Employee Safety Manual

Ensuring a Safe and Secure Workplace for All

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Introduction

Message from the President

At The Rhys•Ivy Company, the safety and well-being of every person on our team is not just a policy—it's a core value. We believe that every employee, from full-time staff to temporary workers and contractors, deserves to go home safe and healthy at the end of each day.

This Safety Manual represents our collective commitment to maintaining a workplace where injuries are preventable and where safety is never compromised. It aligns with OSHA standards and provides essential guidance to help each of us recognize hazards, make safe choices, and support one another in the field.

Training is a key part of that commitment. We expect every team member to actively participate in OSHA-related education and to apply those lessons in their daily work. But safety isn't just about training, it's about culture, vigilance, and accountability.

This Manual is a valuable resource, but it's not our only one. Your Employee Handbook includes additional policies that support our shared goal of a safe and respectful workplace. Please take the time to read both, ask questions, and speak up if something doesn't seem right.

Accident prevention is everyone's responsibility. We each play a role in protecting not only ourselves, but also our coworkers and the public. Safety isn't just a rulebook—it's a promise we make to one another. Let's honor that promise every day.

Stay safe,

Parker Young
President, The Rhys•Ivy Company

Purpose, Scope, and Safety Commitment

The Rhys•Ivy Company, ("the Company" or "Company"), is committed to providing a safe and secure workplace free from safety hazards that could lead to injury, loss of income, or death. This commitment is at the heart of everything we do, ensuring the well-being of our employees, partners, subcontractors, and the public. Training, equipment, and resources will be provided to meet these safety requirements and empower every team member to prioritize safety.

Purpose

This Employee Safety Manual serves as a guide to the Company's safety policies and procedures. It reflects our dedication to:

- Maintaining compliance with all applicable local, state, and federal safety regulations, including OSHA standards.
- Providing clear guidance on the roles and responsibilities of employees in maintaining a safe workplace.
- Promoting a culture of safety at every level of the organization.

Scope

The policies and procedures outlined in this manual apply to:

- All employees, while on Company property, conducting Company business, or working at controlled sites, including vehicles, offices, shops, and job sites, regardless of role or location.
- Subcontractors, visitors, and anyone else present on Company worksites or property.
- Specific project-based safety plans, such as site-specific safety plans or steel erection plans, which complement this manual by addressing unique requirements, procedures, and means and methods.

Safety Commitment

Every employee has a personal responsibility to adhere to safety rules and report unsafe conditions immediately. Ignorance of these rules will not be accepted as an excuse for violations. By following the guidelines in this manual, employees can safeguard their own lives and the lives of others. Each employee shares responsibility for maintaining a safe work environment. Employees are required to:

- Work safely at all times and adhere to the Company's safety rules.
- Immediately report all accidents, incidents, near misses, property damage, and potentially dangerous conditions to their supervisor and/or a member of the Safety Team. Supervisors are required to make any such reports to a member of the Safety Team.
- Consult with their foreman if any part of this manual is unclear or requires further explanation.

Depending on the jobsite and/or project, members of management may hold different titles, including "supervisor," "manager" and "foreman." For ease of reference, the term "supervisor" used throughout this manual, unless otherwise defined, shall refer to the individual(s) responsible for enforcing safety rules on site. Please contact a member of the Safety Team with questions.

Environmental safety and health management, which is a system that helps keep the working environment safe, is integrated into all aspects of Company project planning and execution processes. These rules represent minimum requirements and are designed to address average conditions. Additional site-specific plans should always be used in conjunction with this manual to address unique project hazards. If you have any questions or require clarification about this manual, please consult your supervisor or a member of the safety team. Together, we can ensure a workplace that protects everyone and promotes excellence.

Company Safety Management Responsibilities

Understanding the roles and responsibilities associated with safety management is essential for maintaining a safe work environment, both at the company level and on project sites. The following outlines the specific safety responsibilities assigned to each area:

Safety Director and Safety Team

Company level:

- Oversees safety programs and ensures compliance with local, state, and federal regulations.
- Maintains and updates (at least annually) the safety manual to reflect current standards.
- Investigates and documents accidents, injuries, and employee concerns.
- Conducts safety training and supports supervisors in training initiatives.
- Performs regular and surprise audits and inspections of projects and equipment.
- Maintain an OSHA 300 log at its corporate office along with additional information on Experience Modification Rate (EMR) for review by customers or clients as necessary.
- Document any recordable injury occurring on a project in the OSHA 300 Log within seven (7) days, as required by the OSHA 29 CFR 1904 Record Keeping Rule.

Project site level:

1. Participate in initial project planning.
2. Prior to project start, select the designated medical treatment facilities, coordinate with the facilities to ensure a clear understanding of the Company “return to work” process and Drug and Alcohol policy, and obtain normal and emergency contact numbers for each site to be included in the Emergency Action Plan.
3. Conduct follow-up site visits to assess ongoing operations.
4. Provide additional on-site training as necessary.
5. Ensure federal and state-mandated OSHA, Department of Labor and other required postings and notices are displayed at the project site.

Superintendents and Supervisors

Project site level:

- Provide employees with safety training and guidance.
- Ensure hazards are identified and corrected promptly.

- Monitor incident and injury reporting to ensure compliance; all injuries must be reported to the Safety Team.
- Obtain and display all required permits before starting daily operations, as per Job Site Safety Requirements.
- Complete daily JSA ("Job Safety Analysis") meetings to review planned operations for the day, address specific safety concerns, and maintain proper documentation.
- Conduct daily equipment inspections and maintain proper documentation.
- Regularly discuss the appropriate use of personal safety gear and proper dress code with crew members to ensure compliance and readiness.

Employees

Project site level:

- Complete a site-specific safety orientation to include review of safety manual policies and site-specific safety requirements, if applicable.
- Identify and report hazards or unsafe conditions to their supervisor.
- Prevent injuries to themselves and others by adhering to safety rules.
- Immediately report any workplace injury or illness to your supervisor or a member of the Safety Team.
- Know the codes and regulations applicable to their tasks.
- Perform only work they are qualified and trained to do. Notify the supervisor if unqualified for assigned tasks.

Competent Persons

The Company designates the supervisor as the primary competent person on each project. Designated competent persons are persons who are capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them. Additional competent persons may include the Superintendent, Site Safety Manager, Safety Director, or Safety Manager, depending on the project.

To ensure qualification, competent persons must complete OSHA 30-Hour Construction Health & Safety Training, while all field employees are required to complete the OSHA 10-Hour Construction Health & Safety Training. Additional competent person training is also provided in areas such as Confined Space, Fall Protection, Rigging, Scaffolds and Aerial Lifts.

General Safety Rules for Employees

1. **Understand Your Job**. Know and understand your job responsibilities. If unsure or in doubt, ask your supervisor.
2. **Report Unsafe Conditions**. Immediately report any unsafe condition, act, or equipment to your supervisor.

3. **Operate Authorized Equipment Only**. Do not operate equipment you are not trained or authorized to use.
4. **Assess Work Safety**. Before proceeding with a task, ensure you can perform the work safely. If assigned work you are not qualified or comfortable to perform, notify your supervisor immediately.
5. **Heed Warnings**. Observe and follow all warning signs. Warn others of danger without startling them and stay clear of hazardous areas unless required.
6. **Seat Belt Use**. Seat belts must be worn in all Company vehicles, equipment, and powered industrial trucks, consistent with the equipment/vehicle manufacturer's recommendations.
7. **Avoid Loose Items**. Do not wear jewelry, unsecured long hair, loose accessories, or loose clothing around electrical switchgear or rotating equipment.
8. **Hearing Protection**. Wear hearing protection in high-noise areas and where posted.
9. **Footwear Requirements**. Tennis shoes, open-toed shoes, or canvas shoes are not permitted. Wear smooth-toed leather work boots that cover the ankle. Specialty safety footwear may be required for tasks that expose workers to potential foot injuries.
10. **Behavioral Conduct**. Horseplay, fighting, provoking others, and any other conduct outlined in the Prohibited Conduct policy in the Employee Handbook, is not permitted.
11. **Protective Eyewear**. Protective eyewear meeting the ANSI Z87.1+ standard must be worn during all work operations.
12. **Respiratory Protection**. Respiratory protection will be provided as needed. Facial hair that interferes with the seal of the respirator is not allowed.
13. **First Aid Kits**. Properly supplied first aid kits will be maintained on all job sites.
14. **Injury Procedures**
    a. All injuries, no matter how minor, must be reported to your supervisor immediately.
    b. If willing, able and trained to do so, provide first aid to the extent of your ability.
    c. To avoid rumors and speculation, please not discuss the incident with anyone other than your supervisor, Company management, corporate safety personnel/director, medical or legal personnel, or other individuals who have a business need to know. Nothing in this section is intended to interfere with or infringe upon an employee's rights under Section 7 of the National Labor Relations Act.
15. **Follow-Up Medical Attention**. Notify your supervisor immediately if additional medical attention is required for any workplace injury. When needed advanced medical care will be provided by the Company's designated medical provider.
16. **Vehicular Accidents**
    a. Stop and assess the situation.
    b. Set out flares or barricades if needed.
    c. If willing and able, provide first aid to the extent of your ability and call 911.
    d. Notify your supervisor immediately.
    e. Document the incident, including:
        i. Names, addresses, and phone numbers of all individuals involved in the accident.
        ii. Drivers' license numbers for all drivers.
        iii. Vehicle license numbers and descriptions for all vehicles involved.
        iv. Names, badge numbers, and contact information for responding law enforcement

officers.
v. Names and contact details for any witnesses.
vi. Insurance information for all parties involved.

f. Submit a completed accident report to the Safety Director.

17. **Housekeeping**. Keep work areas clean and organized. Store waste properly and report spills immediately. Only clean up spills when properly trained to do so.
18. **Tool Usage**. Use tools only for their intended purpose. Turn in defective tools to your supervisor for replacement.
19. **Electrical Tools**. Use grounded or double-insulated electrical tools. Only 3-wire extension cords in good condition are permitted and may only be used on a temporary basis.
20. **Compressed Air Tools**. Handle compressed air tools properly and wear appropriate face and eye protection. Ensure air lines are bled before disconnecting.
21. **Proper Lifting**. Lift properly to prevent back injuries. Seek assistance for heavy or bulky loads.
22. **Equipment Guards**. Do not remove guards from machinery or equipment unless required to perform a maintenance activity. Guards removed during maintenance will be replaced immediately and the machine will not be operated while the guards are removed.
23. **Fire Response**
    a. Assess the threat to life and property.
    b. Evacuate immediately.
    c. Call 911.
24. **Traffic Violations**. Drivers of Company-owned vehicles are responsible for any traffic violations incurred.
25. **Driving Rules**. Obey all traffic regulations, including speed limits and signals. Inspect vehicles before use.
26. **Employee Transport**. Employees must travel in designated seats in vehicles.
27. **No Riding on Unsafe Areas**. Riding on tailgates, fenders, or pickup bedsides is prohibited at all times.
28. **Driver Screening**. All employees operating Company-owned vehicles are subject to annual MVR (Motor Vehicle Record) reviews.
29. **Equipment Operation and Inspections**. Only trained and qualified operators may use aerial lifts, boom lifts, forklifts, Lull lifts, cranes, or other equipment. Equipment must be inspected daily, and any damage or deficiencies reported immediately. Raised equipment must be lowered when unattended.
30. **Drug and Alcohol Abuse and Testing**. Employees are subject to the Drug and Alcohol Abuse and Testing Policy outlined in the Company's Employee Handbook.
31. **Questions and Clarifications.** Contact your supervisor or a member of the safety team if you have questions regarding these rules.
32. **Stop Work Authority.** All employees have the right to stop work when unsafe conditions or actions warrant a work stoppage to prevent an incident or injury, discuss the issue, develop a hazard control, and implement the hazard control.

33. **High Visibility Clothing.** All Employees will wear Class 3 High Visibility vests when walking or working on site. For all night work, employees will also wear high-viz material on their legs in the form of pants or gators. Exposure to nearby traffic and/or equipment requires this level of protection.
34. **Hand Protection.** All Employees will wear Cut Level 4 Gloves when working or performing tasks that could injure the hand(s) and/or finger(s).

Protecting the Public

In addition to ensuring employee safety, the Company prioritizes public safety. The following rules must be observed:

- Keep the public away from work areas that present hazards.
- Protect hazards such as manholes, trenches, and excavations with barricades when exposed to traffic.
- Flagmen or warning devices must be stationed far enough to allow vehicles to stop and comply with regulations. Flagmen must wear ANSI Class 3 reflective vests.
- Unattended vehicles or equipment must not be left near fire hydrants or entrances, must be locked or secured, and protected with the Manual on Uniform Traffic Control Device (MUTCD) approved warning devices.
- When chiseling, chipping, cutting, grinding, welding, or any other task that produces high-velocity particles is performed in locations where others are exposed to eye hazards shields shall be placed around the work or the area shall be roped off or barricaded in accordance with MUTCD approved methods.

Work Area Protection

The purpose of this policy is to establish clear guidelines for ensuring the safety of people and equipment in and around work areas. Proper work area protection is essential to minimize risks and prevent accidents through the use of effective barriers, warning devices, and safety protocols. General guidelines for work area protection are outlined below:

- **Work Area Protection:** Work area protection involves safeguarding all individuals and equipment near work sites, including excavations, open manholes, or parked equipment, by using barriers, warning signs, lights, flags, traffic cones, barricade ropes, and flagmen.
- **Compliance with MUTCD Standards:** All protective devices, signals, and barricades must be MUTCD compliant. The proper installation and use of these devices should be planned, designed, inspected, and maintained thoughtfully to ensure a safe work environment. Warning devices must be placed early enough to clearly convey the message to the public before entering the work area.
- **Public Protection:** The public must be warned in advance and safely guided around or through the work area. Proper planning is required to protect both the public and workers, ensuring that all necessary safety measures are in place.
- **Minimizing Accidents:** The likelihood of accidents is greatly reduced through careful planning, design, installation, and maintenance of work area protections, combined with the use of common sense and vigilant oversight.

