and those of its Subcontractor(s) during Service, design, construction, commissioning, and handover of the Project Items. Contractor(s) shall produce a safety and health protection/ injury and illness prevention program/ management system that references and re-enforces the specific regulations applicable to the work performed and the aspects of health and safety for the Project/ Site, conforming to the requirements of the Occupational Safety and Health Act, the Environmental Protection Agency, the Americans with Disabilities Act, and relevant regulations of the applicable State, best industry practices and the requirements of this Article. Such program shall be updated as needed to remain current during the duration of the contract.

Contractor(s) shall submit, prior to execution of the Agreement, a safety and health protection/ injury and illness prevention program/ management system to Owner's Representative. The safety and health protection/ injury and illness prevention program/ management system shall incorporate all of the requirements delineated herein and considered as Contractor's plan for management and oversight of the safety program of each Subcontractor working on the Project/ Site. Contractor(s) shall also submit each Subcontractor's detailed safety and health protection/ injury and illness prevention program/ management system at least four (4) weeks prior to each Subcontractor starting any construction/ Service activities on the Project Site.

**Section 1.2 General Requirements**

Contractor(s) shall meet or exceed all statutory safety, health, and environmental requirements. Industry safety best practices shall also be followed where identified and applicable. Consensus Standards, not incorporated by reference but enforceable under the OSH Act General Duty Clause, shall be followed.

Contractor(s) is notified that this Project/ Site is subject to frequent regulatory review by corporate, third party, and/or state and federal regulatory agencies and agents, and, therefore, an attendant risk of citations fines, and penalties for non-compliance exists. A comprehensive, third party audit of all safety and environmental programs and procedures, as well as compliance with the requirements of this Scope of Work, may occur at some point during the project.

Contractor(s) shall develop and implement a comprehensive safety and health protection/ injury and illness prevention program/ management system and Behavior Based safety observation program including training for all site managers, supervisors, superintendents, and site workers.

Contractor(s) is welcomed and encouraged to seek OSHA consultative services. Owner’s Representative shall be notified in advance of the time date and location of all state or federal OSHA consultative or compliance visits. Owner shall contact OSHA, if Owner and Contractor(s) agree to request OSHA consultation to resolve compliance-related disagreements.

Contractor(s) shall develop and implement a risk, hazard and PPE assessment process i.e., Job Safety/ Hazard Analysis (JSA/ JHA). The Job Safety/ Hazard Analysis process shall include management, foremen, supervisor, superintendent and site worker training. Employees scheduled or directed to work alone shall complete a Job Safety/ Hazard Analysis with their immediate supervisor.

If Contractor(s) has any non-English speaking employees, bi-lingual employees shall be identified by Contractor(s), either on their staff or on those of a Subcontractor, to assist with the training of such non-English speaking employees. All orientation, Tail Board, Tool Box, JHA, and All Hands training shall be conducted in the primary language of all employees.

**Section 1.3 E.ON NA’s Cardinal Rules shall be followed (Violation may result in immediate removal from site):**

<b>CARDINAL RULES</b>	
1.	Continuing to work with a known unsafe act/condition.
2.	Violation of Electrical Safety Program (arc flash zones, electrical tools, grounding & PPE).
3.	Failure to take one serviceable fire extinguisher and rescue device up-tower per crew.
4.	Violation of energy isolation (LOTO).
5.	Violation of 100% tie-off within 6’ of an unprotected edge and working at height >4’ General Ind. and >6’ Construction.
6.	Bypassing a safety device.
7.	Dropped Tools and Equipment (Failure to secure; not related to equipment failure, unless overloaded).
8.	Violation of a critical lift plan.
9.	Working under a suspended load or leaving a suspended load unattended.

Exception: Cardinal Rule three (3) applicable to fire extinguishers: Applies to Energized Wind Turbines, Hot Work or working with flammable or combustible substances while working up-tower.

**Section 1.4 Contractor’s Risk Assessment and Management Plan**

Contractor(s) will develop and submit to Owner a proposed risk, hazard, environmental aspect and impacts plan which (i) identifies the hazards, risks, environmental impacts and aspects associated with the Contractor’s and sub-contractors’ work activities at the Owner’s specific site(s) and (ii) defines the methods for controlling these hazards, risks, environmental impacts and aspects, with special emphasis provided for those high energy/ high risk hazards that have the potential for serious injuries (i.e. Lost Time (Calendar Days Away from work), restricted or transferred duty), fatalities, or Owner or third party property damage as demonstration of compliance for this deliverable. A Risk Assessment Matrix, similar to that provided by American Society of Safety Engineers which addresses both severity and frequency aspects of risk shall be

part of the plan and shall be submitted to Owner's Representative.

