# SAFETY

## CONTRACTOR SAFETY PROGRAM

# Table of Contents

# *Contractor Safety Program*

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## *1.0 SBA Commitment to Safety*

**1.1** As a leader in the wireless industry, the ultimate goal of SBA Communications Corporation ("SBA") is to provide a healthy and safe work environment for the protection of one of our most vital resources – the contractors. The core belief of SBA is that all incidents are preventable. No task is so important that it should be performed in an unsafe manner.

## *2.0 Application of the Contractor Safety Program*

**2.1** This Program shall be used in conjunction with all applicable Federal/State/Local Regulations and industry best practices and is intended to be used as a field reference. This Program applies to all contractors, subcontractors and lower-tiered subcontractors' personnel on SBA sites and those performing work on SBA projects. Contractors are to comply with the contents contained in this Program. The term "contractor" in this Program will refer to any general contractor (GC), subcontractor and/or any lower-tiered subcontractor who will be performing work on any SBA structure, site or project, unless otherwise specified.

This Program establishes a structure for which all contractors will provide for the safety and health of all individuals affected by their work activities. This Program will describe the expectations and minimum requirements for health and safety performance. It shall be understood that additional requirements may apply dependent upon the scope of work (SOW) and task being performed.

Contractors will be granted access to an electronic copy of this Contractor Safety Program. For any questions related to this Program, contractors are to contact their supervisor and/or an SBA Safety representative.

Contractor(s) are to abide by their company's health and safety programs along with this Contractor Safety Program and any client's health and safety policies, as applicable. Contractors shall, at all times, conduct operations in such a manner to avoid the risk and endangerment to health, bodily harm, damage to property, and damage to the natural environment. Contractors must have all personal protective equipment and must utilize this equipment to complete their work activities, if applicable. Contractors shall furnish all environmental, health and safety documentation, procedures and plans as well as any safety equipment required to safely perform their assigned tasks.

## *3.0 Roles and Responsibilities*

**3.1 Contractor Management**
Contractor management should be responsible to maintain compliance with this program, at all times. Contractors are to have field supervision on-site during work being performed on behalf of their lower-tiered subcontractors unless the lower tiered subcontractor has qualified personnel on-site for the activities being performed.

**3.2 Contractor Field Supervision**
Contractor field supervisor is to provide leadership and guidance.

**3.3 Contractor Field Personnel**

Field personnel are to adhere to all safety requirements per this program and industry safe work practices.

**3.4 SBA Health and Safety**

Monitor crew compliance with EHS requirements. Conduct health and safety inspections and assessments against SBA, federal, state and local standards and regulations. Notify SBA, customer management personnel of the occurrence of all incidents or near-miss incidents immediately caused by and / or involving the contractor / subcontractor.

## *4.0 Training and Communication*

**4.1** Contractors are to ensure that, at a minimum, they adhere to the following requirements when on SBA projects and sites:

- All contractor field supervision and field crewmembers are to be adequately trained for their assigned work activities.
- All training that is administered to the contractor's personnel should be in accordance with the latest revision of ANSI Z490.
- All training and education is to be documented. Training records shall meet the latest revision of ANSI A10.48 and/or customer requirements.
- All instructor led training exercises shall be authorized by the contractor and are to be qualified by experience and/or education.
- Per the scope of work being performed, all contractors shall adhere to federal, state and local regulatory requirements concerning training.

**4.2** Contractors performing work for SBA are required to participate in a Job Start Call prior to any new crew/project being implemented/started for direct SBA work. Documentation of this call and whom was present is required. Attendees shall include field supervision and affected crewmembers.

## *5.0 Contractor Management*

**5.1** All contractors are required to submit to and register with SBA's contractor verification process. All contractors requesting access to SBA projects and sites are required to be verified and approved through the verification process. Depending on the SOW, contractors may need to be verified and approved through two separate systems. Registration requests will be processed through the SBA site operations and/or project management teams.

**5.2** All contractors working on DAS/Small Cell or Mobile Edge Computing (MEC) sites will be required to be verified and approved in the contractor verification process. All subcontractors for this type of work will NOT be required to be verified and approved in this process.

**5.3 Notice to Proceed (NTP)**

- The purpose of the NTP is to verify that the SBA site is ready for construction and the site is reserved for the required construction dates. This NTP process also ensures that all permits, supporting documents, contractor selection and required safety information is uploaded to the NTP prior to the construction start date. Contractors requesting access to any SBA site must do so through the SBA NTP Portal
- Contractors may self-register by going to the following link: http://sitentp.com/
- Upon completing of the registration, contractors will have the ability to submit for the NTP. Ensure the proper NTP type is selected, as more questions will populate based on the NTP type selection. Depending on the NTP type selected and the designated

questions, responses could trigger a “Safety Hold.” Otherwise, the NTP will be automatically routed to the Site Management Team for review.

- When an NTP is placed into a “Safety Hold”, the NTP is routed to the SBA Safety Team for a preliminary review. The following NTP types will place the NTP into a “Safety Hold”:
    - Safety Training
    - sUAS Drone Inspection

- Also selecting certain answers pertaining to the following information will place the NTP in “Safety Hold”:
    - Gin Poles
    - Riding-the-Line
    - Class 4 Rigging Plan: Activities involving reduced supporting structure strength or stability; Removal of structural members or unique appurtenances; Structure decom/demolition; attachment of rigging equipment to antenna mount; Hot work (Spark, flame, heat producing).

## *6.0 Worksite Analysis and Inspection*

### 6.1 Pre-Work Assessment/Job Safety Analysis (JSA)

It is the responsibility of each contractor to perform a Pre-Work Assessment or Job Safety Analysis (JSA) to identify all pre-existing and potential hazards. Necessary safety measures, as determined by the Pre-Work Assessment, must be taken to eliminate the identified hazards.

Information required, at a minimum, for completion of the Pre-Work Assessment includes:

- Job Information (Scope of Work)
- Project Personnel
- Emergency Procedures
- Job-site Hazards
- Hazard Control Measures
- Civil Work Information
- Tower Work Information
- Review and Signature

Safety hazards and control measures in the Pre-Work Assessment shall be discussed with all field crewmembers prior to the start of work on a periodic basis (i.e. daily, weekly).

The Pre-Work Assessment shall be reviewed each day revised accordingly to ensure that hazards have not changed. All contractors on-site must sign the assessment indicating that they have reviewed it and understand the hazards and safety requirements.

The Pre-Work Assessment must be located in an area that is known to all personnel and remain on-site for the duration of the job. Contractors should consult with the SBA Construction Supervisor or reference project specific documents to determine the requirements for the retention of the completed Pre-Work Assessment.

### 6.2 Equipment Safety Inspection

Equipment safety inspections include, but may not be limited to, the following:

- Personal Fall Arrest Systems (PFAS)
- Ladders and scaffolds
- Hand and power tools
- PPE
- Ropes (load ropes, tag ropes, safety ropes)
- Rigging equipment

- Fire extinguishers
- First-aid kits
- Heavy equipment vehicles
- Forklifts
- Cranes
- Hoists
- Personnel lifts (Aerial lifts)
- Hot work equipment (cutting and welding)
- Electrical (temporary or permanent)

Inspections may be required on a pre-use, daily, monthly or annual basis and be conducted according to regulatory requirements or manufacturer's recommendations. Equipment safety inspections are performed by the equipment operator, user or qualified person prior to equipment use or as required. Inspections should be documented and records maintained available onsite.

### 6.3 Health and Safety Inspections

The SBA Safety Manager, Safety Technician or Construction Supervisor will conduct safety audits to identify unsafe conditions, work practices, or non-compliance issues and review of required safety documentation. The purpose of these audits will be to review compliance with federal, state, local and provincial regulations, consensus standards, and SBA health and safety requirements. The audit will be conducted and the findings will be reviewed and discussed with the contractor's management personnel.

### 6.4 Incident Reporting

6.4.1 **Reporting of Work-Related Injuries/Illnesses/Near-Misses/Property Damage**
Contractors must immediately report all work-related incidents to their manager/supervisor and the SBA Safety Department the day of the incident. The contractor's supervision must submit a documented report to the SBA Safety Department relevant to the event that took place. All supporting documentation shall be completed and submitted following the incident.

## *7.0 Emergency Response*

The Pre-Work Assessment contains the emergency services phone number 911, company contact information, directions to the worksite, nearest occupational healthcare facility and hospital. A designated evacuation/assembly point that will serve as a gathering point in the event of an emergency shall be identified and communicated to all site personnel. All visitors must be provided with essential information related to site hazards and emergency response requirements. All worksites shall have a minimum of two persons onsite at all times who hold a current first-aid (FA), cardio-pulmonary resuscitation (CPR) and blood borne pathogens (BBP) certifications from the American Red Cross (or equivalent) along with an adequate first-aid kit for the scope of work.