- **Compliance with Local Traffic Codes:** All state and local traffic codes must be followed when implementing work area protection measures.
- **Night Operations and Reduced Visibility:** During night operations or times of reduced visibility, additional precautions such as flashing lights, flares, or area illumination must be used to enhance safety.
- **Removal of Warning Devices:** Warning devices should be removed as soon as the hazard is eliminated, all work is completed, and personnel have cleared the area.
- **Storage of Equipment:** Any unused warning devices or equipment should be properly stored or removed from the work area when no longer needed.

By adhering to these guidelines, we can ensure a safer environment for both workers and the public in all work areas.

Flagging, Signs & Signals

Company personnel should not perform traffic control or flagman duties unless properly trained and equipped with reflective clothing and flagging equipment. If flagman duties are necessary, the following procedures must be followed:

- Flagmen or appropriate traffic controls must be used if signs, signals, and barricades alone are insufficient.
- Flagmen must wear a warning vest or reflective garment, and ANSI Class 3 reflective vests must be worn at night.
- Flagmen using signaling equipment must ensure visibility and protection:
    - Signal flags must be red and at least 24 inches square.
    - Stop and Slow sign paddles must be on a 6-foot staff.
    - Use red lights in low visibility conditions.
    - MUTCD Compliant portable warning signs should be appropriately displayed.
- Flagmen must place themselves in a protected position to minimize traffic-related injury risks.
- Flagmen must be able to fully observe all operations and direct traffic to minimize the possibility of accidents or injury.
- Reliable communication or pre-arranged signals must be used when flagmen are stationed at both ends of a site.
- Flagmen must face traffic when signaling.
- Flagmen must provide clear, unambiguous signals.
- Local law enforcement may be requested if additional protection is needed.

These measures ensure safety and effective traffic control on job sites.

Safety & Health Training (General)

The purpose of the Safety & Health Training Program is to communicate the knowledge and skills necessary for safe practices through on-the-job training and the presentation of facts and principles. The program aims to inform employees of environmental hazards and non-job-related health and safety issues, and keep skills and knowledge updated to ensure a safe work environment. The program includes but is not limited to the training points described below.

New Employee Orientation

All new employees must complete orientation that includes Company policies, workplace hazards, safety and health procedures, proper use of protective equipment and assessment of training requirements.

Special Training

Special training is required when an employee changes job assignments, when new hazards are presented or identified and/or when new standards or regulations are implemented.

Records of all special training sessions shall be maintained by the Safety Team.

Daily Crew Safety Meetings

The crew supervisor shall conduct a daily safety meeting with their crew before the start of work. This meeting is to review, at a minimum:

1. A Job Safety Analysis (JSA) or Pre-Task Plan (PTP) that includes date, time, and location of the meeting, names of attendees the completed JSA/PTP forms.
2. All meeting documentation shall be recorded in the HCSS system upon completion and may be forwarded to the Safety Team as required.

Visitor & Subcontractor Safety

Following the Guests and Visitors policy outlined in the Employee Handbook, visits from friends and family to field job sites is prohibited. Visits from friends and family to office environments should be kept to a minimum.

Vendor, subcontractor, client or partner visits to field job sites will be necessary in the course of our work and should follow the guidelines outlined below:

- Visitors to project sites must be escorted by the supervisor or an individual assigned by the supervisor at all times.
- Visitors and subcontractors are responsible for supplying their own safety and personal protective equipment (PPE).
- Subcontractors must complete and review the safety contractor requirements of the Company's Master Subcontractor Agreement before beginning work. Forms are available from the Safety Team or the Site Safety Manager (as applicable).
- Employees not scheduled to work are considered visitors and must comply with these rules.

Drug and Alcohol Abuse and Testing

Our company is a Drug-Free Workplace and maintains a full Drug and Alcohol Abuse and Testing policy in our Employee Handbook. For details, please review your copy of the Employee Handbook.

Disciplinary Program

It is the responsibility of each person employed by the Company to work in a safe and efficient manner. The safety system provides guidelines and procedures to help ensure that safe work practices are observed. If any employee violates provisions of the Company's safety system or works in a manner that threatens an employee's own health and safety or the health and safety of the employees around they, the employee will be subject to disciplinary action, up to and including termination of employment.

For additional information regarding discipline, please refer to the Involuntary Termination and Progressive Discipline Policy within the Company's Employee Handbook.

Aerial Lift Safety Program

Understanding the requirements for safely operating an aerial lift device can save lives. An aerial lift device is defined as any vehicle-mounted or manually propelled, telescoping, or articulating equipment used to position personnel above six feet in height. This policy applies to all aerial lift devices used on in the course of work and all employees must operate these devices in accordance with this policy.

Key Responsibilities

Superintendents and Supervisors

- Ensure that all aerial devices are operated only by trained personnel.
- Verify that aerial lift devices conform to the applicable requirements of the American National Standards for "Vehicle Mounted Elevating and Rotating Work Platforms" (ANSI A92.2-1969), including appendices.

Employees

- Follow all aspects of this program and operate aerial lifts in accordance with training and company policies.

General Rules for Aerial Lift Operation

1. **Field Modifications**: Aerial lifts shall not be modified for uses other than those intended by the manufacturer.
2. **Pre-Use Inspections:** Test lift controls daily before use to ensure safe working conditions. Conduct additional tests at the beginning of each shift to verify that brakes and operating systems are functioning properly.
3. **Operator Requirements:** Only authorized and trained personnel may operate an aerial lift. Employees must be trained in the safe operation of the specific device they will use, with training conforming to all OSHA requirements.
4. **Load Limits:** Never exceed boom and basket load limits specified by the manufacturer (typically 500 lbs).
5. **Backup Alarms**: Aerial lifts must have a working backup alarm audible above surrounding noise. If no alarm is present, a spotter must signal when it is safe to reverse the vehicle.
6. **Electrical Line Clearance**: Maintain a minimum clearance of 10 feet between electrical lines and any part of the equipment for lines rated at 50 kV or below.
7. **Work Positioning**: Employees must stand firmly on the floor of the basket and must not sit or climb on the basket's edge or use planks, ladders, or other devices for positioning.
8. **Weather Restrictions**: Do not use aerial lifts or scissor lifts in winds exceeding 20 miles per hour, in thunderstorms or lightning within 10 miles, or in ice or snow-covered surfaces.
9. **Fall Protection**: Approved fall protection must be worn, and a self-retracting lifeline (SRL) must be attached to the designated anchorage point. Scissor lift chains must be locked in place during use.

Bloodborne Pathogen Exposure Control Program

This program establishes procedures for handling on-the-job injuries while minimizing occupational exposure to blood and other potentially infectious materials. The following guidelines must be followed to ensure safety.

Definitions

Bloodborne Pathogens (BBP) - pathogenic microorganisms that are present in human blood and can cause disease in humans. These pathogens include, but are not limited to, hepatitis B virus (HBV) and human immunodeficiency virus (HIV).

Contaminated - the presence or the reasonably anticipated presence of blood or other potentially infectious materials on an item or surface.

Exposure Incident – means a specific eye, mouth, other mucous membrane, non-intact skin, or parenteral contact with blood or other potentially infectious materials that results from the performance of an employee's duties.

Occupational Exposure - actual, or potential, parental, skin, eye, or mucous membrane contact with blood; or other potentially infectious materials that may result from the performance of an employee's duties.

Other Potentially Infectious Materials (OPIM) -

(1) The following human body fluids: semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, any body fluid that is visibly contaminated with blood, and all body fluids in situations where it is difficult or impossible to differentiate between body fluids;

(2) Any unfixed tissue or organ (other than intact skin) from a human (living or dead); and

(3) HIV-containing cell or tissue cultures, organ cultures, and HIV – or HBV-containing culture medium or other solutions; and blood, organs, or other tissues from experimental animals infected with HIV or HBV.

Universal Precautions - is an approach to infection control. According to the concept of Universal Precautions, all human blood and certain human body fluids are treated as if known to be infectious for HIV, HBV, and other bloodborne pathogens.

Exposure Control Plan

Where the potential for occupational exposure to bloodborne pathogens (BBP's) exist, the Company will identify, in writing, tasks and procedures, as well as job classifications where such exposures may occur without regard to the use of personal protective clothing and equipment.

The procedure must be accessible to employees and available for annual review. Updates are to be performed as necessary when departmental changes occur.

Job Classification Analysis

The following job duties will or may be a source of exposure to BBP or OPIM:

1. **Occupational Exposure:**
    - Standard First Aid Responders
2. **Potential Exposure:**
    - Maintenance Personnel: Repairing equipment, emergency cleanup, handling waste with body fluids.
    - Trained personnel cleaning bloodborne pathogen-affected areas

Methods of Compliance

To prevent and control exposure to blood or other potentially infectious materials, employees must observe several precautions and control strategies. Most importantly, employees must use universal precautions (treating ALL blood and body fluids as infectious) to prevent contact with blood, or other potentially infectious materials.

Other strategies include:

Engineering controls (i.e., puncture resistant disposal containers for contaminated sharp instruments, resuscitation bags, biohazard bags, and ventilation devices.)

Work practice controls (i.e., hand washing, immediately after removing gloves; restricting eating and drinking; applying cosmetics or lip balm; handling contact lenses; prohibiting mouth pipetting; preventing the storage of food or drink in refrigerators, or other locations where blood, or other BBP's, are kept; decontaminating equipment, or labeling it as contaminated, before shipping to disposal facilities; no recapping, shearing, or breaking of contaminated needles).

Personal protective equipment designed to prevent blood, or other BBP's, from passing through worker's clothing, skin, or mucous membranes. Such equipment includes, but is not limited to, gloves, gowns, laboratory coats, face shields, masks, and/or eye protection.

Housekeeping procedures to decrease the opportunity for exposure to blood and/or other BBP's. These include a schedule for cleaning and decontaminating all contaminated equipment, surfaces, and waste receptacles; handling and discarding broken glass, and contaminated sharps; regulated wastes; and handling and labeling contaminated laundry.

Strict labeling procedures are required in order that workers recognize contaminated, or potentially infectious material. The standard requires that fluorescent orange, or orange- red, warning labels be attached to containers of regulated waste; to refrigerators and freezers containing blood and other BBP's; and to other containers used to store, transport, or ship blood, or other BBP's. These labels are not required when red bags are used. Biohazardous waste, that has been decontaminated, must be re-labeled as decontaminated. Signs must be used to identify restricted areas, where the potential for occupational exposure exists.

Hepatitis B Vaccination

If exposed, Hepatitis B vaccinations are offered to employees at no cost. Employees who decline the vaccine must sign a waiver.

Exposure Incident Procedures

If an exposure incident occurs, the employee must immediately contact the Safety Director or supervisor for evaluation and follow-up. The evaluation includes confidential medical evaluation documenting the circumstances of exposure; identifying and testing the source individual, if feasible (at department expense); testing the exposed employee's blood, if he/she consents; post exposure prophylaxis; or counseling and evaluation of reported illnesses.

The medical contractor must be provided information, by the Company to facilitate the evaluation.

This information will consist of:

1. A copy of the OSHA Bloodborne pathogen regulation;
2. A description of the exposed employee's duties as they relate to the exposure incident;
3. Documentation of the route(s) and circumstances under which exposure occurred;
4. Results of the source individual's blood testing, if available;
5. Vaccination status and/or any other medical records relevant to appropriate treatment.

After medical evaluation of the incident and possible treatment, the medical contractor will then provide a written opinion to the employee within 15 days of the completion of the evaluation. This shall be limited to whether Hepatitis B vaccination is indicated for an employee, and if the employee has received such vaccination. The written opinion for postexposure evaluation and follow-up shall be limited to informing the employee of the results of the evaluation and any further treatment or evaluation that is recommended.

Information and Training

The Company will provide training for all employees with potential exposure to bloodborne pathogens and/or other infectious materials upon initial job assignment. Annual refresher training will also be provided. In addition, employees must be trained if conditions change, or a new hazard is introduced.

Information and training must include:

- An explanation of, and accessibility to, the regulations.
- A general discussion on bloodborne diseases and their transmission.
- An explanation of the department's written exposure control plan.
- Provisions that have been made for engineering and work practice controls.
- Use of personal protective equipment, and personal hygiene practices.
- Availability of Hepatitis B vaccination, post exposure, and follow- up programs.
- Methods to respond to BBP emergencies and incidents.

During training, there must be opportunities for questions and answers and the trainer must be knowledgeable in the subject matter.

Recordkeeping

The Company will maintain the employee's confidential medical records for the duration of their employment plus thirty years. These medical records will be made available to the employee, and the Department of Labor upon request. Written and signed employee releases, or court orders, are required for all other access. These records will include information as prescribed under federal and state laws.

Decontamination and Disposal of Waste

The company will contract decontamination operations and disposal of biohazard waste to a third party

Compressed Gas Cylinders Program

The purpose of this program is to prevent injuries from the failure or improper handling of compressed gas cylinders and to establish requirements for their safe handling, lifting, storage, and use. It applies to all employees and contractors who handle, transport, and/or use compressed gas cylinders.

Key Responsibilities

Managers/Supervisors

- Ensure employees are aware of proper handling, storage, and use requirements for compressed gas cylinders.
- Provide initial and retraining when required, such as when unsafe behaviors are observed.

Employees

- Follow all safety requirements regarding the handling, storage, and use of compressed gas cylinders.

General Guidelines

Cylinders showing evidence of denting, bulging, pitting, or neck/valve damage must:

- Be removed from service.
- Be de-pressured and inspected if owned by the company.
- Be returned to the owner if not owned by the company.

Identification

Gas identification must be stenciled, stamped, or labeled on the cylinder. Cylinders with illegible labels are not permitted for use.

Handling

Secure valve caps before moving or storing cylinders. Use a cart, carrier, or helper to move cylinders. Slings, ropes, or electromagnets are prohibited for lifting. Cylinders must not strike each other during handling. Cylinders with caps that cannot be removed by hand must be tagged as "Do Not Use" and returned to storage for vendor return.

Storage

Store cylinders upright in a safe, dry, and ventilated area. Secure cylinders to prevent them from falling, avoiding attachment to electrical conduit or process piping. Separate oxygen cylinders from combustible gas cylinders by 20 feet or a 5-foot fire-resistant wall with a 30-minute rating. Designate and label storage areas for full and empty cylinders, keeping them separate. Compressed Gas Cylinders will not be stored near stairways, gangways, or within emergency exit routes.