### **Section 1.5 Project/ Site Safety Organization**

Contractor's Project/ Site Safety Manager or Regional HSSE Coordinator shall be an experienced Environmental and Safety professional as indicated below or Certified Safety Professional (CSP) with certification from the Board of Certified Safety Professionals and shall have at least one (1) year of experience on wind turbine or solar construction sites, or OEM or O&M Services applicable to the contract and scope of work or equivalent experience in at least one (1) of the three (3) disciplines of the Project (i.e. Civil/Structural, Electrical, Solar and Turbine Erection as applicable to the contract and scope of work). The experienced Environmental and Safety professional or CSP shall report directly to the corporate officer with responsibility for HSE, with matrix responsibility to site management. Other HSE specific certifications and related work experience may be acceptable provided the credentials and Curriculum Vitae are submitted to Owner's Representative for review.

The supporting HSE staff shall include a minimum of one (1) safety professional. The discipline of safety coordinators shall have one (1) of the following:

- An associate's or bachelors' degree from an accredited university or college in Health and Safety, and a minimum of two (2) projects in safety management experience in the Wind or Solar Industry, as applicable.
- A Construction Health and Safety Technician certification from the Board of Certified Safety Professionals or the following experience and training:
  - A minimum of one (1) year experience as a Safety Person, successful completion of the OSHA Construction thirty (30) hour, and 501 Instructor Certification preferred, and
  - Minimum discipline work experience.
    - Civil/Structural – Three (3) years' experience in at least three of the four of the following: Roads, crossings, excavation and trenching, rebar and concrete.
    - Electrical – Completed apprentice training or equivalent as a journeyman electrician, or comparable experience in similar work in transmission and distribution or sub-station.
    - Erection – Completed apprentice training or equivalent as a journeyman ironworker, or comparable experience in similar work, including the twelve (12) hour training for 1926 subpart R.

Documentation of compliance with training requirements shall be provided/ obtained prior to the commencement of construction/ service activity on site.

Competent Persons shall be identified for those standards and best practices that require them. Competent persons shall be designated in writing by Contractor(s) and submitted to the Owner prior to their commencement of work as competent persons. All Site Managers, Superintendents foremen and crew leaders shall complete the OSHA 30 for Construction industry prior to working on the Project/ Site.

Wind and Solar farm Construction projects require on-site HSSE resources.

Service Contracts/ Agreements may use a designated Collateral Duty Technician/ HSSE Representative with a dedicated regional HSSE Coordinator Manager.

## **Section 1.6 Occupational Health**

### **Emergency Action Plan, Medical Facilities and Transportation**

Contractor shall provide an Emergency Action Plan to address Health, Safety Injury, Illness and Environmental emergencies applicable to the project site. Contractor(s) shall provide a First Aid Station or services for all employees, identified transport for cases requiring medical attention off-site, one (1) AED for every seventy five (75) employees on the Project Site, and first aid, CPR, and AED training for all management and supervisory and electrically qualified employees. Emergency Action Plan for the site shall include helicopter evacuation procedures, if time to a designated trauma center is more than thirty (30) minutes travel by ambulance. Employees with reported injuries may not refuse medical treatment. They will be evaluated for first aid or transported for medical treatment based upon the site's designated First Aid provider. Site workers with potentially serious or life threatening illnesses or injuries shall only be transported by helicopter or ambulance and not driven by any site management or site worker. A licensed Medical Professional shall provide written clearance for injured employees to return to work before they may be permitted to do so. Contractor shall follow the ACGIH Guides/ TLV/BEI for Heat Stress and Strain, which may require cooling stations and on site Emergency Medical Services and support.

### **Industrial Hygiene**

The services of a Certified Industrial Hygienist shall be employed to conduct sampling and survey analyses in advance of work in areas of identified Occupational Health hazards (e.g. work in and around powered machinery, in the presence of fumes, smoke, irritant dust, or chemicals), or whenever conditions warrant as determined by Contractor(s) or Owner's Representative.

### **Hazard Communication Program (Globally Harmonized System of classification and labelling of Chemicals)**

Contractor(s) shall implement the Project/ Site HazCom program in compliance with applicable standards. Contractor(s) shall provide MSDS (GHS Safety data sheets) and PPE training for all Project/ Site employees, specific to the employees and chemicals they use. The Hazardous Materials Inventory List shall be updated by inventory no less often than every ninety (90) days. All SDS's and chemical inventories shall be provided to Owner's Representative for inclusion into Owner's HazCom program.