### 7.1 Emergency Communications

If an emergency occurs, emergency services should be summoned by dialing 911. In the event cellular service is not available on the worksite, the nearest location for landline or cellular service shall be indicated on the Pre-Work Assessment next to the communication point portion of the document.

## *8.0 Tower Site Security*

### 8.1 Security During Tower Construction

The most significant security risks during the tower construction phase are vandalism, theft of tools and equipment, and workplace violence by, or injury to, non-authorized individuals. The following guidelines shall be observed when feasible during tower construction:

- Be observant of site conditions and prevent unknown persons from accessing the site.
- Establish access points for vehicles and park to limit access to the site.
- Clean up the site at the end of the each shift, placing tools and equipment in locked containers.
- Require that site visitors be escorted at all times.
- Lock out or remove the keys from equipment prior to departure from the site at the end of the day.
- Excavations left overnight must be protected and appropriately secured from unauthorized entry.
- Ensure all equipment and materials are secured and left in a safe and stable condition.
- Post appropriate site signage in a visible area to others
- Remove all sensitive equipment and tools from the site at the end of the day. For items that cannot be removed, place them strategically using a secure method to prevent them from being stolen.

### 8.2 Security for Existing Towers

The most significant security risks for existing towers are vandalism, theft and unauthorized person access. The following guidelines shall be observed when feasible for existing towers:

- A security fence is the minimum security for isolated tower sites (not located on buildings).
- A lock will be used to secure the access gate.
- Regulatory signs will be posted as required.
- Some sites may have special security requirements, such as card access and remote video monitoring. These are typically customer requirements, but may be adopted at SBA's discretion on a site-specific basis.
- Remove all sensitive equipment and tools from the site at the end of the day. For items that cannot be removed, place them strategically using a secure method to prevent them from being stolen.

### 8.3 Security for Controlled Access Areas

SBA Managed Sites team generally controls access to rooftops and similar sites. Some sites may have special security requirements, such as card access and remote video monitoring. Contact the SBA NOCC, Regional Site Manager or Managed Sites Team to verify if there are any special requirements to access your assigned SBA site.

## *9.0 Personal Protective Equipment*

Personal Protective Equipment (PPE) is to be selected and used based upon information gathered from the Hazard Assessment and Pre-Work Assessment. Contractors will ensure that all of their team members maintain their PPE and acquire new equipment when needed. Changes in PPE should be evaluated based upon changing site conditions and/or the scope. All PPE must be marked with the appropriate American National Standard Institute (ANSI) standard number, where applicable. All PPE must be inspected prior to each use. PPE found to have defects, damage or excessive wear, or is otherwise non-compliant, shall be removed from service.

### 9.1 Head Protection

- All head protection shall comply with ANSI-Z89.1.
- Hardhats are required at all times on SBA worksites. ANSI approved, Class E, climbing helmets are permitted when working at heights.
- All head protection must be worn in accordance with manufacturer's recommendations.

- Inspect hardhats for cracks and defects daily.

### 9.2 Eye Protection

- All eye protection must comply with ANSI-Z87.1
- ANSI approved safety glasses with side shields must be worn when exposed to eye hazards such as flying or falling objects, airborne dust, concrete chipping, and grinding.
- In some instances (chemical handling, excessive dust, grinding operations) additional eye protection (face shields, googles) must be worn.
- Appropriate eye protection must be worn for welding and cutting (minimum density #3).

### 9.3 Hand Protection

- Wear suitable work gloves (leather, cut resistant) while handling materials that cause lacerations, abrasions, burns, or other injuries to your hands.
- Wear chemical-resistant gloves when handling or dispensing hazardous substances as referenced by the chemical safety data sheets (SDS).
- Utilize electrically insulated gloves when performing work on electrical components that are energized or conducting live electrical (AC/DC) work.

### 9.4 Foot Protection

- When applicable, safety-toed shoes/boots shall comply with ASTM F2413 and OSHA 1910.136.
- Wear substantial leather work shoes or boots with non-slip, non-conductive soles to protect feet from contact with physical hazards.
- Rubber boots are required when performing concrete work.
- Contractors, at a minimum, shall use a slip-on metatarsal foot guard when using impactors or jackhammers.

### 9.5 Hearing Protection

- Hearing protection shall be worn in high noise areas (difficult to verbally communicate within arm's reach) or areas with measured levels of 90 decibels (time-weighted average) or greater.
- Hearing protection shall be maintained in a clean and sanitary condition.
- Personnel wearing hearing protection shall receive training on noise hazards and use of hearing protection.
- Acceptable hearing protection include, but are not limited to, earplugs (foam or molded) or earmuffs.
- Cotton, tissue, cloth, or other makeshift perceived sound-dampening materials are prohibited.

### 9.6 Respiratory Protection

- It is understood that work performed by contractors may require the use of tight-fitting, air-purifying respirators. Accordingly, the use of respiratory protection by contractors will be determined by the contractor's respiratory protection program and in compliance with OSHA 1926.103.

## *10.0 Fall Protection*

It is the requirement of SBA with regard to the hazards of elevated work that all contractors maintain 100% fall protection at all times. Elevated work is considered work on elevated surfaces that have an unprotected side or leading edge that is 6 feet or more above a lower level when performing construction activities.

## 10.1 General Requirements

100% fall protection that is compatible with tasks assigned is to be provided by the contractor's company, used and maintained pursuant with OSHA regulations when personnel are exposed to fall hazards in excess of the following heights:

- General Industry – 4 feet
- Construction Industry – 6 feet
- Scaffolding – 10 feet

All fall protection requirements when working on rooftops shall be conducted in accordance with OSHA 1926 Subpart M – Fall Protection.

All equipment used for fall protection and rescue must meet the requirements of the latest revision of ANSI Z359. Positioning devices **SHALL NOT** be used in place of Personal Fall Arrest Systems and their sole use for fall protection will be considered free climbing. Free climbing is strictly prohibited.

## 10.2 Job Planning

All projects requiring climbing shall be planned by a Competent Person. Pre-job planning shall include the following, but not limited to, the identification of primary and secondary alternate climbing routes, evaluation of obstructions, qualifications/training of climbers, PFAS, and any other factors associated with climbing activities. To reduce the concern for potential suspension trauma in the event of a fall, a rescue plan shall be developed and documented as part of the pre-job planning process.

## 10.3 Fall Protection Systems Evaluation

For the duration of each project, the contractor's Competent Person shall evaluate the work operations, climbing facilities, weather conditions, and PFAS to determine if any modifications to the pre-job plan are required.

## 10.4 Inspection

Each PFAS shall be inspected daily or prior to use by a Competent Person for wear, damage, defect, or other deterioration. Defective equipment shall be identified, tagged as unsafe and immediately removed from service.

## 10.5 Training/Qualifications

Prior to performing work at heights contractor personnel must have the required fall protection training. Contractors must be certified as Authorized or Competent Climbers in accordance with the latest revisions of ANSI/ASSE A10.48. For sites being accessed by alternative methods, appropriate fall protection training must be provided in compliance with all applicable OSHA and ANSI standards. Training must be documented per the provider's requirements, and each Authorized/Competent Climber must be in possession of the training certification while on an active jobsite.

## 10.6 Personal Fall Arrest Systems (PFAS)

- Contractors must pre-plan their climbing activities to insure they have the proper PFAS components to perform the job safely.
- PFAS will require at least a full-body harness with shock absorbing twin- leg or retractable lifeline and an anchorage point rated at 5,000 pounds.
- Positioning devices SHALL NOT be used in place of fall arrest systems, and their sole use will be considered "free climbing." Free climbing is not permitted under any circumstances.

## 10.7 Anchorage Points

- All anchorage points for personal fall arrest systems shall be capable of supporting 5,000 pounds per person attached. It is the responsibility of the Authorized/Competent Climber to ensure their attachment point meets the requirements of an improvised anchor point.
- Whenever possible, an overhead anchorage point should be selected to reduce contact hazards and forces associated with a fall.
- Step-bolts may not be used as fall arrest anchorage points.
- Anchorage points for vertical and horizontal lifelines shall be independent of any other system and shall be capable of supporting 5,000 pounds per person using the anchorage. A Qualified Person must install these systems.
- All safety lines and lanyards shall be protected against being cut or abraded.
- Synthetic ropes used in vertical lifelines shall have a minimum breaking strength of 5,600 pounds (25kN). Lanyards used with vertical lifelines shall not exceed 3 feet in length.
- When more than one person is using a horizontal lifeline for fall-arrest purposes, the lifeline shall be capable of supporting 5,000 pounds per person (maximum of two people are permitted on a single horizontal lifeline at any one time unless otherwise specified by the manufacturer).

**10.8 Full-Body Harness**

- A PFAS shall include a full-body harness that s properly fitted to the user and utilized to manufacturer's specifications.
- The use of a body-belt is prohibited as an approved PFAS.