Use

Use the correct regulators and inspect them for grease, oil, dirt, or damage before use. Only use tools provided by the supplier to open or close valves. Close valves when not in use and never use cylinders

as rollers or supports. Protect cylinders from sparks, flames, and welding slag. Return empty cylinders to designated storage promptly.

Inspection

Regularly inspect hoses and connections for damage. Visually inspect cylinders before charging, each use, and annually. Document all inspections and testing.

High-Pressure and Low-Pressure Cylinders

High-Pressure Cylinders (900 psi or greater):

Remove from service and re-qualify per 49 CFR 180.209 if damaged or aged. Inspect for dents, bulges, pitting, or fire exposure.

Low-Pressure Cylinders (less than 900 psi):

Condemn cylinders with damage, pitting, or reduced tare weight (<90% of the stamped weight). Re-qualify non-damaged cylinders as per 49 CFR 180.209.

Leaking Cylinders

Move leaking cylinders to an isolated, ventilated area, away from ignition sources. Use soapy water to detect leaks and do not attempt to repair leaks at the valve junction. Contact the supplier for instructions.

Transportation

Transport cylinders in a vertical, secured position using a basket or cart. Remove regulators and secure caps before transport. Never drop cylinders or allow them to strike violently.

Empty Cylinder Handling

Mark empty cylinders as "MT" with the date. Never mix gases or attempt to refill cylinders unless performed by professionals. Handle empty cylinders with the same care as full cylinders.

Engineering Controls

Utilize emergency shutoff switches, gas cabinets, and flow restrictors to manage hazards. Emergency eyewash facilities must be present in areas with corrosive gases or materials.

Confined Space Program: OSHA 29 CFR 1926 Subpart AA – Confined Spaces in Construction

The purpose of this program is to ensure the safety of all employees and contractors working for the Company while complying with all federal and state requirements related to confined spaces in construction, in accordance with OSHA 29 CFR 1926 Subpart AA.

This program applies to all employees and workers involved in confined space entry in construction. When confined space entry is performed as defined under construction by OSHA, the Company will adhere to the provisions outlined in 1926 Subpart AA.

Definitions

Acceptable Entry Conditions – the conditions that must exist in a confined space to allow entry and to ensure that employees involved with a confined space entry can safely enter and work within the space.

Attendant – an individual stationed one or more Confined spaces that monitor the authorized Entrants and who performs all Attendants' duties assigned in the Company Confined Spaces Program. Attendants must have sufficiently completed and fully understand the Confined Space training and is approved by the Safety Manager and/or Competent Person to serve as an Attendant.

Authorized Entrant – an individual who is authorized by the Company to enter a confined space. Entrants must have sufficiently completed and fully understands the Confined Space training and is approved by the Safety Manager and/or Competent Person to work in a confined space as an Authorized Entrant.

Blanking or Blinding – the absolute closure of a pipe, line, or duct by the fastening of a solid plate (such as a spectacle blind or a skillet blind) that completely covers the bore and that is capable of withstanding the maximum pressure of the pipe, line, or duct with no leakage beyond the plate.

Confined Space

1. A space that is large enough and so configured that an employee can bodily enter and perform assigned work;
2. Has limited or restricted means for entry or exit, and
3. Is not designed for continuous occupancy.

Examples of Confined Spaces include manholes and curb inlets. Please refer to the Excavation Safety Program regarding hazardous atmospheres in excavation.

Competent Person – one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has the authorization to take prompt corrective measures to eliminate them.

Control – the action taken to reduce the level of any hazard inside a confined space using hazard control methods (for example, by ventilation), and then using these methods to maintain the reduced hazard

level. Control also refers to the engineering methods used for this purpose. Personal protective equipment is not a control.

Controlling Contractor – is the employer that has overall responsibility for construction at the worksite. If the controlling contractor owns or manages the property, then it is both a controlling employer and a host employer.

Double Block and Bleed – the closure of a line, duct, or pipe by closing and locking or tagging two in-line valves and by opening and locking or tagging a drain or vent valve in the line between the two closed valves.

Early-Warning System – the method used to alert authorized entrants and attendants that an engulfment hazard may be developing. Examples of early-warning systems include but are not limited to: alarms activated by remote sensors; and with equipment for immediately communicating with the authorized entrants and attendants.

Emergency – any occurrence (including any failure of hazard control or monitoring equipment) or an event internal or external to the confined space that could endanger Entrants.

Engulfment – the surrounding and effective capture of a person by a liquid or finely divided (flowable) solid substance that can be aspirated to cause death by filling or plugging the respiratory system or that can exert enough force on the body to cause death by strangulation, constriction, or crushing.

Entry – the action by which a person passes through an opening into a confined space. Entry includes ensuing work activities in that space and is considered to have occurred as soon as any part of the Entrant's body breaks the plane of an opening into the space.

Entry Permit – the written or printed document that is provided by the Company to allow and control entry into a confined space that contains the information specified in this program.

Entry Rescue – occurs when a rescue service enters a permit space to rescue one or more employees.

Entry Supervisor – the qualified person (such as the employer, foreman, or crew chief) responsible for determining if acceptable entry conditions are present at a permit space where entry is planned, for authorizing entry and overseeing entry operations, and for terminating entry as required by this standard. An entry supervisor also may serve as an attendant or as an authorized entrant, as long as that person is trained and equipped as required by this standard for each role he or she fills.

Entry Supervisor Duties:

- Entry Supervisors must have sufficiently completed and fully understands the Confined Space Training and is approved by the Safety Manager and/or Competent Person to work in a confined space.
- An Entry Supervisor also may serve as an Attendant or as an authorized Entrant, as long as that person is trained and equipped as required by this section for each role he or she fills. Also, the duties of Entry Supervisor may be passed from one individual to another during the course of an entry operation.
- The Entry Supervisor is responsible to verify that the testing and monitoring the atmospheric conditions are being performed and documented.

Hazard – a physical hazard or hazardous atmosphere. See definitions below.

Hazardous Atmosphere – an atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self-rescue (that is, escape unaided from a permit space), injury, or acute illness from one or more of the following causes:

(1) Flammable gas, vapor, or mist in excess of 10 percent of its lower flammable limit (LFL) or lower explosive limit (LEL);

(2) Airborne combustible dust at a concentration that meets or exceeds its LFL; Note: This concentration may be approximated as a condition in which the combustible dust obscures vision at a distance of 5 feet (1.52 meters) or less.

(3) Atmospheric oxygen concentration below 19.5 percent or above 23.5 percent;

(4) Atmospheric concentration of any substance for which a dose or a permissible exposure limit is published in Subpart D—Occupational Health and Environmental Control, or in Subpart Z—Toxic and Hazardous Substances, of this part and which could result in employee exposure in excess of its dose or permissible exposure limit; Note. An atmospheric concentration of any substance that is not capable of causing death, incapacitation, impairment of ability to self-rescue, injury, or acute illness due to its health effects is not covered by this definition.

(5) Any other atmospheric condition that is immediately dangerous to life or health.

Note: For air contaminants for which OSHA has not determined a dose or permissible exposure limit, other sources of information, such as Safety Data Sheets that comply with the Hazard Communication Standard, §1926.59 of this part, published information, and internal documents can provide guidance in establishing acceptable atmospheric conditions.

Hazard Assessment – before it begins work at a worksite, each employer must ensure that a competent person identifies all confined spaces in which one or more of the employees it directs may work, and identifies each space that is a permit space, through consideration and evaluation of the elements of that space, including testing as necessary.

Host Employer – the employer that owns or manages the property where the construction work is taking place.

Hot Work Permit – the written authorization to perform operations (for example, riveting, welding, cutting, burning, and heating) capable of providing a source of ignition.

Immediately Dangerous to Life or Health (IDLH) – any condition that poses an immediate or delayed threat to life or that would cause irreversible adverse health effects or that would interfere with an individual's ability to escape unaided from a confined space.

Note: Some materials – hydrogen fluoride gas and cadmium vapor, for example – may produce immediate transient effects that, even if severe, may pass without medical attention, but are followed by sudden, possibly fatal collapse 12-72 hours after exposure. The victim "feels normal" from recovery from transient effects until collapse. Such materials in hazardous quantities are considered to be “immediately dangerous to life or health”.

Inerting – the displacement of the atmosphere in a permit space by a non-combustible gas (such as nitrogen) to such an extent that the resulting atmosphere is non-combustible. This procedure produces an IDLH oxygen deficient atmosphere.

Isolation – the process by which a confined space is removed from service and completely protected against the release of energy and material into the space by such means as: blanking or blinding; misaligning or removing sections of lines, pipes, or ducts; a double block and bleed system; lockout or tagout of all sources of energy; or blocking or disconnecting all mechanical linkages.

Limited or Restricted Means for Entry or Exit – a condition that has a potential to impede an employee's movement into or out of a confined space. Such conditions include, but are not limited to, trip hazards, poor illumination, slippery floors, inclining surfaces and ladders.

Line Breaking – the intentional opening of a pipe, line, or duct that is or has been carrying flammable, corrosive, or toxic material, an inert gas, or any fluid at a volume, pressure, or temperature capable of causing injury.

Lockout – the placement of a lockout device on an energy-isolating device, in accordance with an established procedure, ensuring that the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

Lower Flammable Limit or Lower Explosive Limit – the minimum concentration of a substance in air needed for an ignition source to cause a flame or explosion.

Monitor or Monitoring – the process used to identify and evaluate the hazards. This is a process of checking for changes that is performed in a periodic or continuous manner after the completion of the initial testing or evaluation of that space.

Non-Entry Rescue – occurs when a rescue service, usually the attendant, retrieves employees in a permit space without entering the permit space.

Non-Permit Confined Space – a confined space that meets the definition of a confined space but does not meet the requirements for a permit-required confined space, as defined in this subpart.

Oxygen Deficient Atmosphere – an atmosphere containing less than 19.5 percent oxygen by volume.

Oxygen Enriched Atmosphere – an atmosphere containing more than 23.5 percent oxygen by volume.

Permit-Required Confined Space – a confined space that has one or more of the following characteristics:

- Contains or has a 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.
- Contains any other recognized serious safety or health hazard.

Permit-Required Confined Space Program (Permit Space Program) – the employer's overall program for controlling, and, where appropriate, for protecting employees from, permit space hazards and for regulating employee entry into permit spaces.

Permit System – the employer's written procedure for preparing and issuing permits for entry and for returning the confined space to service following termination of entry.

Physical Hazard – an existing or potential hazard that can cause death or serious physical damage. Examples include but are not limited to explosives (as defined by paragraph (n) of §1926.914, definition of "explosive"); mechanical, electrical, hydraulic and pneumatic energy; radiation; temperature extremes; engulfment; noise; and inwardly converging surfaces. Physical hazard also includes chemicals that can cause death or serious physical damage through skin or eye contact (rather than through inhalation).

Prohibited Condition – any condition in a permit space that is not allowed by the permit during the period when entry is authorized. A hazardous atmosphere is a prohibited condition unless the employer can demonstrate that personal protective equipment (PPE) will provide effective protection for each employee in the permit space and provides the appropriate PPE to each employee.

Qualified Person – a person who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his ability to solve or resolve problems relating to the subject matter, the work, or the project.

Representative Permit Space – a mock-up of a confined space that has entrance openings that are similar to, and is of similar size, configuration, and accessibility to, the permit space that authorized entrants enter. Representative Permit Spaces are used to practice Entry Rescue.

Rescue – retrieving and providing medical assistance to one or more employees who are in a permit space.

Rescue Service – the personnel designated to rescue employees from Permit-Required Confined Spaces.

Retrieval System – the equipment (including a retrieval line, full-body harness, and a lifting device or anchor) used for non-entry rescue of persons from confined spaces.

Serious Physical Damage – an impairment or illness in which a body part is made functionally useless or is substantially reduced in efficiency. Such impairment or illness may be permanent or temporary and includes, but is not limited to, loss of consciousness, disorientation, or other immediate and substantial reduction in mental efficiency. Injuries involving such impairment would usually require treatment by a physician or other licensed health-care professional.

Tagout – (1) Placement of a tagout device on a circuit or equipment that has been deenergized, in accordance with an established procedure, to indicate that the circuit or equipment being controlled may not be operated until the tagout device is removed; and (2) The employer ensures that (i) tagout provides equivalent protection to lockout, or (ii) that lockout is infeasible and the employer has relieved, disconnected, restrained and otherwise rendered safe stored (residual) energy.

Test or Testing – the process by which the hazards that may confront entrants of a permit space are identified and evaluated. Testing includes specifying the tests that are to be performed in the permit space.

> **Note:** Testing enables employers both to devise and implement adequate control measures for the protection of authorized entrants and to determine if acceptable entry conditions are present

immediately prior to, and during, entry.

Ventilate or Ventilation – controlling a hazardous atmosphere using continuous forced-air mechanical systems that meet the requirements of §1926.57—Ventilation.

Responsibilities

Managers/Supervisors/Foreman Duties:

1. Ensure all employees have been trained and fully understand the requirements of this program.
2. Obtain information from the Controlling Contractor on Confined Spaces on the Project.
3. Provide necessary equipment to comply with these requirements and ensure all employees are trained on its use.
4. Ensure that, before work begins, all confined spaces have been identified in which one or more of the employees it directs may work, and identifies each space that is a permit space, through consideration and evaluation of the elements of that space, including testing as necessary. All confined space hazard assessments have been conducted and documented.
5. Ensure that it has informed, in a timely manner and in a manner other than posting, its employees' authorized representatives *and the controlling contractor* of the existence and location of, and the danger posed by, each permit space.
6. Ensure that provisions and procedures are in place for the protection of employees from external hazards including but not limited to pedestrians, vehicles and other barriers and by use of the pre-entry checklist verifying that conditions in the permit space are acceptable for entry during its duration.
7. Ensure that all Permit-Required Confined Spaces permits are posted.
8. Ensure an annual review of the program including all entry permits issued that during that annual period.
9. Ensure confined spaces are identified properly as either a Non-Permit Confined Space or a Permit-Required Confined Space.
10. Ensure that all employees have been informed of the presence of confined spaces that have been identified as "no entry" or have signs that state, "DANGER- DO NOT ENTER".
11. Ensure signs have been posted at all Permit-Required Confined Space areas that state, "DANGER – PERMIT ENTRY CONFINED SPACE" along with the proper warning word such as "ASPHYXIANT, FLAMMABILITY or TOXIC HAZARD"
12. File all permits and confined space closure documents at the project offices for review. Permits shall be kept on file for one year in project files or safety files.