### **Hazardous Material Storage**

All flammable aerosols and liquids will be stored in NFPA and UL approved flammable materials storage containers and cabinets with functional locks and self-closing doors. No containers shall be stored on the bottom shelf, and all doors must be completely self-closing. Other hazardous materials shall be stored appropriately for their classification and provided no less than three (3) feet of separation from identified reactive agents. "In use" is defined as in immediate use during the current work shift. Materials will remain in proper storage until removed for use during the work shift. Materials must go back into proper storage at the end of shift. A monthly waste generation log shall be maintained listing the Waste Stream, Type of waste (Hazardous, Universal, Recyclable, Municipal, etc.), Qty (converted to pounds /tons), Generator Name and EPA ID.

### **Sight Conservation/Eyewash Facilities**

Where identified eye hazards exist (within ten (10) second's travel by foot of caustic or acidic applications, batch plants, or other chemicals in use), an eyewash station meeting or exceeding ANSI requirements (e.g. fifteen (15) minutes of continuous flow at not less than 0.4 gpm, at the proper height and accessible by an unassisted employee unable to see) shall be provided and maintained. Eyewash bottles are not an acceptable substitute for a compliant eyewash station in a location with an identified hazard.

### **Respiratory Health**

Contractor(s) shall implement a written OSHA compliant Respiratory Health Program, including provisions for medical screening, pulmonary function testing, fit testing, cartridge issue, and respirator maintenance. Contractor(s) shall demonstrate ability and plans to implement as needed, including a Project Site person trained to complete fit tests. Contractor(s) shall not provide respirators to employees other than through an OSHA compliant respiratory protection program. In the event a respiratory health hazard is suspected, a Certified Industrial Hygienist shall be contracted by Contractor(s) to perform analysis. If an action level hazard is identified, the compliant respiratory health program shall be implemented.

### **Hearing Conservation**

The presence of a potential hearing impairment hazard shall require a sound level survey of the area in the vicinity of the equipment and exposed employees to assess the hazard. A time weighted average of 85 dBA for a ten (10) hour day or impact levels above 110 dBA for either condition shall require the implementation of a compliant hearing conservation program, to include required hearing performance and related examinations at employer's expense. Hearing protection necessary to abate the hazard shall be provided by the employer.

### **Blood-borne Pathogens**

Contractor shall provide and retain on site a Bloodborne pathogen exposure control program. All field employees shall receive blood borne pathogen training as part of first aid training. BBP kits shall be provided by Contractor(s), including bio-hazard bags, sterilizing agents, nitrile gloves, organic material covers, and emergency eye rinse solution. All employees exposed to bodily fluids or other organic matter from other employees shall be evaluated by a licensed medical professional and afforded appropriate inoculations at the employer's expense.

### **Ergonomics**

Contractor(s) shall provide Manual Handling training for all employees, to include back injury prevention best practices, and multiple person lifting guidance, for all Project/ Site employees prior to the commencement of Work.

### **Site Sanitation**

All employees shall have sanitary facilities no more than ten (10) minutes from their work location. All employees shall be afforded soap or soap-impregnated towlettes and potable water for personal sanitation purposes. Hand sanitizer may be provided in addition to, but not in place of, soap.

### **Inclement Weather**

Contractor emergency action plan shall address inclement weather issues and evacuation procedures applicable to the Project/ Site. Contractor shall prepare and implement an Inclement Weather and Lightning Protection procedure with an alert and notification system for site workers. The inclement weather issues and evacuation procedures shall be agreed upon between both parties Project/ Site Managers, typically the strictest requirements prevail.

If local tornado shelters are not readily available to support evacuation, Contractor shall provide Portable Tornado Shelters applicable to the number of workers on the site. See the following link for an example of an approved shelter.

RE: <http://www.reddogmobileshelters.com/>

### **Section 1.7 Tools and Equipment**

All equipment, including rigging, slings, cranes, heavy equipment, hand tools, powered hand and bench tools, rolling stock, and unique equipment, shall be inspected as the applicable standards and practices direct, no less often than monthly. All inspections shall be performed by a designated Competent Person (as such term is defined in OSHA regulations), specify what was inspected, by whom, and logged by date and time. All slings and other lifting components shall be tagged with test dates and shall be inspected by a rigging Competent Person prior to each use. A site inspection that reveals a sling or other lifting component in use that fails inspection requirements shall result in the removal of the Competent Person designation from the rigger until retraining is demonstrated to Owner's satisfaction. All inspection and maintenance records shall be made available for Owner's review. Make-shift tooling and equipment is prohibited on the project site. All custom tooling, equipment, and rigging must be designed and stamped by a registered professional engineer and include a part number, serial number, load rating and calibration as applicable.