**10.9 Connecting Devices**

- A twin-leg shock-absorbing lanyard shall be utilized to attach from the full-body harness to an approved anchor of connection point.
- Connecting devices used to attach a full-body harness to anchor shall be connected to the dorsal d-ring in the center of the wearer's back.
- Snap hooks and carabineers shall have a minimum of two deliberate actions required to open. These devices must be self-locking and shall not be connected to each other.
- Snap hooks and carabineers shall be capable of sustaining a 5,000 (22.2kN) pound tensile load and a gate strength rated at 3,600 (16kN) pounds.
- Connection devices, including carabineers, cross-arm straps, self-retractable lifelines, snap hooks, cable/rope grab, lanyards, etc., shall be utilized to manufacturer's specifications.

**10.10 Dropped Object Prevention**

Prior to utilizing dropped object prevention products, the work tasks should be evaluated to eliminate or reduce the potential for dropping an object. This could include modifying work methods and utilizing alternative tools.

- Personnel working at elevations greater than 6 feet and where the possibility exists, that an object could fall to a lower level, are required to secure tools and equipment when they could injure a person or create damage to the work area below.
- Hard hats and additional personal protective equipment are required for all team members at worksites.
- Dropped object protection zones should be established, where feasible, below work areas. Dropped object zones are to be clearly marked with barricades or caution/danger tape to restrict access. Only team members directly engaged in the activity conducted overhead will be admitted into a Dropped Object Zone.
- While using anchorage points attached to a worker's body, tools shall not be stowed away from the body (i.e. in a tool bag hanging from the man-basket). Conversely, tools shall not be stowed on the body if anchorages are separate from the workers body.
- Tools and equipment that may require tethering include:
    - Hand tools, including screw drivers, hammers and wrenches;
    - Power tools;

    - Test equipment
- New tools and equipment shall be evaluated to determine how to attach dropped object prevention equipment (lanyards, connectors and connection points) properly. Tool geometry, weight and other characteristics must be considered when determining how to properly attach tools to dropped tool prevention equipment. Consult with the SBA Safety Department to determine proper techniques for tethering tools.
- Use only components that have been tested to the ANSI/ISEA 121-2018 standard for the manufacture of dropped object prevention devices and are approved by the Safety Department prior to use. It is recommended, but not required, that all parts of the tethering system be from the same manufacturer whenever possible.
- Tools attached to a team member's wrist or body shall not exceed the weight limits recommended by the manufacturer
- Generally, weight capacity guidelines for anchoring tools and tool containers are as follows:
    - If the tool weighs less than 5lbs (4.5kg), it can be anchored to the body (wrist, tool belt or fall protection harness) if desired.
    - If tool weighs greater than 5lbs (4.5kg), it must be attached to an anchorage point.
- Do not exceed the manufacturer's load maximums for their tether systems. For example, if a tether's load rating is five (5) pounds and the attachment point's load rating is two (2) pounds, the tethering system would be limited to the lessor of the two load ratings of two pounds.
- Tool/material buckets and tool organizer boards meeting ANSI 121 may be utilized to store and anchor objects. The bucket shall be secured to an approved anchorage point.
- Tool/material buckets shall be sized and have a closure system suitable to tools/materials being utilized.
- Tools shall not be modified to create effective attachments. This is to maintain the functionality of the tool and products like D-rings, self-vulcanizing tape, tool cinch attachments, and quick spins and rings can be used to achieve attachment without forfeiting functionality.
- Dropped tool prevention components shall be inspected daily prior to use.
- Team member-owned tools and tethering equipment are subject to rules contained herein.
- Maintain all manufacturer use recommendations and requirements.

### 10.11 Rescue for Elevated Work

- All contractor personnel responsible for onsite emergency rescue shall be trained meeting the requirements of the latest revisions of the ANSI/ASSE A10.48 and ANSI/ASSE Z359.
- Prior to any elevated work, the work crew will hold a tailgate meeting to discuss the written site-specific rescue plan.
- When two Authorized/Competent climbers are onsite and the scope of work requires both climbers to conduct elevated work, the following must be adhered to:
    - Must have a means of communication to a third party (Supervisor/emergency services personnel).
    - Rescue equipment must be attached at the elevated position prior to the start of work activities
- To ensure rescue procedures are communicated to each crewmember, the crew will review the Pre-Work Assessment/JSA identifying all necessary rescue procedures.
- First-Aid/CPR should be administered to an injured person by a trained team member until emergency medical services arrives.
- Following the rescue, immediately contact the SBA Safety Department for further instruction.
- The site and all equipment shall be secured until a proper incident investigation can be conducted.

### 10.12 Portable Ladders

- Ladders must be rated for industrial or heavy-duty use (Class 1A) and the user must comply with the manufacturer's recommendations.
- All ladders shall be inspected for defects or damage prior to each use. Damaged ladders must be removed from service.
- Face the ladder and maintain three points of contact while ascending and descending the ladder.
- The ladder must be secured to prevent displacement. If not applicable, the ladder must be footed to prevent displacement.
- Do not carry or lift any material while ascending or descending a ladder.
- Do not use metal ladders around or near electrical equipment.
- Do not tie ladders together.
- Correct slope for a straight/extension ladder is 4.1.
- When an extension ladder is used to access an elevated work location, the ladder must extend 3 feet above the work location.
- Step-ladders must be used in the open and locked position.
- Do not stand or step on the top platform or top step.

### 10.13 Scaffolds

- Only approved scaffold contractors shall serve as the Competent Person for scaffold assembly, disassembly, alteration, movement, inspection and repair.
- Scaffolds shall be inspected before each work shift.
- Guardrails, mid-rails, and toe-boards shall be installed on all open sides or edges.
- Place scaffolds on secure footing. Unstable objects, such as boards, boxes, loose brick or hollow concrete block must not be used.
- Report any damage immediately.
- Do not climb on or work from the cross bracing, top-rail, or mid-rail of a scaffold.
- Use approved fall protection equipment if guardrails are not used.
- Equip scaffolds with ladders and do not climb structural members.
- All scaffolding work must be approved by the SBA Safety Department.

## *11.0 Electrical Safety/Lockout Tagout*

All contractors shall be informed of the existence and associated hazards posed by energized electrical systems that exist on the project site through the Pre-Work Assessment.

All electrical circuits must be placed into an "electrically safe work condition" (i.e., de-energized, locked and tagged out, and tested or verified prior to performing work on the electrical components, equipment and wiring, etc.). Working on "live" energized electrical components, equipment, and wiring is not permitted, except when de-energizing the equipment introduces additional or increased hazards or is feasible due to equipment design and operational limitations. Contractors must use trained Qualified Electrical Workers when working on, exposed to 50vac, or greater, in accordance with the latest revision of NFPA 70E.

### 11.1 Electrical Hazards

Potential electrical hazards include:

- Contact with battery terminals during installation and maintenance.
- Contact with exposed electrical circuits when opening panels, making connections, troubleshooting, replacing lighting, and alarm testing.
- Contact with exposed energized circuits or wiring due to damage, defects, or excessively worn electrical equipment/components.
- Failure to use ground fault circuit interrupters (GFCI's).

- Installation of temporary and permanent power supplies for telecommunication equipment.
- Contact with underground and overhead electrical power lines.

### 11.2 Safe Electrical Work Practices

- Working space and clearances – Maintain adequate clearances
- Work near overhead power lines – Any non-qualified person, vehicle, or mechanical equipment work in an elevated position near overhead power lines must maintain at least a 10 foot clearance (in reference to the closest conductive object near the power line) for voltages to ground of 50kV or below and an additional4 inches for every 10kV over 50kV.
- Labeling and marking of electrical equipment – All distribution equipment, panels, and cabinets of 50 volts or higher will be clearly labeled identifying the voltages present and for general arc flash hazard warning. Every disconnect means shall be clearly labeled to indicate which electrical component it controls.
- GFCI's – Shall be used for all construction work activities. Portable GFCI's must be installed at the power source.
- Voltage-rated/insulated tools – All work on electrical components, equipment, and wiring will be done only using insulated tools rated for at least the voltage present in the system on which work is being performed.
- Flexible cords:
    - Flexible cords (extension cords) used with grounding-type equipment must contain an equipment-grounding conductor. No flat cords.
    - Flexible cords and cables shall not be used as a substitute for the fixed wiring of the windows, or similar opening, attached to building surfaces, or concealed behind building walls, ceilings, or floors.
    - At no time shall flexible cords be spliced or taped together.
    - Portable cord equipment, plug-connected equipment, and flexible cord sets must be visually inspected before each use on each shift for external defects and evidence of possible internal damage.
    - DO NOT use flexible cords to raise, lower, or pull portable equipment.
    - Ensure hands are dry when plugging and unplugging flexible cords and extension cords.