Affected Employees Duties:

- Attend Confined Space Entry training relevant to their duties and undergo additional training if duties change.
- Comply with all aspects of this program.

- Authorized Entrants, Attendants and Entry Supervisors may be any COMPANY employee that is authorized by management to work in a confined space setting and that has been trained and is proficient in the understanding of program requirements.

Authorized Entry Supervisor Duties:

- Ensure that, before work begins, all confined spaces have been identified in which one or more of the employees it directs may work, and identifies each space that is a permit space, through consideration and evaluation of the elements of that space, including testing as necessary. All confined space hazard assessments have been conducted and documented.
- Have a Toolbox Talk with all workers to be involved in the confined space entry, including representatives of the host employer / controlling contractor, and review the job to be performed and what safety concerns may be present.
- Confirm that all isolation, Lockout/Tagout have been completed prior to entry into a confined space.
- Ensure that the requirements of this program are followed and maintained.
- Test all atmosphere conditions prior to entry and shall complete and maintain the confined space permit form and have it accessible for review on the job site at all times. Testing shall be continuous.
- Notify the assigned supervisor of entry into a confined space and notify the rescue team, if applicable, of any changes that may occur, during an entry.
- If the confined space poses a hazard that cannot be controlled, the Entry Supervisor must arrange for a rescue services. **Note:** the Company utilizes Non-Entry Rescue Services whenever applicable.
- If the confined space poses no hazards to the Entrants, the Entry Supervisor can reclassify the confined space to a Non-Permit Confined Space.

Authorized Attendant Duties:

- Know the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure.
- Be aware of possible behavioural effects of hazard exposure in authorized Entrants.
- Continuously maintain communication and an accurate count of authorized Entrants in the confined space and ensures that the means used to identify authorized Entrants, and accurately identify who is in the confined space.
- Remain at the confined space during entry operations until relieved by another Attendant.
- Authorized Attendants are NOT allowed to monitor more than one confined space at a time.
- **Note:** Attendants may enter a confined space to attempt a rescue, if they have been trained and equipped for rescue operations as required and only when they have been relieved by another authorized Attendant.
- Monitor activities inside and the confined space to determine if it is safe for Entrants to remain in the space and orders the authorized Entrants to evacuate the confined space immediately under any of the following conditions:

  - If the Attendant detects a prohibited condition;
  - If the Attendant detects the behavioural effects of hazard exposure in an authorized Entrant;
  - If the Attendant detects a situation inside the space that could endanger the authorized Entrants;
  - If the Attendant cannot effectively and safely perform all the duties required.
- Summon rescue and other emergency services as soon as the Attendant determines that authorized Entrants may need assistance to escape from confined space hazards.
- Take the following actions when unauthorized persons approach or enter a confined space while entry is underway:
  - Warn the unauthorized persons that they must stay away from the confined space;
  - Advise the unauthorized persons to exit the confined space immediately, if they have entered the space;
  - Inform the authorized Entrants and the Entry Supervisor if unauthorized persons have entered the confined space.
- Perform no duties that might interfere with the Attendant's primary duty to monitor and protect the authorized Entrants.

Authorized Entrant Duties

- Know the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure.
- Use appropriate personal protective equipment properly, e.g., fall protection, face and eye protection, and other forms of barrier protection such as gloves aprons, coveralls, and breathing equipment.
- Be aware of possible behavioural effects of hazard exposure in authorized Entrants;
- Witness and verify calibrated air monitoring data and if approved, sign off, before entry is made.
- Maintain communication with the Attendants to enable the Attendant to monitor the Entrants status as well as to alert the Entrant to evacuate if needed; and
- Exit from confined spaces as soon as possible when ordered by an Attendant or Entry Supervisor, when the Entrant recognizes the warning signs or symptoms of an exposure exists, or when a prohibited condition exists, or when an alarm is activated.
- **Note:** Authorized Entrant is entitled to request additional monitoring at any time.

Permit-Required Confined Space Entry

If the space is properly isolated and the results of air monitoring are above acceptable parameters without local exhaust ventilation in operation, classify the entry as a Permit-Required Confined Space.

- Complete the Company Confined Space Entry Permit before proceeding with work in a Permit-Required Confined Space.
- Entrants and/or their representative shall be given the opportunity to observe and participate in the air monitoring process.

- Entrants shall review and sign the confined space permit.
- At least one trained Attendant must always be present at the Permit-Required Confined Space.
- The Attendant must monitor the authorized Entrants for the duration of the entry operation.
- Only authorized Entrants may enter a Permit-Required Confined Space.
- All Entrants must sign in and out on the entry permit when entering and leaving a Permit-Required Confined Space.
- The back of the permit or a sign-in sheet must be used for this purpose.
- Post signs and barricades at all Permit-Required Confined Spaces to notify personnel that a confined space entry is in progress and unauthorized entry is prohibited.
- Conditions must be continuously monitored where Entrants are working to determine that acceptable conditions are maintained during entry.
- If a hazardous atmosphere is detected during an entry, personnel must immediately evacuate the space.
    - The Entry Supervisor shall **suspend** the entry permit.
    - Re-evaluate the space to determine how the hazardous atmosphere developed.
    - Take action to protect personnel before activity to re-enter the space takes place.
    - Re-issue the Company Confined Space Entry Permit before allowing Entrants to re-enter the space.
    - Employees or their representatives may request additional monitoring at any time.
- The permit must be terminated when the entry operations are complete or when permit conditions change (i.e., hazardous air monitoring results are noted, unsafe behaviours are observed, etc.).
- The minimum rescue equipment required for Permit-Required Confined Space entry is covered in the Rescue & Emergency section of this program.
- Permit-Required Confined Space entry operations will be reviewed after each completed entry. Each review will be documented and maintained for a minimum of one year. The Company Required Confined Space Program will be reviewed whenever management believes that the requirements of this confined space program did not adequately protect personnel.
- After Entry Activities have concluded: The Controlling Employer (Employer acting as the General Contractor) must debrief each entity (Entry Employer) that entered a permit space regarding the permit space program followed and any hazards confronted or created in the permit space(s) during entry operations;
    - The entry employer must inform the controlling employer in a timely manner of the permit space program followed and of any hazards confronted or created in the permit space(s) during entry operations;
    - The controlling employer must notify the Company of the information exchanged with the entry employers during each debrief in writing. Each documented debrief will be archived for annual review.
    - If there is no controlling employer present at the worksite, the Company will communicate the results of the debriefing to other entry employers that might enter the permit required confined space.
    - If deficiencies are found in the program during program review, the program will be revised, and personnel will be trained in the new revisions before subsequent entries are

authorized.

Pre-Job Planning and Space Preparation

A hazard assessment must be performed (see the Confined Space Permit Form in the addendum) by the competent person to identify all confined spaces in which one or more of the employees it directs may work, and identifies each space that is a permit space, through consideration and evaluation of the elements of that space, including testing as necessary. Before entry operations begin, the Company must provide the following information, if it has it, to the controlling contractor:

- The location of each known permit space;
- The hazards or potential hazards in each space or the reason it is a permit space; and
- Any precautions that the host employer or any previous controlling contractor or entry employer implemented for the protection of employees in the permit space.
- Obtain the host employer's information about the permit space hazards and previous entry operations; and
- Provide the following information to each entity entering a permit space and any other contractor at the worksite whose activities could foreseeably result in a hazard in the permit space:
    - The information received from the host employer;
    - Any additional information the controlling contractor has about the confined space
    - The precautions that the host employer, controlling contractor, or other entry employers implemented for the protection of employees in the permit spaces.

The Entry Supervisor must determine that the confined space is properly isolated by blinding, disconnecting, and/or by following local Lockout/Tagout procedures.

The Entry Supervisor must discuss with all Entrants the hazards of the space, communication methods and emergency procedures during the confined space entry.

Eliminate any condition making it unsafe to open the equipment to atmosphere.

Promptly guard the opening to prevent an accidental fall through the opening and to protect each employee working in the space from foreign objects entering the space.

If applicable, wash, steam, ventilate or degas the confined space to properly free it of possible contaminants. Vent vapors to a safe location.

Do not allow unauthorized personnel to enter a confined space. Barricade and/or guard all confined spaces to prevent entry of unauthorized Entrants.

If performing hot work in the confined space, precautions must be taken consistent with the Company Hot Work Permit procedure.

Ensure that vehicle or other equipment exhaust does not enter the space.

Pre-Entry Safety Meeting (JSA)

The Entry Supervisor must declare when the confined space is ready for entry.

The Entry Supervisor shall hold a pre-entry safety meeting to discuss all requirements and procedures with all authorized Entrant(s) and Attendant(s) involved with the entry. The employee will discuss other concerns such as previous contents, vessel coating, PPE required etc., during this meeting.

The Entry Supervisor must coordinate entry operations when employees of more than one company are working simultaneously in the confined space. This coordination is necessary so that one company's work does not endanger the employees of another.

Equipment

Check all work equipment to ensure that it has the proper safety features and is approved for the locations where it will be used. The Entry Supervisor shall ensure that all equipment is properly maintained in a safe condition and that Entrants use the equipment properly.

The following equipment must be considered and may be required when entering a confined space:

- Atmospheric Testing and Monitoring Equipment.
- Barriers, Shields, and Signs – post signs and barricades all Permit-Required Confined Spaces and Non-Permit Required Confined Spaces to notify personnel that a confined space entry is in progress and unauthorized entry is prohibited. Any signs used must state "Danger – Permit Entry Confined Space" along with the proper warning word such as "Asphyxiate, Flammability or Toxic Hazard". All barricades must be capable of preventing a person from inadvertently walking into or kicking an object into the space.
- Communications Equipment – only use intrinsically safe equipment in areas where a hazardous atmosphere may exist. Use a communication system that will keep the Attendant in constant, direct communication with the Entrant(s) working in the confined space. Also, use a communication system that allows the Attendant to summon help from rescue or emergency service.
- Entry and Exit Equipment – (for example: ladders may be needed for safe entry and exit).
- Lighting Equipment – needed for safe entry, work within the space and exit. Lighting equipment used in the confined space must be certified safe for the location.
- Portable electric lighting used in wet and/or other conductive locations must be operated at 12 volts or less. 120-volt lights may be used if protected by a ground-fault circuit interrupter.
- Personal Protective Equipment – ensure that personnel wear the required personal protective equipment. For respiratory protection requirements, refer to the Respiratory Protection Program.
- Rescue and Emergency Equipment – except if provided by rescue services.
- The Attendants must also have an approved first aid kit.
- Vacuum Trucks – when used, trucks must be properly grounded or bonded to prevent static sparks.

- Ventilating Equipment – local exhaust air movers used to obtain acceptable atmospheric entry conditions (e.g., Copious air movers).
- Other – any other equipment necessary for safe entry into and rescue from permit required confined spaces.

Air Monitoring

Before an employee enters the space, the internal atmosphere shall be tested, with a calibrated direct-reading instrument, for oxygen content, for flammable gases and vapors, and for potential toxic air contaminants, in that order. Monitoring of the space must inform the entrants of the potential hazards and results and they must participate in the permit review and signing.

Air shall be continuously monitored while continuous ventilation is applied.

Any employee, who enters the space, or that employee's authorized representative, shall be provided an opportunity to observe the pre-entry testing required by this paragraph. Employees or their representatives are entitled to request additional air monitoring at any time.

Ventilation

Continuous forced air ventilation must be used and tested as follows:

- An employee may not enter the space until the forced air ventilation has eliminated any hazardous atmosphere;
- The forced air ventilation shall be so directed as to ventilate the immediate areas where an employee is or will be present within the space and shall continue until all employees have left the space;
- The air supply for the forced air ventilation shall be from a clean source and may not increase the hazards in the space.
- The atmosphere within the space shall be continuously monitored as necessary to ensure that the continuous forced air ventilation is preventing the accumulation of a hazardous atmosphere. Any employee, who enters the space, or that employee's authorized representative, shall be provided with an opportunity to observe the periodic testing and may request additional monitoring at any time.
- If a hazardous atmosphere is detected during entry each employee shall leave the space immediately and the space shall be evaluated to determine how the hazardous atmosphere developed; and measures shall be implemented to protect employees from the hazardous atmosphere before any subsequent entry takes place.

Multiple Employer Procedure

In order not to endanger the employees of any other employer, the Entry Supervisor shall:

- Verify that all contractor employees have been trained in confined space and that all contractor employees fully understand the Company procedures pertaining to Confined Space.
- Communicate the results of the confined space debriefing as required by this program.

- Inform the contractor that the workplace contains permit spaces and that permit space entry is allowed only through compliance with a permit space program meeting the requirements of this section.
- Apprise the contractor of the elements, including the hazards identified and the employees experience with the space, that make the space in question a permit space.
- Inform the contractor of any precautions or procedures that Company has implemented for the protection of employees in or near permit spaces where contractor personnel will be working.
- Coordinate entry operations with the contractor, when both Company personnel and contractor personnel will be working in or near confined spaces.
- Debrief the contractor at the conclusion of the entry operations regarding the permit space program followed and regarding any hazards confronted or created in confined spaces during entry operations.
- In addition to complying with the confined space requirements that apply to all employees; each contractor, who is retained to perform permit space entry operations, shall:
    - Obtain any available information regarding confined space hazards and entry operations from the Company Entry Supervisor.
    - Coordinate entry operations with the Company Entry Supervisor, when both Company personnel and contractor personnel will be working in or near permit spaces.
    - Inform the Company of the confined space program that the contractor will follow and of any hazards confronted or created in the confined space, either through a debriefing or during the entry operation.

Rescue and Emergency Services

General

If entry is to be made into an IDLH atmosphere, or into a space that can quickly develop an IDLH atmosphere (if ventilation fails or for other reasons), the trained rescue team or service must be standing by at the permit space while work is being performed. **Note**: the Company will use non-entry rescue whenever possible.

In case of an emergency and/or injuries, the confined space site shall be secured, and emergency response personnel shall be notified to respond per the Project Site Emergency Action Plan (EAP).