Equipment operators shall have formal classroom course and practical hands-on demonstration examination(s) for each specific piece of equipment (make and model) that they are considered qualified to operate. The results are to be provided to Owner as demonstration of compliance for this deliverable. This includes all equipment that does not require a license to operate (e.g. sheep's foot, fork lifts, rollers, etc.). Class training shall include closed resource examinations. Qualification in "a" type of equipment (e.g. a rough terrain fork lift) does not grant certification in "all" equipment of that type.

The qualifications of represented labor shall be verified in the same manner as that of a new hire or existing company employee. Cards or documents stating qualification by type shall not be considered adequate for this purpose, except for crane operators or if issued by a nationally recognized certifying body.

### **Section 1.8 Trenching and Excavations**

Contractor shall utilize the applicable DIG-TESS/ One Call System applicable to the location of the project site. All excavations not in work shall be barricaded. Berms are acceptable foundation barricades, so long as all openings in the berms are barricaded. All excavations in Type "C" soil (as the term is defined in OSHA regulations) shall be sloped, shored, or shielded if they are intended for entry at any time. All excavations intended for employee entry shall be protected, except those in stable rock. All pits and quarries shall comply with Mine Safety Administration standards. A Competent Person shall evaluate all trenches and excavations that are intended for entry for soil classification and protective systems as needed, prior to any employee's entry for any reason. This evaluation shall be documented, with the location, diagram, date and time, and Competent Person's name and employer. Failure to identify and abate an excavation's cave-in potential prior to any personnel entry shall result in the suspension of that individual's Competent Person designation and review of Contractor's designation criteria. Reinstatement shall be granted as retraining is demonstrated to Owner's satisfaction. All excavations for spread footer foundations that are greater than four (4) feet in depth shall have emergency egress points (ladders or ramps) per OSHA requirements, no more than twenty five (25) feet of travel from any employee's work area around the circumference of the excavation. Excavation plans shall be developed and approved/ stamped by a registered professional engineer.

Contractor or contractor's Excavator shall be prepared to implement Ground Penetrating Radar or X-ray location of underground utilities where normal utility locates are not functional or adequate to avoid contact with hazardous utilities, e.g. natural gas, chemical, fuels, oils, pipelines and electrical utilities.

### **Section 1.9 Vehicles, Movement**

To the maximum extent practical, all vehicles (including all cars and trucks on the Project/ Site, as well as earth moving and other rolling construction machinery) shall be stopped or parked in such a way that it will not be necessary to back the vehicle. If any backing of any vehicle is required, a spotter shall be employed.

In addition, spotters shall be employed whenever vehicles are moving within one hundred (100) feet of tower components, substations or any other equipment while working on the Project Site. All trailers and other towed work equipment that may be transported on other than private roads shall be properly configured, licensed, and tagged. The Federal or State Manual of Uniform Traffic Control Devices shall be implemented to include the appropriate caution and speed limit signs. Permits and approval from the Authority having Jurisdiction may be needed. When these permits are required, they shall be provided to the Owner's Representative prior to starting work.

Contractor shall be responsible for coordinating all crop dusting and aerial spraying to ensure workers are not exposed to chemical resulting from crop dusting and aerial spraying or other applications of herbicides or pesticides. Work activity shall be coordinated in accordance with the re-entry times of the applicable chemical substance and to avoid worker contamination.

### **Section 1.10 Personal Protection Equipment (PPE)**

All employees are required to wear the following minimum PPE whenever on the Project Site. Exception: When transitioning from the construction trailers/ O & M buildings to designated parking areas, PPE is not required. PPE shall be determined by the Risk and Hazard Assessment and Job Safety or Job Hazard Analysis and certified by the contractor(s) and subcontractor(s) Representative(s), as applicable:

- ANSI compliant eyeglasses with original, frame-specific side shields, or ANSI compliant eyeglasses or goggles as required by the type work.
- Type E or C hard hats, as applicable. Note that nothing may be worn between the head and suspension system except manufacturer-approved liners specifically designed for the hard hat; hard hats must be correctly rigged and worn forward, except for specially designed welding hard hats. For those workers working at height where they will need to rescue a victim from fall protection and where the risk of a swing angle exists, the worker shall be provided with a type II hard climbing helmet with 4 point chin strap.
- Class II or III traffic vest or shirt, closed in the front.
- ANSI compliant safety-toed, rigid soled boots.
- Employees shall have in their possession for use a pair of work gloves specific to the task and hearing protection.
- Applicable Fire Resistant/Retardant Clothing, PPE and equipment shall be provided and worn based on the incident energy and fault current of the area being worked on.