### 11.3 Electrical PPE

- Selection, maintenance and use shall be in accordance with the latest revisions of NFPA 70E. Wear the level of PPE suitable for protection against the electrical and arc flash hazard that exists, as indicated on the arc hazard warning label on the equipment. It is the responsibility of the Qualified Person to wear the proper PPE suitable for protection against the electrical hazards present. Some examples of approved PPE are as follows:
    - Dielectric insulated gloves that are Class 00 (500VAC) rated voltage gloves.
    - Face shield and electrically rated face shields.
    - Fire retardant clothing, clothing made of natural fibers, nomex or PBI filters.
    - Wearing conductive jewelry or clothing (e.g., watchbands, bracelets, rings, necklaces, key chains, cloth with conductive thread) while performing electrical work is strictly prohibited.

## *12.0 Manual Material Handling and Lifting*

All materials shall be properly stacked and secured to prevent sliding, falling, or collapse. Aisles, steps, and walkways shall be kept clear for the safe movement of personnel and equipment. Storage areas shall be kept free of materials that present hazards such as tripping, fire, and blocked emergency exits and walkways.

Prior to manually lifting or moving materials, assess the lift to determine if assistance is needed. Considerations to determine if assistance is needed include:

- Object weight
- Size and shape
- Hand holds
- Path of travel (from where/to where)
- Personal physical ability

Use proper lifting techniques when handling materials:

- Establish good footing before attempting to lift.
- Do not lean over. Keep your back straight.
- Bend at the knees and not at the waist.
- Bend your knees and get down close to the load.
- Use your legs when lifting.
- Avoid overhead lifting and twisting.
- Whenever possible use mechanical aids to reduce the amount of lifting (pallet jack/carts/forklift/wheelbarrow).
- Consider utilizing the buddy system, if applicable.

## *13.0 Cranes, Hoists, and Rigging*

All contractors shall be informed of the existence and associated hazards posed by work activities involving cranes, hoists and rigging through the Pre-Work Assessment.

### 13.1 Cranes, Hoists and Boom trucks

- All crane operators shall be trained and certified through National Commission for the Certification of Crane Operators (NCCCO).
- Crane must be inspected annually, and supporting documentation must be maintained onsite.
- Crane operator must perform a documented daily visual inspection.
- Any deficiencies noted during the inspection shall be properly addressed prior to crane operations.
- A 10-pound ABC fire extinguisher must be present at the operator's station.
- A crane-specific load chart must be maintained in the cab of the crane.
- Boom angle indicator must be visible from operator's station.
- A competent rigger and/or signal person must be available onsite for lifting operations.
- Outriggers with rubber-tired cranes must be used. Use of steel plates or solid wood for outrigger cribbing is required.
- Weight of crane must be off the tires.
- Barricade the counterweight swing area.
- Hoist assemblies shall have a positive means of attaching the wire rope to the drum, maintaining a minimum of three wraps of wire rope of the drum, and maintaining wire rope on drum 3 inches below top of flange. Hoist assemblies shall be equipped with a primary and secondary brake system that is capable of holding 125% of the hoist lifting capacity.
- Hoist brakes shall be capable of controlling descent of the load and stopping the load (without shock loading).
- Hoist controls shall be easily accessible, clearly marked, be capable to start/stop emergency conditions, and be maintained to operate as designed.
- Hoists that are overloaded or repaired shall be inspected and load tested prior to being returned to service.
- Loads shall not be lifted over personnel nor is work to be performed under suspended loads.
- Tag lines shall be used to control the load.

- Critical lifts – Critical Lift Permit shall be completed prior to all lifts which if collision, upset, or dropping the load could involve any of the following:
    - Lifting of personnel over hazardous areas;
    - The load exceeds 75% of the crane capacity as shown on the manufacturer's load charts for the crane configuration to be used; and
    - Lifts utilizing more than one crane (tandem lifts) handling a common load.

### 13.2 Capstans

- The number of wraps of rope on the capstan drum shall be consistent with the weight of the lifted load and manufacturer's recommendation.
- The number of wraps on the drum shall be limited to prevent the rope from riding over the end of the drum.
- Precautions shall be taken to prevent entanglement of other lines with the capstan rope.
- A rope splice shall not be in contact with the capstan drum.
- Capstans shall not be used without the ease of a foot pedal with positive "off."
- Ropes shall be removed from the drum of the capstan when not in use.
- Capstans shall not be used to raise or lower personnel. Tag lines shall be used to control the load when hoisting.
- Based on load weight, use the same number of wraps on the drum to raise the load or to lower it.
- Heel blocks should be considered during lifting operations based upon the lifting plan.

### 13.3 Gin Poles

- All gin pole use must be conducted in compliance with the latest revisions of ANSI A10.48 and TIA 322
- The SBA Vice President of Risk Management, Senior Director of Risk Management or Director of Safety must approve and authorize in writing approval for gin pole use.
- Only engineered and manufactured gin poles with certified capacity ratings shall be used on any SBA site (homemade gin poles are not permitted).
- All gin poles must be annually certified/inspected.
- A load-rating chart provided by the manufacturer shall remain with the gin pole at all times.
- Gin poles shall be inspected during assembly prior to use on a specific project, after any abnormal occurrence, and annually. Onsite inspections can consist of a visual inspection and be performed by site personnel knowledgeable in use of the gin pole. The annual inspection shall be a more thorough inspection that is documented and performed by a qualified person.
- Lubrication of the "rooster head" bearings and pulleys should be performed prior to placing the gin pole into use.
- Gin pole splice/connecting bolts shall be replaced with new splice/connecting bolts prior to each assembly.
- Sizing and adjustment of the side plates and sheave should be considered to ensure smooth and safe movement of the wire rope through the rooster head.
- Tracks to guide and support the gin pole should be in place and properly adjusted to ensure the load is secured.
- Tag lines shall be used to control the load.
- A plan shall be in place to prevent the gin pole from tipping during the jumping process.
- ***Riding gin poles are prohibited at all times.***
- ***Riding the hoist line is prohibited without the expressed written permission from the SBA Safety Department using the NTP Request process***

### 13.4 Rigging

- Riggers must receive formal training on basic rigging, configuring a load, and rigging components.

- Rigging Plans/Construction Plans must be developed for all construction classifications per the latest revisions of ANSI A10.48. All Class II, III and IV plans must be documented. Class IV plans are required to be reviewed and accepted by the SBA Safety Department.
- Signal persons must receive formal training on OSHA-specified crane signals and safe lifting practices.
- The design, construction, inspection, maintenance, and operation of slings, shackles, links, blocks, lifting eyes, hooks, and other lifting components shall be in compliance with applicable regulatory and manufacturer requirements.
- All rigging and hoisting components shall be stamped or tagged with appropriate load ratings/capacities. (Examples: working load limit-WLL, safe working load-SWL, hand-line block-HLB)
- Shackles are required to be utilized for top block connection devices. Carabineer use is prohibited for top block connection.
- Any component marked with kilo newton (kN) may not be used as a rigging device.
- Homemade rigging components are prohibited.
- All workers rigging loads, shall inspect all rigging and lifting devices prior to use.
- If defects are found, the equipment must be taken out of service and tagged (Danger, Do Not Use, Defective or Destroyed).
- Know the weight of the load being lifted and the capacity of the lifting equipment.
- Do not secure or shorten slings by knotting or using bolts.
- Pad or protect slings from sharp edges.
- Be aware that when using cable clamps on wire rope, the “U” section must be in contact with the dead end of the rope.
- Loads shall be centered in the lifting component and hooks should never be tip or back loaded.
- Use only hooks with a spring-loaded safety latch.
- Use a shackle whenever more than two-choker eyes are placed on a hook.
- Do not exceed a sling to load angle of 30 degree.

## 13.5 Personnel Hoisting

The following section identifies the safety requirements involved during hoisting personnel using cranes/man-basket and aerial lifts. The section does not include the following methods for hoisting personnel:

- Man-rated base mounted/drum hoists
- Gin Poles
- CPL 2-1.36 (Riding-the-line, ball or load)

These methods shall be considered as a last alternative when conventional means of accessing a tower have been reviewed and considered not feasible. ***These methods are prohibited without authorization from the SBA Safety Department. All requests must be in writing.***

### 13.5.1 Aerial Work Platforms/Man-basket

#### 13.5.1.1 Job Planning

The use of aerial work platforms shall only be used when no safe alternative personnel lifting method is feasible. A Personnel Hoisting Permit/document must be completed and all requirements must be fulfilled before hoisting any personnel. All elements of the permit/document prior to the lift and include:

- Job information
- Rating of lifting equipment
- Equipment inspection
- Pre-lift meeting

- Trial lift/proof test
- Approval signatures

The crew will complete the permit/document each day of the project and any time there is a change made to the crane location, rigging equipment, load or design of the lift. This document must be maintained and available for review at the jobsite until the job is complete.