If there is reliance on the Project Site Owner or Project Site Owner's Rescue Services for rescue the Project Site Owner and the Project Site Owner Rescue Team must be given an opportunity to examine the entry site, practice rescue and decline as appropriate. Reliance on the Project Site Owner for the provision of rescue services must be stated and agreed to in contract language.

The Attendant shall order the other Entrants not to move the injured nor allow untrained or unauthorized workers into the space that are not trained to handle a confined space rescue.

Safety Data Sheet's (SDSs) for substances that an injured Entrant was exposed to must be provided to the medical facility treating the injured worker.

Permit-Required Confined Space Rescue

When the Attendant becomes aware of the need for rescue, the Attendant shall immediately attempt non-entry rescue. Should non-entry rescue not be successful the Attendant will summon the onsite rescue team by the agreed upon communication method, verbally, radio or cell phone, without leaving the vicinity of the confined space. If unsuccessful, call 911.

The Attendant shall prevent unauthorized personnel from attempting a rescue.

After the rescue team has been notified, the Attendant shall alert the Entry Supervisor of the emergency via the same communication methods.

Non-entry Rescue

The Company will only perform non-entry rescue as the primary rescue method. To facilitate non-entry rescue, an Entrant must be attached to a retrieval system whenever the employee enters a Permit-Required Confined Space.

Each Entrant shall use a full body harness equipped with a "D" ring located between the shoulders or above the head.

The retrieval line must be attached to the "D" ring and the other end of the retrieval line attached to a retrieval device or fixed point located the space so that rescue can begin as soon as the rescuer becomes aware that rescue is necessary.

Issuance / Reviewing of Permit

Only when all pre-entry requirements are satisfied, the Entry Supervisor shall issue a completed and signed confined space permit. The confined space permit is valid until the work is completed or the end of the shift – Confined Space Entry Permits are cancelled at the end of each shift.

In the event of any unauthorized entry, employee complaints, a hazard not covered by the permit, the occurrence of an injury or near miss the entry permit shall be suspended and a review shall be conducted to provide employee protection and for revising the program prior to authorizing subsequent entries.

An annual review of this program, using each of the suspended confined space entry permits retained within 1 year after each entry shall be conducted by the Safety Director and/or Safety Manager to revise the program as necessary, to ensure that employees are protected. If no confined space entries were performed during a 12-month period, no review is necessary.

Suspension / Closure of Permits

The Entry Supervisor shall suspend the confined space permit, at the end of the job operation, at the end of the shift or when the Entry Supervisor or Attendant determine that conditions in or near the confined space have changed and is hazardous to the Entrants.

The Entry Supervisor shall, at the conclusion of entry operation, close out the permit and provide the safety department the original copy of the Confined Space Permit.

Training

Training shall be provided so that all employees whose work is regulated by this program acquire the understanding, knowledge, and skills necessary for the safe performance of the duties assigned to them.

Training shall be provided to each affected employee, before the employee is first assigned duties under this program, if a new hazard has been created or special deviations have occurred and before there is a change in assigned duties. Training must be performed as follows:

- In both a language and vocabulary that the employee can understand;
- Before the employee is first assigned duties under this standard;
- Before there is a change in assigned duties;
- Whenever there is a change in permit space entry operations that presents a hazard about which an employee has not previously been trained; and
- Whenever there is any evidence of a deviation from the permit space entry procedures identifying inadequacies in the COMPANY employee's knowledge or use of these procedures.

The employee shall be retrained:

- Whenever there is a change in confined space operations that presents a hazard about which an employee has not previously been trained.
- Whenever the supervisor has reason to believe either that there are deviations from the permit space entry procedures required by this section or that there are inadequacies in the employee's knowledge or use of these procedures.

Confined Space Entry Program (29 CFR 1910.147 – General Industry)

The Company's Confined Space Entry Program (General Industry), may not be applicable to all jobsites, but can be found by clicking here.

Construction Walking Working Surfaces Safety Program

Housekeeping

During construction, alteration, or repairs, form and scrap lumber with protruding nails, and all other debris, shall be kept cleared from work areas, passageways, and stairs, in and around buildings or other structures. Combustible scrap and debris shall be removed at regular intervals during construction. Safe means shall be provided to facilitate such removal. Containers shall be provided for the collection and separation of waste, trash, oily and used rags, and other refuse. Containers used for garbage and other oily, flammable, or hazardous wastes, such as caustics, acids, harmful dusts, etc. shall be equipped with covers. Garbage and other waste shall be disposed of at frequent and regular intervals.

Sanitation

Potable Water (Drinking Water)

An adequate supply of potable water shall be provided in all places of employment. Portable containers used to dispense drinking water shall be capable of being tightly closed and equipped with a tap. Water shall not be dipped from containers. Company provides single user drinking water in bottles.

Any container used to distribute drinking water shall be clearly marked as to the nature of its contents and not used for any other purpose. The common drinking cup is prohibited. Where single service cups (to be used but once) are supplied, both a sanitary container for the unused cups and a receptacle for disposing of the used cups shall be provided.

Potable water means water that meets the standards for drinking purposes of the State or local authority having jurisdiction, or water that meets the quality standards prescribed by the U.S. Environmental Protection Agency's National Primary Drinking Water Regulations (40 CFR part 141).

Non-Potable Water

Outlets for non-potable water, such as water for industrial or firefighting purposes only, shall be identified by signs indicating clearly that the water is unsafe and is not to be used for drinking, washing, or cooking purposes. There shall be no cross-connection, open or potential, between a system furnishing potable water and a system furnishing non-potable water.

Toilets at Construction Jobsites

Toilets shall be provided for employees according to the following table:

Number of Employees	Minimum Number of Facilities
20 or Less	1
20 or More	1 Toilet and 1 Urinal per 40 Workers
200 or More	1 Toilet Seat and 1 Urinal per 50 Workers

Under temporary field conditions, provisions shall be made to assure not less than one toilet facility is available.

Job sites, not provided with a sanitary sewer, shall be provided with one of the following toilet facilities unless prohibited by local codes:

- Privies (where their use will not contaminate ground or surface water);
- Chemical toilets;
- Recirculating toilets;
- Combustion toilets.

Food Handling

All employees' food service facilities and operations shall meet the applicable laws, ordinances, and regulations of the jurisdictions in which they are located. All employee food service facilities and operations shall be carried out in accordance with sound hygienic principles. In all places of employment where all or part of the food service is provided, the food dispensed shall be wholesome, free from spoilage, and shall be processed, prepared, handled, and stored in such a manner as to be protected against contamination.

Temporary Sleeping Quarters

When temporary sleeping quarters are provided, they shall be heated, ventilated, and lighted.

Washing Facilities

Company shall provide adequate washing facilities for employees engaged in the application of paints, coating, herbicides, or insecticides, or in other operations where contaminants may be harmful to the employees. Such facilities shall be in near proximity to the worksite and shall be so equipped as to enable employees to remove such substances. Washing facilities shall be maintained in a sanitary condition.

Lavatories

Lavatories shall be made available in all places of employment. Each lavatory shall be provided with hot and cold running water, or tepid running water. Hand soap or similar cleansing agents shall be provided. Individual hand towels or sections thereof, of cloth or paper, air blowers or clean individual sections of continuous cloth toweling, convenient to the lavatories, shall be provided.

Showers

Whenever showers are required, the showers shall be provided in accordance with the following requirements:

- One shower shall be provided for each 10 employees of each sex, or numerical fraction thereof, who are required to shower during the same shift.
- Body soap or other appropriate cleansing agents convenient to the showers shall be provided.
- Showers shall be provided with hot and cold water feeding a common discharge line.
- Employees who use showers shall be provided with individual clean towels.

Eating and Drinking Areas

No employee shall be allowed to consume food or beverages in a toilet room nor in any area exposed to a toxic material.

Vermin Control

Every enclosed workplace shall be so constructed, equipped, and maintained, so far as reasonably practicable, as to prevent the entrance or harborage of rodents, insects, and other vermin. A continuing and effective extermination program shall be instituted where their presence is detected.

Change Rooms

Whenever employees are required to wear protective clothing because of the possibility of contamination with toxic materials, change rooms equipped with storage facilities for street clothes and separate storage facilities for the protective clothing shall be provided.

Illumination

Construction areas, aisles, stairs, ramps, runways, corridors, offices, shops, and storage areas where work is in progress shall be lighted with either natural or artificial illumination. Construction areas, ramps, runways, corridors, offices, shops, and storage areas shall be lighted to not less than the minimum illumination intensities listed in Table D-3 while any work is in progress:

Foot Candles	Construction Area or Operation
5	General construction area lighting
3	General construction areas, concrete placement, excavation and waste areas, access ways, active storage areas, loading platforms, refueling, and field maintenance areas
5	Indoors: warehouses, corridors, hallways, and exit ways
5	Tunnels, shafts, and general underground work areas: (Exception: minimum of 10 foot-candles is required at tunnel and shaft heading during drilling, mucking, and scaling. Bureau of Mines approved cap lights shall be acceptable for use in the tunnel heading)
10	General construction plant and shops (e.g., batch plants, screening plants, mechanical and electrical equipment rooms, carpenter shops, rigging lofts and active store rooms, mess halls, and indoor toilets and workrooms)
30	First aid stations, infirmaries, and offices

Other Areas

For areas or operations not covered above, refer to the American National Standard A11.1-1965, R1970, Practice for Industrial Lighting, for recommended values of illumination.

Fall Protection

See the Fall Protection Section of this Safety Program for all fall prevention and protection requirements.

Ladders

See the Ladder Safety Section of this Safety Program for all ladder safety Requirements.

Construction Equipment Safety Program

This program applies to motor vehicles, mechanized equipment, and equipment requiring roll overprotective systems used on a project site.

General Requirements

1. All equipment left unattended at night, adjacent to a highway in normal use, or adjacent to construction areas where work is in progress, shall have appropriate lights or reflectors, or barricades equipped with appropriate lights or reflectors, to identify the location of the equipment, unless in the clear zone.

2. A cage or equivalent protection shall be provided and used when inflating, mounting, or dismounting tires installed on split rims, or rims equipped with locking rings or similar devices, using extended reach air chucks.

3. Heavy machinery, equipment, or parts thereof, which are suspended or held aloft by use of slings, hoists, or jacks shall be substantially blocked or cribbed to prevent falling or shifting before employees are permitted to work under or between them. Bulldozer and scraper blades, end-loader buckets, dump bodies, and similar equipment, shall be either fully lowered or blocked when being repaired or when not in use. All controls shall be in a neutral position, with the motors stopped and brakes set, unless work being performed requires otherwise. Whenever the equipment is parked, the parking brake shall be set. Equipment parked on inclines shall have the wheels chocked and the parking brake set.

4. All cab glass shall be safety glass, or equivalent, that introduces no visible distortion affecting the safe operation of any machine or vehicle.

5. All equipment covered by this policy shall comply with the following requirements when working or being moved in the vicinity of power lines or energized transmitters, except where electrical distribution and transmission lines have been deenergized and visibly grounded at point of work or where insulating barriers, not a part of or an attachment to the equipment or machinery, have been erected to prevent physical contact with the lines:

6. For lines rated 50 kV or below, minimum clearance between the lines and any part of the crane or load shall be 10 feet;

7. For lines rated over 50 kV, minimum clearance between the lines and any part of the crane or load shall be 10 feet plus 0.4 inch for each 1 kV over 50 kV, or twice the length of the line insulator, but never less than 10 feet;

8. In transit with no load and boom lowered, the equipment clearance shall be a minimum of 4 feet for voltages less than 50 kV, and 10 feet for voltages over 50 kV, up to and including 345 kV, and 16 feet for voltages up to and including 750 kV;

9. A person shall be designated to observe clearance of the equipment and give timely warning for all operations where it is difficult for the operator to maintain the desired clearance by visual means;

10. Cage-type boom guards, insulating links, or proximity warning devices may be used on cranes, but the use of such devices shall not alter the requirements of any other regulation of this part even if such device is required by law or regulation;

11. Any overhead wire shall be considered to be an energized line unless and until the person owning such line or the electrical utility authorities indicate that it is not an energized line and it has been visibly grounded;

12. Prior to work near transmitter towers where an electrical charge can be induced in the equipment or materials being handled, the transmitter shall be de-energized or tests shall be made to determine if electrical charge is induced on the crane. The following precautions shall be taken when necessary to dissipate induced voltages;

13. The equipment shall be provided with an electrical ground directly to the upper rotating structure supporting the boom;

14. Ground jumper cables shall be attached to materials being handled by boom equipment when electrical charge is induced while working near energized transmitters. Crews shall be provided with nonconductive poles having large alligator clips or other similar protection to attach the ground cable to the load; and

15. Combustible and flammable materials shall be removed from the immediate area prior to operations.

Motor Vehicles

Motor vehicles as covered by this policy are those vehicles that operate within an off-highway jobsite, not open to public traffic.

General Requirements

1. All vehicles shall have a service brake system, an emergency brake system, and a parking brake system. These systems may use common components and shall be maintained in operable condition.
2. Whenever visibility conditions warrant additional light, all vehicles, or combinations of vehicles, in use shall be equipped with at least two headlights and two taillights in operable condition.
3. All vehicles, or combination of vehicles, shall have brake lights in operable condition regardless of light conditions.
4. All vehicles shall be equipped with an adequate audible warning device at the operator's station and in an operable condition.
5. No employer shall use any motor vehicle equipment having an obstructed view to the rear unless:

a. The vehicle has a reverse signal alarm audible above the surrounding noise level or:

b. The vehicle is backed up only when an observer signals that it is safe to do so.

6. All vehicles with cabs shall be equipped with windshields and powered wipers. Cracked and broken glass shall be replaced. Vehicles operating in areas or under conditions that cause fogging or frosting of the windshields shall be equipped with operable defogging or defrosting devices.