### **Section 1.11 Traffic and Dust Control**

Batch plants shall be located and relocated as necessary to permit concrete trucks to meet quality requirements. All vehicles shall be limited to twenty (20) mph or less on the Project Site roads and posted speeds on all other roads. Changes to speed limits, water, or other agents shall be applied as necessary to prevent loss of visibility on non-paved roads. If visibility falls below two hundred fifty (250) feet in any location, all traffic shall be stopped in that area until roads are wetted and visibility returns to at least two hundred fifty (250) feet. Lignosulfonate or other chemical agents reviewed by Owner to assist in dust suppression shall be applied to all roads prior to any used by cranes, concrete trucks, WTG delivery trucks, or other construction vehicles. The [Manual for Uniform Traffic Control Devices; http://mutcd.fhwa.dot.gov/](http://mutcd.fhwa.dot.gov/) shall be implemented. A Traffic control plan and Site Map shall be provided and are required to be prominently posted. Transportation plans may need to be provided and approved by the local Authority having jurisdiction.

### **Section 1.12 Fall Protection**

The ANSI 359-2007 Standard for Fall Protection and Rescue is the governing standard for all E.ON North America (E.ON NA) Wind Turbine and Solar Construction Projects and operational sites. All Projects shall follow Federal or State fall protection standards. The requirement for fall protection for all Project/ Site employees begins when the point a harness lanyard would attach to an employee is four (4) feet General Industry tasks, 6' Construction Industry tasks or 15 feet steel erection tasks, as applicable to the Statement of Work or more off the ground or lower surface. All employees required to use fall restraint, positioning or protection systems shall be afforded the means to tie off one hundred (100%) percent of the time and with equipment that arrests their fall no less than three (3) feet above the lower surface or ground. Fall Protection applies to truck drivers who must climb on vehicles, flat bed and tanker trailers when loading and off-loading.

All employees required to use a personal fall or restraint system shall receive hands on training on use and inspection with a specified post-training exam performance of not less than eighty (80%) percent, as well as hands-on instruction in personal use and inspection. Fall protection equipment found in the field to be out of service life, not documented as inspected, or failing inspection shall be removed from service and destroyed. The fall protection Competent Person's designation shall be revoked; reinstatement shall be granted as retraining is demonstrated to Owner's satisfaction.

All employees that meet the requirements for fall protection shall be trained in self rescue and co-worker rescue by an equipment-manufacturers' trained instructor. Contractor and applicable subcontractor(s) shall provide personal tower evacuation kits and rescue kits for tower climbers. Contractor(s) shall provide owner evidence that all contractor and subcontractor employees who climb wind turbines have passed an American with Disabilities Act and Civil Right Law compliant fit-for-duty medical and essential duties evaluation.

The Owner implements a Climbing Safety Rules Policy. Contractor shall develop a climbing safety rules policy, which shall be agreed upon between both parties Project/ Site Managers, typically the strictest requirements prevail.

100% fall protection is required when working within 6' of unprotected edges greater than 4' high.

Recommended Criteria: No climbing in wind turbines is allowed when lightning is detected within 20 miles. All personnel shall exit wind turbines when lightning is within 20 miles.

Except for emergency rescue, no climbing in wind turbines will be permitted when wind speeds exceed the manufacturers recommended maximum for occupation of the nacelle. Hub entries and access to the top of the nacelle will not be allowed when wind speeds exceed the recommendation of the manufacturer. The rotor will not be locked if wind speeds exceed the manufacturer's recommendation.

### **Section 1.13 Job Safety/ Hazard Analyses**

Contractor(s) shall provide a uniform JSA/ JHA system for all employees on the Project Site. Contractor shall provide all employees training in the use of JSA/ JHAs. Contractor(s) shall audit JSA/ JHA forms for completeness and hazard identification, and share results with Owner no less than weekly. Foremen and supervisors shall receive remedial training in JSA/ JHAs by Contractor(s) at the direction of Contractor(s) or Owner.

### **Section 1.14 Employee Training**

Training shall consist of orientation and other specified training for all employees, with applicable programs by trade to include comprehension testing and practical demonstrations by a competent person. See the attached matrix notes for additional requirements. All training content, performance measurement, and instructors are subject to review and approval by Owner. Training shall be made available in native language for non-English speakers, as required. Note: Effective January 1, 2016, all Wind Turbine technicians working



on Owner's sites shall be Global Wind Organization Certified, excluding offshore/sea survival training or have received GWO complaint training. Evidence of such training shall be provided to the Owner's Representative. RE: <http://www.globalwindsafety.org/>

Contractor(s) shall provide defensive driving training for all contract employees.