#### 13.5.1.2 Crane /Man-basket

- The crane shall have proof of the annual inspection onsite.
- The crane must have a boom angle indicator that is visible to the operator. Cranes with telescoping booms must be equipped with a device that clearly shows the boom's extended length or the load radius must be accurately determined before hoisting personnel.
- The crane must be equipped with an operational anti-two block device.
- The crane load line shall not be constructed of rotation-resistant wire rope.
- The crane must be within 1% level and outriggers should be placed on uniform cribbing.
- Hooks shall be equipped with a positive locking safety latch.
- The combined weight of the loaded platform and its rigging must not exceed 50% of the rated capacity of the crane.
- Tag lines shall be used to prevent the aerial work platform from contacting the structure during hoisting. Specific circumstances or condition that precludes its use, must be documented.
- The personnel platform must be designed with a minimum safety factor of five and must be designed by a qualified engineer or qualified person who is competent in structural design.
- The platform must have a permanent marking or plate showing the rated capacity and the platform's weight. The load of the personnel platform may not exceed its rated capacity.
- The personnel platform must be provided with a standard guardrail system that is enclosed from the toe-board to the mid-rail. The platform will have a grab rail, overhead protection when needed, and adequate headroom. If an access gate is provided, the gate must have a locking device in place during hoisting.
- Workers will use PFAS as specified by the Personnel Hoisting Permit and attach a lanyard to the personnel platform.
- Workers shall keep all body parts inside the platform during raising, lowering, and positioning.
- Workers shall work from the platform floor; ensure platform is secured prior to exiting or entering.
- All materials and tools must be secured to prevent falling from the platform.
- Hoisted personnel shall stay in direct view or communication with the crane operator at all times. In some cases, a signal person may be used.
- Stop all hoisting operations during high winds or inclement weather.

#### 13.5.1.3 Pre-Lift Meeting

- Contractors will conduct a pre-lift meeting prior to the load test, trial lift, and inspection. The pre-lift meeting will be repeated each time a lift is performed from a new location, new day, or when a new worker is assigned to the operation. Contractor personnel, crane operator, and any other workers will attend the pre-lift meeting to discuss the following:
  - Communications
  - Verbal/hand signals/radio
  - Hoisting procedures

- Lift test, proof test, and inspections

#### 13.5.1.4 Proof Testing, Trial Lift, and Inspections

Immediately prior to placing personnel on the hoist line, the crane operator with the crew shall conduct a trial lift, proof test, and inspection. All proof tests, trial lifts and inspections shall be documented and remain onsite until the project is complete.

The crew will conduct a proof test to 125% of the platform's rated capacity by holding it in a suspended position for five minutes with an evenly distributed load. Once the proof test has been conducted, the crew will perform a trial lift. The trail lift will be performed from the ground to the location to which the workers will be hoisted. The hoist operator shall determine that no interference exists.

After the proof test and trial lift are complete, the Competent Person shall perform an inspection of the following:

- Wire ropes to ensure they are properly seated on drums and sheaves
- Hoist, base support, and foundation
- Multiple part lines to see that they are not twisted

If defects are found during inspections, corrections must be made and the proof test, trial lift, and inspections must be repeated. The proof test, trial lift, and inspections must also be repeated whenever the hoist is moved or at the beginning of each day during multi-day projects. Site shall be inspected for overhead utilities and any other overhead obstructions.

#### 13.5.1.5 Mobile Elevated Work Platform (MEWP)

- For the purpose of this document, aerial lifts include scissor lifts, single person vertical lifts, and articulating boom lifts.
- Operators shall read and comply with all warning signs and become familiar with the aerial lift operator's manual.
- Ensure operators receive documentation of aerial lift orientation from the equipment rental company or manufacturer when the equipment is delivered to the jobsite.
- Do not utilize the aerial lift to hoist construction materials or exceed the platform capacity or weight limits.
- Use lift only to hoist personnel and small hand tools.
- Maintain 100% fall protection within the platform/basket.
- Attach PFAS to approved anchor points inside the platform/basket. Do not attach PFAS to a point outside the platform/basket when working form the platform/basket.
- Operator of the aerial lift shall perform and document a visual inspection prior to use.
- Do not stand on mid-rail or top-rail of platform to access work position. Keep feet on the platform's floor, at all times.

### 13.6 Synthetic Ropes

- Synthetic ropes minimum breaking strength (MBS) be de-rated 10:1 (ANSI A10.48. section10.5.1.2a) to determine its working load limit (WLL).
- Rope shall be inspected daily prior to each use. Storage and inspection criteria include:
  - Abrasion or fraying
  - Glazing
  - Uniformity or diameter
  - Discoloration
  - Exposed core
  - Age

- Chemical or UV deterioration

## *14.0 Electromagnetic Energy*

All contractors shall be informed of the existence and associated hazards posed by electromagnetic energy (EME) through the Pre-Work Assessment. EME hazards may exist at communication transmission sites that are active in terms of the potential to emit radio waves (i.e. radio frequency – RF).

### 14.1 Definitions

- Maximum Permissible Exposure (MPE) – The maximum permissible exposure is a maximum level of exposure that is specified by the Federal Communications Commission (FCC). The MPE is based on frequency and power. The occupational/controlled MPE applies in areas where exposure is related to employment duties. The general population/uncontrolled MPE applies to persons assumed to have no knowledge of or control over their potential exposure to EME energy.
- Electromagnetic Energy (EME)/Radiofrequency Energy (RF) – RF is a form of EME used for transmitting radio signals. EME/RF is a type of non-ionizing radiation. Main hazard is tissue heating. Other examples of non-ionizing radiation include laser, radar, microwaves, UHF/VHF, AM/FM broadcast, paging systems, and infrared. Damage to the body from EME/RF exposure is dependent upon time, distance and shielding form the EME/RF source.
- Time averaging – Maximum permissible exposures are expressed as time-averaged exposures (typically 6 minutes for occupational/controlled MPE). The use of time averaging to regulate total exposure allows an individual to work in an area with higher energy levels for shorter durations.

### 14.2 Four Criteria for Entering a Controlled RF Environment

- EME/RF safety awareness training
- Site RF signage
- Site security
- MPE data

### 14.3 General Work Practices

- Compliance with OET Bulletin 65 – Evaluating Compliance with FCC Guidelines for Human Exposure to RF is required.
- Assume all antennas are active
- Before working on antennas notify owners and disable appropriate transmitters. Work on a specific antenna should only be accomplished after the attached transmitters have been turned off. This should be attempted only after contacting the owners or operators. Coordination will help ensure that turning off the equipment will not cause serious disruption of the service.
- Maintain safe clearance from all antennas. A small increase in distance from an antenna can have a substantial effect on reducing the EME exposure.
- Do not stop in front of antennas.
- When climbing a tower, workers should select rest points away from antennas. Workers should always try to keep below or behind antennas to minimize their exposure to the main beam of the antenna.
- Use personal EME monitors while working near antennas. When multiple personnel are working at an EME site, the “highest risk” person (the one who will be working closest to the antennas) should be the one wearing the monitor.
- Never operate transmitters without shields during normal operation.
- Do not operate base station antennas inside equipment rooms. Using antennas inside equipment rooms can increase the exposure to EME levels above FCC guidelines and create undesirable radio frequency interference.

- Antenna sites must have physical access control. This is accomplished by fencing around the compound.
- When other transmitters are involved, power reduction, lockout/tagout, or other control procedures may be necessary.

### 14.4 Electromagnetic Energy Site Signage

The FCC has developed guidance for EME/RF site signage through the use of zones (blue, yellow, and red). To comply with FCC site signage requirements, radio tower and rooftop sites shall be posted in accordance with the following:

- Blue Zone (Notice) – The blue zone is an area where the time-weighted exposure is below 20% of the occupational/controlled MPE. There is no time limit or special work practices required for this zone and only basic EME awareness is needed.
- Yellow Zone (Caution) – The yellow zone is any area where the time weighted exposure is between 20%-100% of the occupational/controlled MPE. In this zone the energy fields are within acceptable exposure limits; however, areas adjacent may exceed acceptable limits. Only personnel with the appropriate training, knowledge, and understanding of EME procedures should work in this area.
- Red Zone (Warning) – The red zone is any area where the time weighted exposure levels at or above 100% of occupational/controlled MPE. Areas determined to require red zone classification require special procedures, engineering controls, and restricted access. Examples of the procedures that may be implemented include:
  - Restricted site access;
  - Lockout/tagout of transmitter equipment during maintenance;
  - Re-engineering site to reduce EME fields; or
  - Control of antenna types used on the site.
- Induced Current/Contact Current (Danger) – RF induced current/contact current exposure exists when the potential for shock or burn from low frequency EME is present. AM towers and AM de-tuned towers present the greatest hazard for induced/contact current hazards. Contractors shall avoid contact until other protective measures (i.e., reducing power levels, grounding, reduce time and distance) are in place.