7. All haulage vehicles, except those with open cabs or arctic trucks, whose pay load is loaded by means of cranes, power shovels, loaders, or similar equipment, shall have a cab shield and/or canopy adequate to protect the operator from shifting or falling materials.
8. Tools and material shall be secured to prevent movement when transported in the same compartment with employees.
9. Vehicles used to transport employees shall have seats firmly secured and adequate for the number of employees to be carried.
10. Seat belts and anchorages meeting the requirements of 49 CFR part 571 (Department of Transportation, Federal Motor Vehicle Safety Standards) shall be installed in all motor vehicles.
11. Trucks with dump bodies shall be equipped with positive means of support, permanently attached, and capable of being locked in position to prevent accidental lowering of the body while maintenance or inspection work is being done.
12. Operating levers controlling hoisting or dumping devices on haulage bodies shall be equipped with a latch or other device which will prevent accidental starting or tripping of the mechanism.
13. Trip handles for tailgates of dump trucks shall be so arranged that, in dumping, the operator will be in the clear.
14. Mud flaps may be used in lieu of fenders whenever motor vehicle equipment is not designed for fenders.
15. All vehicles in use shall be checked at the beginning of each shift to assure that the following parts, equipment, and accessories are in safe operating condition and free of apparent damage that could cause failure while in use:
    a. Service Brakes, including trailer brake connections;
    b. Parking System (hand brake);
    c. Emergency Stopping System (brakes);
    d. Tires;
    e. Horn;
    f. Steering Mechanism;
    g. Coupling Devices;
    h. Seat Belts;
    i. Operating Controls; and
    j. Safety Devices.
16. All defects shall be corrected before the vehicle is placed in service. These requirements also apply to equipment such as lights, reflectors, windshield wipers, defrosters, fire extinguishers, etc., where such equipment is necessary.

Material Handling Equipment

Earthmoving Equipment

These rules apply to the following types of earthmoving equipment: scrapers, loaders, crawler or wheel tractors, bulldozers, off-highway trucks, graders, agricultural and industrial tractors, and similar equipment.

Seat Belts

- Seat belts shall be provided on all equipment covered by this policy and shall meet the requirements of the Society of Automotive Engineers, J386-1969, Seat Belts for Construction Equipment. Seat belts for agricultural and light industrial tractors shall meet the seat belt requirements of Society of Automotive Engineers J333a-1970, Operator Protection for Agricultural and Light Industrial Tractors.
- Seat belts need not be provided for equipment which is designed only for standup operation.
- Seat belts need not be provided for equipment which does not have roll-over protective structure (ROPS) or adequate canopy protection.

Access Roadways and Grades

No employer shall move or cause to be moved construction equipment or vehicles upon any access roadway or grade unless the access roadway or grade is constructed and maintained to accommodate safely the movement of the equipment and vehicles involved.

Every emergency access ramp and berm used by an employer shall be constructed to restrain and control runaway vehicles.

Audible Alarms

All bidirectional machines, such as rollers, compacters, front-end loaders, bulldozers, and similar equipment, shall be equipped with a horn, distinguishable from the surrounding noise level, which shall be operated as needed when the machine is moving in either direction. The horn shall be maintained in an operative condition.

No employer shall permit earthmoving or compacting equipment which has an obstructed view to the rear to be used in reverse gear unless the equipment has in operation a reverse signal alarm distinguishable from the surrounding noise level or an employee signals that it is safe to do so.

Scissor Points

Scissor points on all front-end loaders, which constitute a hazard to the operator during normal operation, shall be guarded.

Excavating and Other Equipment

Tractors shall have seat belts as required for the operators when seated in the normal seating arrangement for tractor operation, even though back-hoes, breakers, or other similar attachments are used on these machines for excavating or other work.

The safety requirements, ratios, or limitations applicable to machines or attachment usage covered in Power Crane and Shovel Associations Standards No. 1 and No. 2 of 1968, and No. 3 of 1969, shall be complied with, and shall apply to cranes, machines, and attachments under this part.

Lifting and Hauling Equipment

Lift trucks, stackers, etc., shall have the rated capacity clearly posted on the vehicle so as to be clearly visible to the operator. When auxiliary removable counterweights are provided by the manufacturer,

corresponding alternate rated capacities also shall be clearly shown on the vehicle. These ratings shall not be exceeded.

No modifications or additions which affect the capacity or safe operation of the equipment shall be made without the manufacturer's written approval. If such modifications or changes are made, the capacity, operation, and maintenance instruction plates, tags, or decals shall be changed accordingly. In no case shall the original safety factor of the equipment be reduced.

If a load is lifted by two or more trucks working in unison, the proportion of the total load carried by any one truck shall not exceed its capacity.

Steering or spinner knobs shall not be attached to the steering wheel unless the steering mechanism is of a type that prevents road reactions from causing the steering handwheel to spin. The steering knob shall be mounted within the periphery of the wheel.

All high lift rider industrial trucks shall be equipped with overhead guards which meet the configuration and structural requirements as defined in paragraph 421 of American National Standards Institute B56.1-1969, Safety Standards for Powered Industrial Trucks.

All industrial trucks in use shall meet the applicable requirements of design, construction, stability, inspection, testing, maintenance, and operation, as defined in American National Standards Institute B56.1-1969, Safety Standards for Powered Industrial Trucks.

Unauthorized personnel shall not be permitted to ride on powered industrial trucks. A safe place to ride shall be provided where riding of trucks is authorized.

Whenever a truck is equipped with vertical only, or vertical and horizontal controls elevatable with the lifting carriage or forks for lifting personnel, the following additional precautions shall be taken for the protection of personnel being elevated.

Use of a safety platform firmly secured to the lifting carriage and/or forks.

Means shall be provided whereby personnel on the platform can shut off power to the truck.

Such protection from falling objects as indicated necessary by the operating conditions shall be provided.

Pile Driving Equipment (Vibro Hammers and Diesel Hammers)

General Requirements

- All pressure vessels which are a part of, or used with, pile driving equipment shall meet the applicable requirements of the American Society of Mechanical Engineers, Pressure Vessels (section VIII).
- Overhead protection, which will not obscure the vision of the operator and which meets the requirements of subpart N of this part, shall be provided. Protection shall be the equivalent of 2-inch planking or other solid material of equivalent strength.
- Stop blocks shall be provided for the leads to prevent the hammer from being raised against the head block.
- A blocking device, capable of safely supporting the weight of the hammer, shall be provided for placement in the leads under the hammer at all times while employees are working under the hammer.

- Guards shall be provided across the top of the head block to prevent the cable from jumping out of the sheaves.
- When the leads must be inclined in the driving of batter piles, provisions shall be made to stabilize the leads.
- Fixed leads shall be provided with ladder, and adequate rings, or similar attachment points, so that the loft worker may engage his safety belt lanyard to the leads. If the leads are provided with loft platforms(s), such platform(s) shall be protected by standard guardrails.
- Steam hose leading to a steam hammer or jet pipe shall be securely attached to the hammer with an adequate length of at least ¼ -inch diameter chain or cable to prevent whipping in the event the joint at the hammer is broken. Air hammer hoses shall be provided with the same protection as required for steam lines.
- Safety chains, or equivalent means, shall be provided for each hose connection to prevent the line from thrashing around in case the coupling becomes disconnected.
- Steam line controls shall consist of two shutoff valves, one of which shall be a quick-acting lever type within easy reach of the hammer operator.
- Guys, outriggers, thrust outs, or counterbalances shall be provided as necessary to maintain stability of pile driver rigs.
- Engineers and winchmen shall accept signals only from the designated signalmen.
- All employees shall be kept clear when piling is being hoisted into the leads.
- When piles are being driven in an excavated pit, the walls of the pit shall be sloped to the angle of repose or sheet-piled and braced.
- When steel tube piles are being "blown out", employees shall be kept well beyond the range of falling materials.
- When it is necessary to cut off the tops of driven piles, pile driving operations shall be suspended except where the cutting operations are located at least twice the length of the longest pile from the driver.
- When driving jacked piles, all access pits shall be provided with ladders and bulkheaded curbs to prevent material from falling into the pit.

Site Clearing

- Employees engaged in site clearing shall be protected from hazards of irritant and toxic plants and suitably instructed in the first aid treatment available.
- All equipment used in site clearing operations shall be equipped with rollover guards meeting the requirements of this subpart. In addition, rider-operated equipment shall be equipped with an overhead and rear canopy guard meeting the following requirements:
    - The overhead covering on this canopy structure shall be of not less than 1⁄8-inch steel plate or 1⁄4-inch woven wire mesh with openings no greater than 1 inch, or equivalent.
    - The opening in the rear of the canopy structure shall be covered with not less than 1⁄4-inch woven wire mesh with openings no greater than 1 inch.

Rollover Protective Structures (ROPS) and Overhead Protection

This policy applies to the following types of material handling equipment: All rubber-tired, self-propelled scrapers, rubber-tired front-end loaders, rubber-tired dozers, wheel-type agricultural and industrial tractors, crawler tractors, crawler-type loaders, and motor graders, with or without attachments, that are used in construction work.

This policy also applies to compactors and rubber-tired skid-steer equipment, with or without attachments, manufactured after July 15, 2019, that are used in construction work.

This policy does not apply to side boom pipelaying tractors.

Equipment Manufactured Before July 15, 2019

Material handling equipment described in this policy (excluding compactors and rubber-tired skid-steer equipment) manufactured before July 15, 2019, shall be equipped with rollover protective structures. Agricultural and industrial tractors used in construction shall be equipped with rollover protective structures.

Equipment Manufactured On or After July 15, 2019

Material handling machinery described in this policy manufactured on or after July 15, 2019, shall be equipped with rollover protective. Agricultural and industrial tractors used in construction shall be equipped with rollover protective structures.

Remounting

ROPS removed for any reason, shall be remounted with equal quality, or better, bolts or welding as required for the original mounting.

Labeling

Each ROPS shall have the following information permanently affixed to the structure:

- Manufacturer or fabricator's name and address;
- ROPS model number, if any;
- Machine make, model, or series number that the structure is designed to fit.

Demolition Safety Program

Prior to permitting employees to start demolition operations, an engineering survey if required, is to be performed and documented, by a competent person, of the structure to determine the condition of the structure, framing, floors, and walls, and possibility of unplanned collapse of any portion of the structure. Any adjacent structure where employees may be exposed shall also be similarly checked. The Company shall have in writing evidence that such a survey has been performed. All demolition work performed is required to be in compliance with the engineering survey. All deviations from the engineering survey shall be preapproved by the survey engineer prior to performance. Employees are required to follow all instructions and guidelines set forth in the engineering survey to prevent potential collapse.

All electric, gas, water, steam, sewer, and other service lines shall be shut off, capped, or otherwise controlled, outside the building line before demolition work is started. In each case, any utility company which is involved shall be notified in advance.

If it is necessary to maintain any power, water or other utilities during demolition, such lines shall be temporarily relocated, as necessary, and protected.

It shall also be determined if any type of hazardous chemicals (including asbestos or lead paint), gases, explosives, flammable materials, or similarly dangerous substances have been used in any pipes, tanks, or other equipment on the property. When the presence of any such substances is apparent or suspected, testing and purging shall be performed, and the hazard eliminated before demolition is started. All questions regarding the past or present presence of hazardous materials should be immediately communicated to the Safety Team for clarification prior to starting or continuing demolition work.

Where a hazard exists from fragmentation of glass, such glass hazards should be removed prior to the start of demolition work.

Where a hazard exists to employees falling through wall openings, the opening shall be protected to a height of approximately 42 inches (+/- 3 inches) using standard railings, personal fall arrest systems, or alternate means. Refer to the Fall Protection Section of this Safety Program for additional information.

When debris is dropped through holes in the floor without the use of chutes, the area onto which the material is dropped shall be completely enclosed with barricades not less than 42 inches high and not less than 6 feet back from the projected edge of the opening above. Signs, warning of the hazard of falling materials, shall be posted at each level. Removal shall not be permitted in this lower area until debris handling ceases above.

All floor openings, not used as material drops, shall be covered over with material substantial enough to support the weight of any load which may be imposed. Such material shall be properly secured to prevent its accidental movement. These hole covers shall be marked “HOLE COVER” and shall be secured in place to prevent movement.

Except for the cutting of holes in floors for chutes, holes through which to drop materials, preparation of storage space, and similar necessary preparatory work, the demolition of exterior walls and floor

construction shall begin at the top of the structure and proceed downward. Each story of exterior wall and floor construction shall be removed and dropped into the storage space before commencing the removal of exterior walls and floors in the story next below.

Employee entrances to multi-story structures being demolished shall be completely protected by sidewalk sheds or canopies, or both, providing protection from the face of the building for a minimum of 8 feet. All such canopies shall be at least 2 feet wider than the building entrances or openings (1 foot wider on each side thereof) and shall be capable of sustaining a load of 150 pounds per square foot, unless it is infeasible to do so.

Demolition Stairs, Passageways, and Ladders

Only those stairways, passageways, and ladders, designated as means of access to the structure of a building, shall be used. Other access ways shall be entirely closed at all times. Barricades and signage will be used to close stairways, passageways, and ladderways.

All stairs, passageways, ladders, and incidental equipment thereto, which are covered by this Demolition Safety Program, shall be periodically inspected, and maintained in a clean safe condition.

If stairtowers are used, or a stairwell in a multistory building, it shall be properly illuminated by either natural or artificial means, and completely and substantially covered over at a point not less than two floors below the floor on which work is being performed, and access to the floor where the work is in progress shall be through a properly lighted, protected, and separate passageway.

Demolition Chutes

No material shall be dropped to any point lying outside the exterior walls of the structure unless the area is effectively protected. Fences, barricades with signage, and controlled access zones may be employed to protect the debris landing zone.

All materials chutes, or sections thereof, at an angle of more than 45° from the horizontal, shall be entirely enclosed, except for openings equipped with closures at or about floor level for the insertion of materials. The openings shall not exceed 48 inches in height measured along the wall of the chute. At all stories below the top floor, such openings shall be kept closed when not in use.

A substantial gate shall be installed in each chute at or near the discharge end. A competent employee shall be assigned to control the operation of the gate, and the backing and loading of trucks.

When operations are not in progress, the area surrounding the discharge end of a chute shall be securely closed off. Fences, barricades with signage, and controlled access zones may be employed to protect the debris landing zone.

Any chute opening, into which workmen dump debris, shall be protected by a substantial guardrail approximately 42 inches above the floor or other surface on which the personnel stand to dump the material. Any space between the chute and the edge of openings in the floors through which it passes shall be solidly covered over.

Where the material is dumped from mechanical equipment or wheelbarrows, a securely attached toe-board or bumper, not less than 4 inches thick and 6 inches high, shall be provided at each chute opening.

Chutes shall be designed and constructed of such strength as to eliminate failure due to impact of materials or debris loaded therein.