Note: Environmental training shall be completed as necessary to meet the requirements of Section 4.7, and any site Conservation, habitat or environmental plans as applicable.

### **Section 1.15 Electrical Safety**

All portable generators shall be properly grounded, and GFCIs shall be attached to cords, in addition to whatever GFCI protection is offered by the generator's circuits. GFCIs shall be tested prior to each use.

Contractor shall provide to owner all safe electrical work procedures; energized electrical work permits, energization plans and equipment specific Lock-out/ Tag-out procedures) as demonstration of compliance for the deliverable(s). Owner's comments shall not be construed as approval or rejection of the deliverable(s).

Contractor(s) shall develop and implement electrical equipment lock-out/tag-out process and procedures.

Contractor(s) shall provide the following:

- Locks for isolators to maintain safe working conditions.
- Sufficient grounding straps/clamps and cables to allow the safe isolation of one (1) complete collection circuit. Grounding straps shall be required when a visible means of circuit disconnect is not possible.
- A laminated electric schematic of BOP Work to assist with isolation and switching to be mounted in each WTG, Construction trailer/Conex and in the Project Substation control room.
- All electrical devices, switches, breakers, transformers, relays, enclosures and equipment shall be identified with temporary identification and device labeling to aid in electrical isolation until the permanent identification and labeling is installed. Utilization and premise wiring shall be color coded with reference designations.

### **Section 1.16 Confined Spaces**

Erected towers or vertical sections, Hubs, nacelles, turbine "basements", and blades shall be managed as confined spaces per OSHA 1910.146. All other confined spaces are as defined in OSHA 1910.146. Open flame is prohibited inside erected WTG components without a confined space and hot work permit. Open flame for the purpose of activating shrink wrap products will not be permitted, unless it is demonstrated as required in writing by the Turbine Supplier.

### **Section 1.17 Steel Erection**

Steel Erection shall comply with the requirements of 1926 subparts N and R, to include Professional Engineer approved/ stamped site-specific critical lift plans, as delineated in Appendix A of the subpart R. Critical lift plans, including signed planning meeting minutes and JSA/ JHAs shall be available at the lift site and presented to Owner at its request for review. Crane movement activities (including disassembly and reassembly) shall be formally planned with Owner participation and address fall protection requirements for riggers, crane path (including soil compaction test results for the path), crane crossing materials, set up, and inspection. Crane assembly/disassembly, travel, and crossings shall each have a separate JSA/ JHA. Each leg between crossings shall be re-briefed, as will each crossing. The Owner will inspect the Contractors Lift Plan and checklist documents.

### **Section 1.18 Audit**

Contractor shall conduct frequent and regular safety audits of the Project Site in line with the best practice and OSHA, NESC, NEC, NFPA, state guidelines, and all other referenced safety and environmental authorities for all applicable site programs. Contractor(s) shall be responsible for all required OSHA, EPA, Department of Labor, applicable State and other postings. A report on safety incidents and issues shall be included in the monthly Project Site report to Owner. Contractor(s) shall ensure that all Subcontractors on the Project Site perform their work in accordance with their safety and health protection/ injury and illness prevention program which shall be reviewed by Contractor(s).

### **Section 1.19 Records**

In accordance with 29 CFR 1904, all safety, medical treatment, and training logs shall be kept on the Project Site and shall be made available to Owner's Project Site management, whenever requested. All injuries shall be logged and recorded in accordance with 29 CFR 1904 and OSHA Compliance Directive Number: CPL 02-00-135. The OSHA 300A shall be developed and posted at the Project Site, for the Project Site. Contractor(s) shall direct and ensure all Subcontractors to do likewise. All injuries reported to the Contractor(s) shall be reported to Owner site management and Owner's Project Manager immediately via phone or email, with an incident report within twenty four (24) hours.

All equipment inspection, repairs, and preventative maintenance records shall be made available to Owner's representatives upon request.

All documents, manuals, drawings, specifications that have an impact on Safety shall be maintained current via the use of a master document index with revision status to ensure the latest controlled version is in use and readily available to aid on safe work and isolation of hazardous energy.

### **Section 1.20 Safety Signage**

For constructions sites, Contractor(s) shall provide signage as soon as possible and when hazards and controls are needed as work evolves for the Project Site to provide notices of:

- Personal Protective Equipment (PPE) required for access to the Project Site (where hard hats and harnesses must be worn).
- Eyewash Stations shall be identified in accordance with ANSI Z358.1-2004.
- Identification of each WTG, clearly readable from the access road.
- Fire point notices where applicable.
- "No Unauthorized Entry" signs on the Project Site gates and tower doors.
- "Danger – High Voltage" signs on Project Site gates, overhead powerlines, right of ways and Padmount Transformers.
- Main sign at Project Site entrances, the wording of which is to be approved by Owner.
- Speed limit signs at road entry points to the Project Site and at other locations as directed by Owner.
- Signs indicating the most expeditious routes for site exit in the event of an emergency.
- Fire assembly points at main entrance gate of the Project Site or safest possible location.
- All safety signage, except WTG identification, speed limits, and mile markers, shall be in English and Spanish.