### 14.5 Personal Protective Equipment for EME/RF

Particular sites or types of EME/RF hazards may warrant the need for specialized PPE. Each contractor must inspect the PPE to ensure it is in good condition prior to each use.

## *15.0 Excavations and Trenches*

All contractors shall be informed of associated hazards posed by excavations and trenches through a Pre-Work Assessment and Daily Excavation Inspection form. Excavations on SBA sites include utility trenches, foundations and pier excavations.

### 15.1 General Requirements

- Utilities shall be identified by ground locate (811) prior to starting any excavation.
- A designated Excavation Competent Person shall be utilized for excavations exceeding 5 feet in depth, which require entry.
- Trenches 5 feet or deeper will require proper shoring or sloping based upon soil classification and in reference to geotechnical tables.
- All spoils must be placed a minimum of 2 feet from the edge of the excavation.
- Excavations 4 feet in depth or greater must have a stairway, ladder ramp, or other safe means of egress within every 25 feet of lateral travel.
- No contractor may enter an excavation exceeding 5 feet where water has accumulated without water being controlled and excavation reassessed by the Excavation Competent Person.

- Excavations where a hazardous atmosphere may exist shall be tested for potential hazardous atmosphere. These spaces may be classifiable as a permit-required confined space.
- Reinforcing steel used in excavations shall be protected with metal-plated rebar caps or other suitable protection to prevent impalement.
- Excavations left overnight must be protected and secured from unauthorized entry.
- All equipment shall be inspected prior to use and operated in accordance with manufacturer's recommendations.

### 15.2 Soil Classifications for Excavations Exceeding Five Feet

The Excavation Competent Person must classify the excavation soil accordingly. Soil classification requires two types of testing one visual and one manual.

- Stable Rock – Natural solid mineral material that can be excavated with vertical sides and will remain intact while exposed.
- Type A Soil – Examples include clay silty clay, sandy clay, clay loam, and sometimes-silty clay loam and sandy clay loam.
- Type B Soil – Examples include silt, silt loam, sandy loam and sometimes-silty clay loam.
- Type C Soil – Examples include granular soils like gravel, sand, loamy sand, submerged soil, and soil from which water is freely seeping, and submerged rock that is not stable.

### 15.3 Inspections of Excavations Exceeding Five Feet

All excavations shall be inspected by an Excavation Competent Person daily before entry; and

- At the start of each shift;
- After rain or snowfall;
- After freezing and/or thawing temperatures occur; and
- After any condition that can change the integrity of the soil.

During rainy weather, work in excavations shall cease until the Excavation Competent Person has evaluated the excavation and the effect the rain is having. The Excavation Competent Person will need to maintain a regular inspection schedule during the rain if contractors will continue to work in the excavation.

## *16.0 Hand and Power Tools*

When utilizing hand and power tools, the manufacturer's guidelines must be followed at all times.

### 16.1 Power Tools

- Tool manufacturer guards shall remain in place and unaltered.
- Point-of-operation guards may require ongoing adjustment to perform correctly (portable grinders) or may be self-adjusting (circular saw blade guard).
- Electric hand tools shall be double insulated.
- All electric hand tools when used in the field shall be plugged into a GFCI receptacle or be equipped with GFCI protection.
- Pneumatic power tools shall be secured to the hose by some positive means (i.e. quick connect).
- Never use air hoses or extension cords for raising and lowering tools and materials to and from the work area.
- All fuel-powered tools shall be in the off position during refueling or while performing maintenance repairs.
- Safety glasses are required while using power tools.
- Hearing protection is required if sound levels exceed 90 dB over an 8 hour time weighted average (TWA) – (Circular saw, portable grinders, many other power tools).

- The contractor shall remove any tool not in proper working order from service.

### 16.2 Hand Tools

- Use hand tools that are in good condition and intended for the work to be performed.
- Hammer and sledge handles and heads should be inspected for damage, and swing radius checked for other workers.
- Chisels and punches should be inspected prior to use.
- Wrenches and pliers should be inspected prior to use for cracks, oil/grease, and worn or damaged grips. Wrenches shall not be paired with other tools as a lever or for unintended use.
- Handsaws shall be inspected prior to use for defects and cracked worn blades. Store saws so that there is no chance for someone to fall onto a bump into their blades.
- Appropriate PPE must be worn when using tools.
- All hand and power tools shall be inspected prior to use for defects, damage, or excessive wear that may present a hazard during use.

## *17.0 Forklifts*

Prior to operating a forklift, operators must successfully complete training and able to provide certification for the type of forklift being operated. All operators are expected to operate a forklift in accordance with OSHA standards for truck operations, travelling, and loading.

Forklifts shall be inspected and documented at the start of each shift for proper operation and safe condition before operating. The forklift's operation manual must be readily available and legible.

## *18.0 Hot Work (Cutting/Welding/Grinding)*

All contractors shall be informed of the hazards created by hot work (cutting/welding/grinding) through the Pre-Work Assessment.

Hot work includes any spark or heat producing work including torch cutting, arc welding, and grinding the tower structure and components. The following provides the minimum guidelines regarding the hazards and safety precautions necessary to reduce the potential for fires and explosions associated with hot work:

### 18.1 Pre Planning Hot Work Activities

- Identify material to be welded or cut (carbon steel, galvanization, stainless, etc.).
- Review the hazards associated with the material being welded and cut using the Safety Data Sheets (SDS).
- Assess site for flammable and combustible hazards including coax, bird nests, vegetation, buildings, fuel, cardboard, wood, etc.
- Identify the required PPE (eye, face, body, etc.). Use appropriate PPE (i.e. welding hood, cutting googles, leather gloves) when cutting or welding. Synthetic materials (e.g. polyester) that melt easily should be avoided. When required, workers must wear appropriate respiratory protection.
- Identify the required tools. When selecting tools, select on the basis of reducing or eliminating heat, sparks and flames.
- Identify fire prevention equipment/methods and review placement locations.
    - Fire extinguishers (minimum of two fully charged 10 pound ABC fire extinguishers)
    - Fire blankets
- In cases where combustibles cannot be moved at least 35 feet away from the work area, an adequate water source must be available. A water tank with self-powered pump and hose of adequate size should be utilized for pre-wetting and extinguishment operations.

- Review onsite personnel for proper training in fire prevention and fire watch. A trained Fire Watch shall be assigned whenever hot work is performed. The Fire Watch shall maintain a continuous uninterrupted watch over hot work operations during and for 30 minutes thereafter. Hot work may require multiple fire watches.
- Review certification for welders, climbers, and site personnel.
- Plan for proper storage and transport of oxygen and fuel cylinders.
- Evaluate the need for additional safety precautions when performing simultaneous hot work activities.
- Develop site-specific fire prevention plan.

### 18.2 Pre-Work Activities

- Complete the Pre-Work Assessment and other required documents.
- Inspect all tools and equipment.
- Reciprocating saws and metal cutting circular saws/grinders with carbide blade/disc and depth gauge are recommended for cutting structural steel.
- Before cutting or welding, inspect the area for flammable or combustible materials. Where practicable, relocate all combustibles at least 35 feet away from the worksite.
- Where relocation is impractical, combustibles must be protected must be protected with fire blankets or wet down to help prevent ignition of material. Adequate sources of water must be available.
- Install temporary ¾" plywood covers over ice bridges and vulnerable equipment to protect against possible fire and falling materials.
- Coax cables (internal and external) shall be bundled to maintain a minimum 6 inches of clearance from the surface of any section to be cut or take other measures to protect cables from heat, sparks, embers, and flames.
- Ensure fire protection equipment is in the proper locations for the scope of work.
- Ensure trained fire watch personnel are in the proper locations.

### 18.3 Compressed Gas Cylinders Safety Precautions

- Always store cylinders in an upright position, capped, secured, and protected from being struck.
- Do not store oxygen cylinders within 20 feet of flammable gases.
- Cylinders being transported and stored should have regulators removed and valve protection caps in place.
- All gas fittings and connections should be free from oil, grease, and excess dirt, prior to fitting to the torch or regulator.

## *19.0 Housekeeping*

During project planning, considerations must be made for proper storage/staging of materials and the adequate disposal of scrap and waste. Assessing the safety and fire hazards associated with poor housekeeping practices and abiding by the following requirements are critical to eliminating worksite fires, incidents, and injuries.

### 19.1 General Requirements

- Bags, containers, bundles, etc., stored in tiers shall be stacked, blocked, interlocked, and limited in height so that they are stable and secure against sliding or collapse.
- Walkways must be maintained with 3-foot clearance from all stored material.
- Floors, walkways, stairs, rooftops, and platforms must be kept free of loose items, debris, and greasy, wet, or dirty surfaces.
- Hand tools, construction materials, and debris shall be stabilized and secured from movement when utilized for overhead work on platforms, catwalks and scaffolds.