All material chutes shall contain signage designating them as "Material Chutes."

Demolition Removal of Materials through Floor Openings

Any openings cut in a floor for the disposal of materials shall be no larger in size than 25 percent of the aggregate of the total floor area, unless the lateral supports of the removed flooring remain in place.

Floors weakened or otherwise made unsafe by demolition operations shall be shored to carry safely the intended imposed load from demolition operations.

Demolition Removal of Masonry Sections, and Chimneys

Masonry walls, or other sections of masonry, shall not be permitted to fall upon the floors of the building in such masses as to exceed the safe carrying capacities of the floors and cause a potential collapse.

No wall section, which is more than one story in height, shall be permitted to stand alone without lateral bracing, unless such wall was originally designed and constructed to stand without such lateral support, and is in a condition safe enough to be self-supporting. All walls shall be left in a stable condition at the end of each shift.

Employees shall not be permitted to work on the top of a wall when weather conditions constitute a hazard.

Structural or load-supporting members on any floor shall not be cut or removed until all stories above such a floor have been demolished and removed. This provision shall not prohibit the cutting of floor beams for the disposal of materials or for the installation of equipment, provided that the requirements for Chutes outlined above are met.

Floor openings within 10 feet of any wall being demolished shall be planked solid, except when employees are kept out of the area below.

In buildings of "skeleton-steel" construction, the steel framing may be left in place during the demolition of masonry. Where this is done, all steel beams, girders, and similar structural supports shall be cleared of all loose material as the masonry demolition progresses downward.

Walkways or ladders shall be provided to enable employees to safely reach or leave any scaffold or wall.

Walls, which serve as retaining walls to support earth or adjoining structures, shall not be demolished until such earth has been properly braced or adjoining structures have been properly underpinned.

Walls, which are to serve as retaining walls against which debris will be piled, shall not be so used unless capable of safely supporting the imposed load.

Demolition Manual Removal of Floors

Openings cut in a floor shall extend the full span of the arch between supports.

Before demolishing any floor arch, debris and other material shall be removed from such arch and other adjacent floor area. Planks not less than 2 inches by 10 inches in cross section, full size undressed, shall be provided for, and shall be used by employees to stand on while breaking down floor arches between beams. Such planks shall be so located as to provide a safe support for the workmen should the arch between the beams collapse. The open space between planks shall not exceed 16 inches.

Safe walkways, not less than 18 inches wide, formed of planks not less than 2 inches thick if wood, or of equivalent strength if metal, shall be provided and used by workmen when necessary to enable them to reach any point without walking upon exposed beams.

Stringers of ample strength shall be installed to support the flooring planks, and the ends of such stringers shall be supported by floor beams or girders, and not by floor arches alone.

Planks shall be laid together over solid bearings with the ends overlapping at least 1 foot.

When floor arches are being removed, employees shall not be allowed in the area directly underneath, and such an area shall be barricaded to prevent access to it.

Demolition of floor arches shall not be started until they, and the surrounding floor area for a distance of 20 feet, have been cleared of debris and any other unnecessary materials.

Demolition Removal of Walls, Floors, and Materials Using Equipment

Mechanical equipment shall not be used on floors or working surfaces unless such floors or surfaces are of sufficient strength to support the imposed load.

Floor openings shall have curbs or stop-logs to prevent equipment from running over the edge.

Use of Cranes, Derricks, and Other Mechanical Equipment

The Company must meet the requirements specified in this Safety Program prior to using cranes, derricks, or other mechanical equipment in demolition. Sections are provided for each type of equipment in this Safety Program.

Demolition Storage

The storage of waste material and debris on any floor shall not exceed the allowable floor loads. Refer to the required Engineering Survey for information regarding floor loads throughout each demolition project. Contact the engineer of record for questions or whenever a particular floor load is nor present in the Engineering Survey.

In buildings having wooden floor construction, the flooring boards may be removed from not more than one floor above grade to provide storage space for debris, provided falling material is not permitted to endanger the stability of the structure.

When wood floor beams serve to brace interior walls or free-standing exterior walls, such beams shall be left in place until other equivalent support can be installed to replace them.

Floor arches, to an elevation of not more than 25 feet above grade, may be removed to provide storage area for debris: Provided, that such removal does not endanger the stability of the structure.

Storage space into which material is dumped shall be blocked off, except for openings necessary for the removal of material. Such openings shall be kept closed at all times when material is not being removed.

Demolition Removal of Steel Construction

When floor arches have been removed, planking in accordance with the Steel Erection Section of this Safety Program shall be provided for the workers engaged in razing the steel framing.

Cranes, derricks, and other hoisting equipment. The Company must meet the requirements specified in this Safety Program prior to using cranes, derricks, or other mechanical equipment in demolition. Sections are provided for each type of equipment in this Safety Program.

Steel construction shall be dismantled column length by column length, and tier by tier (columns may be in two-story lengths).

Any structural member being dismembered shall not be overstressed.

Mechanical Demolition

No workers shall be permitted in any area, which can be adversely affected by demolition operations, when balling or clamming is being performed. Only those workers necessary for the performance of the operations shall be permitted in this area at any other time.

The weight of the demolition ball shall not exceed 50 percent of the crane's rated load, based on the length of the boom and the maximum angle of operation at which the demolition ball will be used, or it shall not exceed 25 percent of the nominal breaking strength of the line by which it is suspended, whichever results in a lesser value.

The crane boom and load-line shall be as short as possible.

The ball shall be attached to the load-line with a swivel-type connection to prevent twisting of the load-line and shall be attached by positive means in such manner that the weight cannot become accidentally disconnected.

When pulling over walls or portions thereof, all steel members affected shall have been previously cut free.

All roof cornices or other such ornamental stonework shall be removed prior to pulling walls over.

During demolition, continuing inspections by a competent person shall be made as the work progresses to detect hazards resulting from weakened or deteriorated floors, or walls, or loosened material. No employee shall be permitted to work where such hazards exist until they are corrected by shoring, bracing, or other effective means.

Mechanical demolition may include the use of hydraulic excavators, breakers, shears, and/or other hydraulic attachments.

Demolition Using Explosives

All demolition using explosives shall be conducted by a licensed qualified contractor. All demolition work performed using explosives shall comply with all safety regulations found in OSHA 29 CFR 1926 Subpart U – Blasting and the Use of Explosives.

Electrical Safety Program

This program applies to all the Company's employees, temporary employees, and contractors. When work is performed on a non-owned or operated site, the operator's program shall take precedence, however, this document covers the Company's employees and contractors and shall be used on owned premises, or when an operator's program doesn't exist or is less stringent. All electrical components are deemed to be energized, unless determined otherwise by a certified electrician. No employee who is not trained in electrical safety shall perform any electrical work.

Definitions

Affected Personnel – personnel who normally use and work with electrical equipment, tools, and appliances, but who do not make repairs or perform lock out/tag out procedures.

Appliances – electrical devices not normally associated with commercial or industrial equipment such as air conditioners, computers, printers, copiers, coffee pots, microwave ovens, toasters, etc.

Circuit Breaker – a device designed to open and close a circuit by non-automatic means and to open the circuit automatically on a predetermined over current without injury to itself when properly applied within its rating.

Disconnecting Means – a device, or group of devices, or other means by which the conductors of a circuit can be disconnected from their source of supply.

Disconnecting Switch -a mechanical switching device used for isolating a circuit or equipment from a source of power.

Double Insulated Tool – tools designed of non-conductive materials that do not require a grounded, three wire plug.

Ground – connected to earth or some conducting body that serves in place of the earth.

Grounded Conductor – a conductor used to connect equipment or the grounded circuit of a wiring system to a grounding electrode or electrodes.

Ground Fault Circuit Interrupter (GFCI) – a device whose function is to interrupt the electric circuit to the load when a fault current to ground exceeds some predetermined value that is less than that required to operate the over current protective device of the supply circuit.

Insulated – a conductor encased within material of composition and thickness that is recognized as electrical insulation.

Premises Wiring – that interior and exterior wiring, including power, lighting, control, and signal circuit wiring together with all of its associated hardware, fittings, and wiring devices, both permanently and temporarily installed, which extends from the load end of the service drop, or load end of the service lateral conductors to the outlet (s). Such wiring does not include wiring internal to appliances, fixtures, motors, controllers, motor control centers, and similar equipment.

Qualified Person – one that has been trained in the repair, construction and operation of electrical equipment and the hazards involved.

Strain Relief – a mechanical device that prevents force from being transmitted to the connections or terminals of a cable or extension cord.

Class l Locations – are those in which flammable gases or vapors are or may be present in the air in quantities sufficient to produce explosive or ignitable mixtures.

Class 1 Division 1 – is a location (a) in which hazardous concentrations of flammable gases or vapors may exist under normal operating conditions; or (b) in which hazardous concentrations of such gases or vapors may exist frequently because of repairs or maintenance operations or because of leakage; or (c) in which a breakdown or faulty operation or equipment or processes might release hazardous concentrations of flammable gases or vapors, and might also cause simultaneous failure of electrical equipment.

Class 1 Division 2 – is a location (a) in which volatile flammable liquids or flammable gases are handled, processed, or used, but in which the hazardous liquid, vapors, or gases will normally be confined within closed containers or closed systems from which they can escape only in case of accidental rupture or breakdown of such containers or systems, or in of abnormal operation of equipment or (b) in which hazardous concentrations of gases or vapors are normally prevented by positive mechanical ventilation, and which might become hazardous through failure or abnormal operations of the ventilating equipment; or (c) that is adjacent to a Class 1, Division 1 location, and to which hazardous concentrations of gases or vapors might occasionally be communicated unless such communication is prevented by adequate positive-pressure ventilation from a source of clean air, and effective safeguards against ventilation failure are provided.

Class II locations – those that are hazardous because of the presence of combustible dust. Class II locations include the following:

Class II, Division 1 – is a location (a) in which combustible dust is or may be in suspension in the air under normal operating conditions, in quantities sufficient to produce explosive or ignitable mixtures; or (b) where mechanical failure or abnormal operation of machinery or equipment might cause such explosive or ignitable mixtures to be produced, and might also provide a source of ignition through simultaneous failure of electric equipment, operation of protection devices, or from other causes, or (c) in which combustible dusts of an electrically conductive nature may be present.

NOTE: This classification may include areas where metal dusts and powders are produced or processed, and other similar locations that contain dust producing machinery and equipment:

- These areas would have combustible dust in the air, under normal operating conditions, in quantities sufficient to produce explosive or ignitable mixtures.
- Combustible dusts that are electrically nonconductive include dusts produced in the handling and processing produce combustible dusts when processed or handled.
- Dusts containing magnesium or aluminum are particularly hazardous and the use of extreme caution is necessary to avoid ignition and explosion.

Class II, Division 2 – is a location in which: (a) combustible dust will not normally be in suspension in the air in quantities sufficient to produce explosive or ignitable mixtures, and dust accumulations are normally insufficient to interfere with the normal operation of electrical equipment or other apparatus; or (b) dust may be in suspension in the air as a result of infrequent malfunctioning of handling or

processing equipment, and dust accumulations resulting there from may be ignitable by abnormal operation or failure of electrical equipment or other apparatus.

> NOTE: This classification includes locations where dangerous concentrations of suspended dust would not be likely but where dust accumulations might form on or in the vicinity of electric equipment. These areas may contain equipment from which appreciable quantities of dust would escape under abnormal operating conditions or be adjacent to a Class II Division 1 location, as described above, into which an explosive or ignitable concentration of dust may be put into suspension under abnormal operating conditions.

Responsibilities

Supervisors/Foreman

The Safety Director will develop electrical safety programs and procedures in accordance with OSHA requirements, NFPA 70E, and/or as indicated by events and circumstances.

Operations Managers and Supervisor are responsible for ensuring that only qualified employees and or qualified contractors perform electrical repairs or installations.

Operations Managers are also responsible for ensuring all applicable electrical safety programs are implemented and maintained at their locations.

Employees are responsible to use electrical equipment, tools, and appliances according to this program, for attending required training sessions when directed to do so and to report unsafe conditions to their supervisor immediately.

Only qualified employees may work on electric circuit parts or equipment that has not been de-energized. Such employees shall be made familiar with the use of special precautionary techniques, PPE, insulating and shielding materials and insulated tools.

Safe Work Practices

Inspections

- Electrical equipment, tools, and appliances must be inspected prior to each use.
- The use of a hard fixed GFCI or a portable GFCI adapter shall be used with all portable hand tools, electric extension cords, drop lights and all 110 volt equipment. Electrical extension cords may only be used on a temporary basis.
- Faulty equipment, tools, or appliances shall be removed from service immediately and tagged “Out of Service”, dated and signed by the employee applying the tag.

Repairs

- Only Qualified Personnel, who have been authorized by the Safety Team, may make repairs to supply cords on electrical tools and to extension cords.
- Only certified electricians shall be allowed to make repairs to electrical equipment and wiring systems.
- The supervisor obtaining the services of a certified electrician is responsible to verify the electrician’s credentials.

- Employees shall not enter spaces containing exposed energized parts unless qualified and proper illumination exists to enable employees to work safely.
- Employees shall not wear conductive apparel such as rings, watches, jewelry, etc. (unless they are rendered non-conductive by covering, wrapping, or other insulating means) while working on or near open energized equipment this includes batteries on trucks, forklifts, phone backup systems or other such equipment.
- If employees are subject to handle long dimensional conductor objects (ducts or pipes), steps for safe work practices shall be employed to ensure the safety of workers.