- “Danger – underground utilities” for high and low pressure gas lines, water lines, fuel and oil pipelines.
- Owner, Contractors and Subcontractor Project Team and safety motivational and team building motivational banners at the entrance/exit of the construction office complex.

For O&M or OEM services, contractor shall follow the federal, state, and local requirements for safety, PPE and hazard signage.

### **Section 1.21 Incident Investigation and Root Cause Analysis**

All workers shall immediately report incidents to their supervisor/ foreman. All incidents shall be reported to the Owner’s Representative via phone or email immediately upon notification of the incident. The preliminary incident report shall be provided to the Owner’s Representative within twenty four (24) hours of the occurrence. All incidents involving medical treatment beyond first aid for any site employee or third party, lost time or restricted/ transfer of work, any damage to Owner’s property, any environmental incident, and any near miss selected by the Owner shall also receive an investigation/ Root Cause Analysis (RCA). Completed investigations / RCAs shall be completed and provided to the Owner within five (5) working days. For incidents where the investigative process may take longer than five (5) working days, investigations and RCA’s shall be submitted within thirty (30) days of the incident. If the investigative process cannot be completed within thirty (30) working days, then the Owner’s Representative shall be advised and a mutual agreement between Contractor(s) and Owner shall be reached on the investigation/ RCA final completion date.

### **Section 1.22 HSSE Requirements Summary and Contractor Deliverables**

In summary, the following shall be complied with:

- Within 24 hours from the date of the incident and via email or phone call, notify site management of any HSSE incident, motor vehicle incident or property damage occurring on the site.
- Monthly HSSE reporting due by the 5th calendar day of each month to include:
  - Number of HSSE incidents (injury, illness, motor vehicle incident, spill, property damage, security event:
  - Near-misses
  - First- Aid
  - Fatalities
  - Days Way From Work (lost time) incidents
  - Restricted/ transfer work cases
  - Medical treatment cases
  - Environmental incidents
  - Total hours worked
  - Motor Vehicle Incidents
  - Total miles driven
  - Waste generated and leaving site by waste stream and quantity

- Status of incident Investigations, root cause analysis and corrective actions
  
- Submittal of corrective actions with corrective action completion within thirty (30) working days from the date of the incident or corrective action plan for those actions that cannot be completed within 30 days from the date of the incident or investigation.
  
- Establish a HSSE Communication Board to include, but not limited to the following:
  - Department of Labor, OSHA, state workers compensation or other required notifications/ postings required by Local, State or Federal Laws
  - Emergency Response Plan/ Contacts
  - Injury Illness Prevention Plan (California Only)
  - Minutes from HSSE meetings
  - Accident and incident reporting information
  - List of Emergency Responders with contact numbers
  - Project's or Organizations Health and Safety Policy
  - Contractor site safety rules
  - Project related safety alerts
  - List of Competent and Qualified Persons
  - HSSE performance Metrics, Monthly, Quarterly and Year to date
  
- Submittal of Excavation and Critical lift plans stamped by a Registered Professional Engineer 30 working days prior to start of the work.
  
- Submittal of the documents listed below as needed and applicable to the Statement of Work 6 weeks prior to starting work. The listed documents shall be readily available at the site.
  - Emergency action plans
  - Risk assessments
  - Environmental impacts and aspects assessments
  - Job hazard/ safety assessments
  - Hazardous substance safety data sheets
  - Competent/ qualified persons lists
  - Evidence of employee certifications and training
  - Methods statements/ work procedures/ equipment specific LOTO procedures
  - Vehicle & traffic safety plans and site maps
  - Transportation plans
  
- Implementation of Behavior Based Observation and Hazard Identification Program.
  
- Maintain oversight and conduct HSSE induction/ orientation of the contractor's employees and subcontractors while on Owner's Site.