- Materials, waste, and debris must be stored in a manner that does not present a fire hazard.
- Open burning of construction debris and waste material is not permitted.
- Electrical cords, ropes, or other similar materials must be routed to minimize the potential for trips and falls.

### 19.2 Fire Prevention/Protection

- Use approved metal safety cans for storage and dispensing of flammable liquids (i.e., gasoline, kerosene, and diesel fuel).
- If 25 gallons or more of flammable liquids are onsite, they must be stored in a flammable storage cabinet when not in use.
- Store flammable materials in a well-ventilated area.
- Portable fire extinguishers shall be accessible within 10 feet of flammable liquid storage.
- Areas in which flammable liquids are transferred shall be separated from other operations by 25-foot distance or by a fire-resistant barrier. Secondary containment or other means of spill capture shall be provided to control leaks and spills. Adequate natural or mechanical ventilation shall be provided.
- Oily or flammable liquid soaked rags or waste shall be disposed of in labeled metal containers with tight fitting lids.
- Combustible materials (e.g., wood, paper, and packaging) shall be stored and protected from sources of ignition.
- Storage areas shall be kept free from accumulation of materials that constitute hazards from tripping, fire, and explosion.

## *20.0 Hazard Communication*

### 20.1 General Requirements

- Contractors shall maintain a chemical inventory list and safety data sheets (SDS's) shall be available onsite for contractor review.
- All containers of hazardous materials must be labeled.
- If labels on original containers are found to be inadequate, illegible, or otherwise unacceptable, the material shall be disposed of by and approved chemical disposal contractor.
- All secondary container labels must be completed properly and the label applied before the transfer of the material into the container.
- SDS's for all hazardous material to which contractors are or may potentially be exposed shall be retained and made readily available.
- The contractor shall arrange for training of existing hazardous materials at the time of the initial assignment and whenever a new hazardous material is introduced into the work area.
- Contractors are required to maintain a chemical inventory for any chemicals with potential exposure effects that are brought onto the jobsite or produced on the jobsite, outside of consumer articles.
- All contractors must utilize the Global Harmonization System (GHS) label requirements and guidelines.
- All contractors have the right-to-know and understand the hazardous chemicals they use and how to work with them safely.

### 20.2 Waste Battery Storage

Lead acid batteries are exempt from universal waste and hazardous waste storage reporting requirements as long as the batteries are maintained intact, are not leaking, and are designated for recycling. However, the Superfund Amendments and Reauthorization Act of 1986 (SARA), also known as the Emergency Planning and Community Right to Know Act (EPCRA), with a

Threshold Planning Quantity (TPQ) of 1000 pounds. EPCRA Section 312 Tier Two reporting is required for non-automotive batteries if sulfuric acid is present in quantities of 500 pounds or more and/or if lead is present in quantities of 10,000 pounds or more. Under the Resource Conservation and Recovery Act (RCRA), spent lead-acid batteries are not regulated as hazardous waste when recycled. Spilled sulfuric acid is a characteristic hazardous waste; EPA hazardous waste number D002 (corrosivity) D008 (lead).

### 20.2.1 Maximum Allowable Quantity – Sulfuric Acid: 500 Pounds

- Average amount of sulfuric acid per battery by weight: 20% (battery weight (x) 20% = amount of sulfuric acid in battery).
- A 130 pound battery contains about 26 pounds of sulfuric acid. Since the maximum allowable quantity of sulfuric acid stored in one location is 500 pounds, the maximum number of 130 pounds waste batteries stored in one location is a total of 19 batteries.
- An 80 pound battery contains about 16 pounds of sulfuric acid. Since the maximum allowable quantity of sulfuric acid stored in one location is 500 pounds, the maximum number of 80 pounds waste batteries stored in one location is a total of 31 batteries.
- A 40 pound battery contains about 8 pounds of sulfuric acid. Since the maximum allowable quantity of sulfuric acid stored in one location is 500 pounds, the maximum number of 40 pounds of waste batteries stored in one location is a total of 62 batteries.

### 20.2.2 Identification and Decision-Making Process

- Identify sites where waste batteries will be recycled.
- Identify manufacturer and model of battery.
- Maintain/provide a copy of the current Safety Data Sheet (SDS).
- Identify the battery weight.
- By using the calculations above or by the information provided by the manufacturer, calculate the amount of sulfuric acid inside each battery.

**Note: Different size batteries will determine the maximum allowable quantity for storage.**

- Identify the maximum number of waste batteries that can be stored at the desired location.
- Package waste batteries on a pallet, shrink-wrap, and secure to pallet ensuring electrical contacts are protected.
- Package must be labeled with, “Non-Spillable Batteries.”
- The appropriate SDS must accompany the packaged waste batteries at all times.
- Upon arrival to the storage location, waste batteries must be stored in a specific waste battery storage area. Labeled, “Waste Battery Storage Area.”
- A copy of the SDS for the specific batteries in storage must be kept in a binder at the storage area.
- At no time, will there be more than 500 pounds of sulfuric acid stored in one location,
- At no time, will there be more than 10,000 pounds of lead stored in one location.

**Leaking or damaged batteries must be treated as hazardous waste. This requires proper training, PPE, and reporting. In the event a battery is found damaged or leaking, the client/supervisor must be notified and have a HAZWOPER-trained company remove and clean-up the leak prior to further battery removal.**

## *21.0 Concrete Work*

This policy provides the requirements for contractors regarding the hazards and safety precautions associated with concrete-related work activities. Relevant concrete work activities include site preparation, concrete formwork, ground level slab, pad and pier, caisson, and concrete pouring and finishing.

Health effects associated with unprotected exposure to concrete and concrete dust include:

- Dermatitis – Skin
- Conjunctivitis – eyes
- Silicosis – inhalation

### 21.1 Safety Precautions

Examples of safety precautions include PPE selection. Controlled access zones, equipment placement, identifying overhead hazards, and proper form use. Additional concrete work safety precautions include:

- If cutting or grinding concrete, a wet cutting method should be used to prevent exposure to silica dust. If dust masks or respirators are needed refer to the respiratory section of the applicable OSHA standards.
- Concrete work PPE includes rubber boots, rubber gloves, apron, safety glasses and face shields, along with long sleeves and long pants.
- If skin or eyes are exposed to concrete or concrete dust, flush with copious amounts of water.
- All protruding reinforcing steel (rebar, form supports, and stakes) which contractors could fall into shall be guarded to eliminate the hazard of impalement. Rebar caps with a top metal plate should be used to prevent impalement.
- Tools used in conjunction with concrete work shall be cleaned of excess concrete from previous work and inspected for defects or damage prior to use.
- All concrete forming equipment (including equipment used in re-shoring operations) shall be inspected prior to erection to determine that the equipment meets the requirements specified in the formwork drawings.
- Only qualified operators shall operate concrete pump trucks. Pump trucks contain augers that can harm unsuspecting contractors and be explosive in nature if a pipe becomes obstructed.
- Concrete and pump trucks should not set-up any closer than a 1.5 to 1 ratio from the bottom of the excavation.
- Other industry best practices for concrete work can be found in the latest revisions of ACI 304, ACI 336, ACI318, and ANSI A10.9.

## *22.0 Confined Space Entry*

The confined space guidelines provide the requirements for contractors regarding assessment, permitting, entry, and rescue procedures for confined spaces. Potential confined space work activities include entry into monopoles, water tanks, silos, vaults, and smoke stacks. Requirements for confined space work activities include, but are not limited to, confined space assessment, permitting, air monitoring, ventilation, training, PPE, and rescue/retrieval.

Entry into permit required confined spaces (PRCS) are not permitted without he written consent of the Safety Department. Contractors shall follow the requirement 29 CFR 1910.146 for all PRCS activities.

### 22.1 Classification of Confined Spaces

When accessing the workspace, the contractor must determine the following characteristics to establish whether the space is a confined space. Is the space:

- Large enough and so configured that a person can bodily enter and perform assigned work; and
- Has limited or restricted means for entry or exit (I.e., tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry/exit); and
- Is not designed for continuous human occupancy.

A non-permit confined space is a confined space that does not contain or, with respect to atmospheric hazards, have the potential to contain, any hazard capable of causing death or serious physical harm.

A permit required confined space that has one or more of the following characteristics in addition to the characteristics listed for confined space:

- Contains or has the potential to contain a hazardous atmosphere;
- Contains a material that has the potential for engulfing an entrant;
- Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section; or
- Contains any other recognized serious safety or health hazard

PRCS shall be labeled or posted by danger signs or by any other equally effective means. Trained personnel must perform all entry into a PRCS only. Contractors shall ensure that all confined space entrants, attendants, entry supervisors and rescuers meet OSHA 1910.146 training requirements.