- Contractor shall follow and enforce E.ON NA Cardinal Rules.
- Owner reserves the right to audit, inspect and stop unsafe work at any time during the execution of the contract. Stop work will be executed per the stop work clause within the contract or agreement.
- Contractor shall immediately notify Owner of communications with outside parties regarding, incidents, HSSE performance, and Notice of Violations issued by regulatory agencies.
- 100% fall protection is required when working within 6' of un protected edges greater than 4' high. No climbing in wind turbines is allowed when lightning is detected within 20 miles. All personnel shall exit wind turbines when lightning is within 20 miles.
- Except for emergency rescue, no climbing in wind turbines will be permitted when wind speeds exceed the manufacturers recommended maximum for occupation of the nacelle. Hub entries and access to the top of the nacelle will not be allowed when wind speeds exceed the recommendation of the manufacturer. The rotor will not be locked if wind speeds exceed the manufacturer's recommendation.

## ARTICLE 2 ENVIRONMENTAL

### Section 2.1 Appearance

All installations shall be unobtrusive and blend into the landscape using a color pre-approved by Owner. No prominent company logos or advertising shall be applied to the outside of any equipment without the prior written approval by Owner. Color treatment and any signage shall be deemed to be included in the Contract Price, and details shall be submitted to Owner for its approval not less than one (1) month prior to shipping to the Project.

### Section 2.2 Electromagnetic Interference

Contractor(s) shall ensure that the level of electromagnetic emissions/interference generated by the BOP shall be no more than the levels permitted by Good Utility Industry Practices.

### Section 2.3 Oil-Filled Equipment

Contractor shall ensure that all equipment used in the work items which contains oil shall be supplied with fail-safe oil containment systems, appropriately designed to contain at least one hundred ten (110%) percent of all the oil in the event of a spill or leak. The containment systems shall be drained via oil-water separators in such a way that all of the oil is retained and only water of the permitted purity is released to the land drains. Contractor shall provide details of its design for containment and drainage to Owner for review no later than one (1) month prior to commencing work on the Project/ Site. Contractor shall comply with Owner's Spill Prevention Countermeasures and Control Plan, if applicable.

### Section 2.4 Oil-Filled Mobile Equipment

As applicable, Contractor(s) shall have on the Project Site two (2) thirty (30) gallon premium spill kits or one (1) standard two hundred (200) gallon minimum spill kit. Contractor's mobile equipment containing more than thirty (30) gallons of lubricating or hydraulic oil shall be provided with spill kits. All Contractor(s) and Subcontractor service vehicles will also carry spill kits. Contractor(s) shall develop a plan for remediation of any hazardous substance spill.

### Section 2.5 Dust Suppression

Contractor(s) shall water roads within the limits of the Project Site, as necessary, for reasonable dust suppression or as specifically required by Landowner Lease Agreements and per Local, State and Federal Regulations. Chemical agents to assist in dust suppression shall be used only with Owner's specific written permission.

### Section 2.6 Archaeological and Environmentally Sensitive Sites

Contractor(s) shall fence-off and provide warning signage for all archeological and environmentally sensitive site areas designated by Owner. Contractor(s) shall provide reasonable training to ensure that the site is not disturbed.

### Section 2.7 Compliance-Related Requirements

- Maintaining documentation for Storm Water Permit Inspection Records: these shall be kept on site and available until Final Completion where by the Owner will resume responsibility for inspection and record keeping. Contractor shall comply with the Site Stormwater Pollution Prevention Plan, if applicable.

### Waste Management

- A waste generation log shall be maintained showing they type of waste being generated and its method of disposal. This will become a mass balance of waste entering and exiting the facility.

- Recycling program for all oily waste to include oily rags, pads, and filters: these items shall be segregated and shipped for treatment in accordance with all local, state, and federal environmental laws.
- Universal Waste Recycling Program: this program shall comply with all applicable laws and ensure the proper segregation and disposal of all waste. NOTE: the volume and approximate weight of ALL waste leaving the site shall be recorded and reported to Owner by waste tickets or verification of disposer invoicing on no less than a monthly basis.
- Wood Pallet and Wood Spool Recycling Program: wood components, cribbing, wire spools, pallets, etc., must be recycled properly and separately from universal waste, if applicable. Contractor is not responsible for their own waste.
- Scrap Metal Recycling Program: the quantity and type of all scrap metal recycled shall be reported to Owner by waste tickets or verification of disposer invoicing on no less than a monthly basis.
- Documentation of the proper disposal of oil contaminated dirt resulting from spill cleanup activities.

Air Permit issues associated with concrete batch, road dust, and road base/crushing: permits shall be kept at the Contractor's office and batch plant for Owner review.

## **Section 2.8 Flora and Fauna**

Contractor shall immediately report to Owner's site management any harm to endangered flora and fauna associated with the site. Owner will provide a reporting method and format. Invasive species shall not be brought onto owner or private landowners properties. Avian and Bat fatality reporting shall be processed per an agreed upon protocol.