## *23.0 Temperature Extremes*

### 23.1 Heat Stress Symptoms and Treatment

Working in hot environments can cause can cause several different types of health problems. The symptoms and recommended treatment measures are outlined in the table below:

| Condition | Symptoms | Treatment |
|---|---|---|
| Heat Rash | • Reddened, sensitive rash, usually located under arms, between legs, or around the waist | • Keep area clean<br>• Stress personal hygiene<br>• Change into clean shirt and/or underwear at mid-shift |
| Heat Exhaustion | • Flushed or reddened complexion<br>• Slightly elevated body temperature<br>• Profuse sweating<br>• Nausea<br>• Light-headedness<br>• Increased pulse rate | • Rest in a cool, shaded area<br>• Replenish fluids and electrolytes<br>• Do not return to work until pulse and temperature return to normal and nausea subsides |
| Heat Stroke | • Reddened complexion<br>• Absence of perspiration<br>• Elevated body temperature (+105° F)<br>• Nausea<br>• Unconsciousness | • Move victim to cool shaded area<br>• Remove any PPE or heavy clothing (coveralls, welding gear, etc.)<br>• Dowse victim with cool water<br>• Force liquids if conscious<br>• Notify emergency medical services / 911<br>***Note: These responses must be implemented immediately. Heat stroke is a life-threatening condition.*** |

### 23.2 Heat Stress Prevention

The elements of this section shall be implemented when working in warm climates. These elements are designed to minimize the potential for heat-related health complications. While these efforts have proved to be beneficial, their implementation cannot guarantee that workers will not suffer from heat stress.

### 23.2.1 Fluid Replenishment

- An ample supply of water supply of potable water shall be provided at the worksite.
- Water shall be maintained at a cool temperature, preferably between 40-60° F (4-15° C).
- Workers should be encouraged to consume between 8-16 ounces of water at every break.
- A supply of electrolyte-enhanced fluids (e.g., Gatorade) can be maintained at the jobsite in addition to the potable water. Workers can consume between 8-16 ounces of these fluids per day.

### 23.2.2 Breaks

- Breaks should be taken at regular intervals in a cool, shaded location. As temperatures increase, the number of breaks should increase also.
- Workers should immediately take a break if any of the symptoms of heat stress outlined in Section 23.1 are exhibited.

### 23.2.3 Miscellaneous Preventative Techniques

- Workers may opt out to use personal cooling devices, such as cold packs and cooling vests.
- Portable misting fans may be used during long periods of high temperatures.
- Wetting shirts or headbands may provide relief in very high temperatures.
- Workers should be advised to minimize or eliminate the use of alcoholic beverages during off-hours due to the diuretic effects of alcohol.

## 23.3 Heat Stress Monitoring

In addition to conducting visual observations of workers for signs of heat stress, the following steps should be taken to measure the potential ill effects of heat exposure. If a worker exhibits any of the following symptoms, the treatment measures listed in Section 23.1 are implemented.

- The worker's pulse rate is sustained for 3-4 minutes at a rate of 180 beats per minute (bpm) minus the worker's age.
- The worker's pulse rate is greater than 110 bpm one minute after a peak work effort.
- The worker has a core body temperature greater than 100.4° F (38° C).

## 23.4 Cold Stress Symptoms and Treatment

This section addresses the hazards and control measures associated with performing work in cold conditions. The potential for cold stresses is measured by a combination of ambient temperature, air movement, and the type of work being performed. The two primary types of cold stress are hypothermia and frostbite.

| Condition | Symptoms | Treatment |
|---|---|---|
| Hypothermia | • Shivering<br>• Pain in extremities<br>• Reduced mental alertness<br>• Core body temperature below 96.8º F (36º C) | • Move the victim to a warm area<br>• Remove any wet or damp clothing<br>• Provide warm liquids that do not contain caffeine |
| Frostbite | • Numbness or tingling of extremities (fingers, toes, ears, nose)<br>• Discoloration of extremities due to formation of ice crystals under the skin | • Move victim to a warm area<br>• Warm affected extremities by direct exposure to a warming device or immersion in cool to warm water |

| | | |
|---|---|---|
| | | ***Note: Do not apply forceful pressure to areas that have become discolored***. |

### 23.5 Cold Stress Prevention

The following controls shall be implemented when ambient or equivalent chill temperature (ECT) temperature reaches the identified levels:

#### 23.5.1 Below 40° F (4° C)

- Workers should wear layered clothing appropriate for the level of cold and physical activity.
- If working in windy and/or damp conditions, the outer layer of the clothing should be designed to resist wind and/or be impermeable to moisture.
- Gloves should be worn.
- Provisions for warming the hands (warm air-jets, radiant heaters) should be provided if fine work without gloves is to be performed.

#### 23.5.2 ECT Below 20° F (-7° C)

- Warming locations with proper ventilation should be provided.
- Contractors should be encouraged to use the warming locations as necessary.
- At the onset of shivering, minor frostbite, drowsiness, or euphoria, workers should immediately return to the warming location.
- Upon entering the shelter, the outer layer of clothing should should be removed and inner layers should be loosened to permit sweat evaporation.
- Warm, sweet drinks should be provided.
- The intake of coffee should be limited due to the diuretic and circulatory effects.

#### 23.5.3 ECT Below 10° F (-12° C)

- Workers should be under constant observation (buddy system or supervisor).
- Work rate should not be so high as to cause heavy sweating.
- Sitting or standing still should be minimized.

#### 23.5.4 ECT Below -30° F (-35° C)

- Skin exposure should not be allowed.

#### 23.5.5 ECT Below -50° F (-45° C)

- All non-emergency work must cease

## *24.0 Cargo Securement*

Proper cargo securement is important. It helps prevent incidents, injuries, damage to the products being hauled, and unnecessary downtime. Load securement is also required under the Federal Motor Carrier Safety Regulations (FMCSR's). When cargo is not secured properly, a hazardous condition can be created. Unsecured cargo can shift causing a driver to lose control of the vehicle and create road hazards for other motorists.

### 24.1 General Requirements

- Section 392.9 of the FMCSR's state that a vehicle may not be driven unless the vehicles cargo is properly distributed and adequately secured. The vehicles tailgate, tailboard, doors, tarpaulins, spare tire, and other equipment used in its operation, and the means of fastening the cargo, must be secured.

- The vehicle's cargo or any other object must not obscure the driver's view ahead or to the right or left sides, interfere with the free movement of his/her arms or legs, prevent his/her free and ready access to accessories required for emergencies, or prevent the free and ready exit of any person from the vehicle's cab or driver's compartment.
- The FMCSR's require a drive to inspect the vehicle's cargo and load securing devices within the first 50 miles of a trip. After the initial inspection, the FMCSR's require the driver to reexamine the security of the vehicle's load after driving for 3 hours or 150 miles (whichever comes first) and when the driver makes a change of duty status. If the vehicle is sealed and the driver has been ordered not to open it to inspect or if the vehicle has been loaded in a way that makes it impractical to inspect the cargo, the driver may be exempt from the regulation.

### 24.2 Pre-Loading Checklist

- Complete a thorough pre-trip inspection of the trailer. Most trailers take a significant amount of abuse. Make sure the trailer components, parts, and accessories are safe, secure, and in good condition.
- Inspect the trailer before any loading begins. Check for loose debris, nails, splinters, or other material that could cause damage to cargo. When possible always sweep the trailer.
- Secure the vehicle after backing to the loading dock. No vehicle should be left unattended until the drive is confident it is secure from moving.

### 24.3 Securing Devices and Techniques

There are many ways to legally secure cargo. These include blocking and bracing, tie-downs, header boards, cargo covers (tarps), and sealed container loads.

- Blocking is used in front, back, or sides of a piece of cargo to keep it from sliding. Blocking is shaped to fit snugly against the cargo. It is secured to the cargo deck to prevent cargo movement.
- Bracing is also used to prevent movement of cargo. Bracing goes from the upper part of the cargo to the floor or walls of the cargo compartment.
- Tie-downs are used on flatbed trailers or trailers without sides, cargo must be secured to keep it from shifting that could affect the vehicle's handling. Proper tie-down equipment includes ropes, straps, chains, and tensioning devices (winches, ratchets, clinching components). These tie-downs must be attached correctly (using hooks, bolts, rails, or rings).
- Front-end header boards (also known as headache racks) protect the driver from his/her cargo in the event of an incident. The driver should always be sure the structure is in good condition; it should block the forward movement of the cargo being transported. Note: if the header board is used as part of the cargo securement system, then it must comply with the FCMSR regulations.

## *Revision Log*

| *Revision Date* | *Document Authorizer* | *Document Author* | *Revision Details* |
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| 9/1/2022 | VP of Risk Mgt. | Director of Safety | Initial Version |
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