Extension Cords

- Use only three-wire, grounded, extension cords and cables that conform to a hard service rating of 14 amperes or higher, and grounding of the tools or equipment being supplied.
- Only commercial or industrial rated-grounded extension cords may be used in shops and outdoors.
- Cords for use other than indoor appliances must have a rating of at least 14 amps.
- Cords must have suitable strain relief provisions at both the plug and the plug receptacle ends.
- Work lamps (drop light) used to power electrical tools must have a 3 wire, grounded outlet, unless powering insulated tools.
- Adapters that allow three wire grounded prongs, connected to two wire non-grounded outlets are strictly prohibited.
- Cords must have a service rating for hard or extra-hard service and have S, AJ, ST, SO, SJO, SJT, STO, or SJTO printed on the cord.
- Cords may not be run through doorways, under mats or carpets, across walkways or aisles, concealed behind walls, ceilings or floors, or run through holes in walls, or anywhere where they can become a tripping hazard.
- High current equipment or appliances should be plugged directly into a wall outlet whenever possible.
    - All extension cords shall be plugged into one of the following:
    - A GFCI outlet;
    - A GFCI built into the cord;
    - A GFCI adapter used between the wall outlet and cord plug.
- All extension cords and or electrical cords shall be inspected daily or before each use, for breaks, plug condition and ground lugs, possible internal breaks, and any other damage. If damage is found, the extension cord or electrical cord shall be remove from service and repaired or replaced.
- Extension cords shall not be used on compressor skid to operated heat tapes or any other type of equipment on a temporary basis. Heat tapes or other equipment shall be hard wired per applicable electrical codes.

Outlets

- Outlets connected to circuits with different voltages must use a design such that the attachment plugs on the circuits are not interchangeable.

Multiple Outlet Boxes

- Multiple outlet boxes must be plugged into a wall receptacle.
- Multiple outlet boxes must not be used to provide power to microwave ovens, toasters, space heaters, hot plates, coffeepots, or other high-current loads.

Double Insulated Tools

- Double insulated tools must have the factory label intact indicating the tool has been approved to be used without a three wire grounded supply cord connection.
- Double insulated tools must not be altered in any way, which would negate the factory rating. If altered, tag out and remove from service immediately.

Switches, Circuit Breakers, and Disconnects

- All electrical equipment and tools must have an on and off switch and may not be turned on or off by plugging or unplugging the supply cord at the power outlet.
- Circuit breaker panel boxes and disconnects must be labeled with the voltage rating.
- Each breaker within a breaker panel must be labeled for the service it provides.
- Disconnect switches providing power for individual equipment must be labeled accordingly.

Ladders

- Only approved, non-conductive ladders, may be used when working near or with electrical equipment, which includes changing light bulbs.
- Ladders must be either constructed of wood, fiberglass, or have non-conductive side rails.
- Wood ladders should not be painted, which can hide defects, except with clear lacquer.
- When using ladders they shall be free from any moisture, oils, and greases.

Energized and Overhead High Voltage Power Lines & Equipment

- A minimum clearance of 10 feet from high voltage lines must be maintained when operating vehicular and mechanical equipment such as forklifts, cranes, winch trucks, and other similar equipment. Note that Mobile Cranes are required to maintain a 20-foot clearance from utility Power lines.
- When possible, power lines shall be de-energized and grounded or other protective measures shall be provided before work is started.
- Minimum approach distance to energized high power voltages lines for unqualified employees is 10 feet.
- Minimum approach distance for qualified employees shall be followed per 29 CFR 1910.333(c)(3)(I) Qualified – Table S5 Selection and Use of Work Practices – Approach Distances for Qualified Employees – Alternating Current).

Contractors

- Only approved, certified, electrical contractors may perform construction and service work on Company or client property.
- It is the Safety Team responsibility to verify the contractor's certification.

Fire Extinguishers (Class-C)

- Approved fire extinguishers must be provided near electrical breaker panels and distribution centers.
- Water type extinguishers shall not be located closer than 50 feet from electrical equipment.

Electric Shock-CPR:

- If someone is discovered that has received an electric shock and is unconscious, first check to see if their body is in contact with an electrical circuit. Do not touch a person until you are sure there is no contact with an electrical circuit.
- When it is safe to contact the victim, begin CPR if the person's heart has stopped or they are not breathing.
- Call for help immediately.

Electric Welders

- A disconnecting means shall be provided in the supply circuit for each motor-generator arc welder, and for each AC transformer and DC rectifier arc welder which is not equipped with a disconnect mounted as an integral part of the welder.
- A switch or circuit breaker shall be provided by which each resistance welder and its control equipment can be isolated from the supply circuit. The ampere rating of this disconnecting means may not be less than the supply conductor opacity.

Equipment Grounding

- All gas compressors, air compressors, separators, vessels, etc. shall be grounded by means of using a lug and ground strap, nominal in size to a ½" bolt or larger, attached to a ground rod six feet or longer.
- Equipment bonding jumpers shall be of copper or other corrosion-resistance material.
- The transfer of hazardous or flammable material from a metal or plastic container with a flash point of 100 degrees F or less shall have a ground strap from the container and attached to the skid or a ground rod placed in the ground.

Training

- All regular full time and temporary employees will be trained in Electrical Safety utilizing the Company's New Employee Safety Orientation course or an approved equivalent.
- Employees who face a risk of electric shock, but who are not qualified persons, shall be trained and familiar with electrically related safety practices.
- Employee shall be trained in safety related work practices that pertain to their respective job assignments.
- Employees shall be trained on clearance distances.
- Safe work practices shall be employed to prevent electric shock or other injuries resulting for either direct or indirect electrical contacts when work is performed near or on equipment or circuits which are or may be energized.
- Any employee who is injured by an electrical source must be safely disconnected by an individual trained to do so, and 911 must be contacted immediately.

Electrical Safety – Working Near Overhead Lines

The following procedures will be used when any work commences near or under overhead electrical lines.

Energized and Overhead High Voltage Power Lines & Equipment

- A minimum clearance of 10 feet from high voltage lines must be maintained when operating vehicular and mechanical equipment such as forklifts, cranes, winch trucks, and other similar equipment. Note that Mobile Cranes are required to maintain a 20-foot clearance from utility Power lines.
- When possible, power lines shall be de-energized and grounded or other protective measures shall be provided before work is started.
- Minimum approach distance to energized high power voltages lines 300 V – 50,000 V for unqualified employees is 10 feet. Additional distance may be required for voltages in accordance with the table below.
- Minimum approach distance for qualified employees shall be followed per 29 CFR 1910.333(c)(3)(I) Qualified – Table S5 Selection and Use of Work Practices – Approach Distances for Qualified Employees – Alternating Current).
- If lightning is spotted within 10 miles of an outdoor workspace, all work must cease.

Energized and Overhead High Voltage Lines and Equipment Procedures

- Follow the guidelines provided in OSHA'S Overhead Power Line Safety laminated card.
- Develop and implement written safety programs to help workers recognize and control the hazards of contact with overhead power lines.
- Conduct initial and daily surveys of the worksite and implement control measures and training to address hazards at the site.
- A successful defense against electrical accidents is the continuous exercising of good judgment or common sense. All employees should be thoroughly familiar with the safety procedures for their particular jobs. When work is performed on electrical equipment, for example, some basic procedures are:
- Have the equipment de-energized.
- Ensure that the equipment remains de-energized by using some type of lockout and tag procedure.
- Use grounding lines when they are required.
- Use insulating equipment.
- Keep a safe distance from energized parts.
- Don't operate equipment around overhead power lines unless you are authorized and trained to do so.
- If an object (scaffolds, crane, etc.) must be moved in the area of overhead power lines, appoint a competent worker whose sole responsibility is to observe the clearance between the power lines and the object. Warn others if the minimum distance is not maintained.
- Never touch an overhead line if it has been brought down by machinery or has fallen. Never assume lines are dead.

- When a machine is in contact with an overhead line, DO NOT allow anyone to come near or touch the machine. Stay away from the machine and summon the assistance of the Safety Team. Dial 9-1-1 for all emergencies, i.e., medical, fire, police, etc.
- Also, never touch a person who is in contact with a live power line.
- Be trained in cardiopulmonary resuscitation (CPR).
- If you should be in a vehicle that is in contact with an overhead power line, DON'T LEAVE THE VEHICLE. As long as you stay inside and avoid touching metal on the vehicle, you may avoid an electrical hazard. If you need to get out to summon help or because of fire, jump out without touching any wires or the machine, keep your feet together, and hop to safety.
- When mechanical equipment is being operated near overhead power lines, employees standing on the ground may not contact the equipment unless it is located so that the required clearance cannot be violated even at the maximum reach of the equipment.
- To maximize his or her own safety, an employee should always use tools that work properly.
- Tools must be inspected before use and, those found questionable, removed from service and properly tagged. Tools and other equipment should be regularly maintained. Inadequate maintenance can cause equipment to deteriorate, resulting in an unsafe condition.
- Tools that are used by employees to handle energized conductors must be designed and constructed to withstand the voltages and stresses to which they are exposed.
- Use the personal protective equipment appropriate for the job that is performed. This equipment may consist of rubber insulating gloves, hoods, sleeves, matting, blankets, etc. These items must be inspected prior to each use and tested annually.
- When working near overhead power lines, the use of non-conductive wooden or fiberglass ladders is recommended. Aluminum ladders and metal scaffolds or frames are efficient conductors of electricity.
- Avoid storing materials under or near overhead power lines.

Emergency Action Plan

Severe Weather Preparedness

A Severe Weather Emergency Action Plan outlines procedures to take during severe weather events, including tornadoes, thunderstorms, heavy rain, floods, and snowstorms, to ensure safety and minimize damage by identifying potential hazards, designating safe areas, establishing communication protocols, and outlining evacuation procedures when necessary.

Key Components of the Company's Severe Weather Emergency Action Plan:

1. Assessment and Planning:

- **Identify Hazards:** Analyze local weather patterns to identify potential risks like tornadoes, flooding, lightning strikes, and high winds.
- **Designated Safe Areas:** Determine designated shelter-in-place locations within each project site, including areas away from windows and on lower floors for potential tornado threats.
- **Communication Plan:** Establish communication channels for alerting staff and residents about approaching storms, including designated contact persons and methods like PA systems, email, and text messages.

2. Pre-Storm Preparations:

- **Emergency Kits:** Ensure readily accessible emergency kits containing essential supplies like water, non-perishable food, first-aid supplies, flashlights, batteries, portable radios, and important documents.
- **Secure Loose Items:** Secure outdoor furniture, trash cans, and loose items that could become projectiles during high winds.
- **Monitor Weather Reports:**
  - Continuously monitor weather forecasts and warnings from reliable sources like local news, weather apps, or NOAA Weather Radio.
  - Promote the use of Weather Applications at all project sites to track severe weather and receive weather-related warning and watch notices from the National Weather Service (NWS).

3. During a Severe Storm:

- **Evacuation Procedures:**
  - **Tornado Warning:** Move immediately to designated shelter-in-place areas, following established evacuation routes.
  - **Flash Flooding:** If flooding is imminent, evacuate low-lying areas and move to higher ground.
  - **Shelter-in-Place Actions:**
    - Turn off utilities as necessary.
    - Stay away from windows and doors.
    - Cover yourself with blankets or mattresses if available.

- **Communication:** Maintain communication with designated personnel and follow instructions regarding updates on the storm's severity.

4. Post-Storm Actions:

- **Damage Assessment:** Evaluate damage to the building and surrounding area, prioritizing safety concerns.
- **Power Outage Procedures:** Implement contingency plans for power outages, including generator usage if applicable.
- **Clean-up and Recovery:** Initiate clean-up operations, addressing potential hazards like debris and damaged structures.
- **Important Considerations:**
  - **Staff Training:** Conduct regular training sessions for all staff to ensure familiarity with the emergency action plan and proper response procedures.
  - **Accessibility:** Consider the needs of individuals with disabilities when developing evacuation routes and shelter-in-place locations.
  - **Regular Updates:** Review and update the plan as needed based on changing weather patterns, building modifications, or new emergency preparedness guidelines.

First Aid/Medical Reporting Procedures

The following procedure must be followed by the Company's superintendents and supervisor on all incidents **(including Owner Controlled Insurance Programs (OCIP) and Contractor-Controlled Insurance Program (CCIP) incidents)** that occur on Company projects, no matter how small the incident.

First aid – minor incidents requiring only minor on the job first aid, follow the procedure below immediately:

- In the case of a minor incident requiring only first aid, ensure that the employee is properly treated using the Company's first aid kit or project first aid kit.
- Report all incidents to the Safety Director and Safety Team and complete the Incident Report Form.

Any Minor Incident such as minor back injuries, minor eye injuries, minor burns that require non-emergency medical treatment, follow the procedure below immediately:

- At the medical treatment facility, ensure that the post-incident substance abuse screening is performed. Request this in person or with documentation to the medical provider.
- All injured must be immediately reported to the site superintendent or safety manager
- Complete the incident report form (using the form in HCSS) including witness statements of all witnesses to the incident.

Any incident Requiring Emergency Treatment or Hospitalization, follow the procedure below immediately:

- An off-site medical facility will be designated in each Site-Specific Safety Plan.

- Management shall post workers to direct EMTs to the site of the injury, assign a worker to maintain communication to relay messages and then personally go to the site of the injury to provide aid and direction.
- The Safety Team must notify its required partners in the event of any incident requiring emergency treatment or hospitalization.

Excavation Safety Program

This policy applies to all open excavations made in the earth's surface. Excavations are defined to include trenches.

Definitions

Accepted Engineering Practices – those requirements which are compatible with standards of practice required by a registered professional engineer.

Aluminum Hydraulic Shoring – a pre-engineered shoring system comprised of aluminum hydraulic cylinders (cross braces) used in conjunction with vertical rails (uprights) or horizontal rails (Wales). Such system is designed specifically to support the sidewalls of an excavation and prevent cave-ins.

Bell-Bottom Pier Hole – a type of shaft or footing excavation, the bottom of which is made larger than the cross section above to form a belled shape.

Benching (Benching System) – a method of protecting employees from cave-ins by excavating the sides of an excavation to form one or a series of horizontal levels or steps, usually with vertical or near-vertical surfaces between levels.

Cave-In – separation of a mass of soil or rock material from the side of an excavation, or the loss of soil from under a trench shield or support system, and its sudden movement into the excavation, either by falling or sliding, in sufficient quantity so that it could entrap, bury, or otherwise injure and immobilize a person.

Competent Person – one who is capable of identifying existing and predictable hazards in the surroundings, or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

Cross Braces – the horizontal members of a shoring system installed perpendicular to the sides of the excavation, the ends of which bear against either uprights or wales.

Excavation – any man-made cut, cavity, trench, or depression in an earth surface, formed by earth removal.

Faces or Sides – the vertical or inclined earth surfaces formed as a result of excavation work.

Failure – the breakage, displacement, or permanent deformation of a structural member or connection so as to reduce its structural integrity and its supportive capabilities.

Hazardous Atmosphere – an atmosphere which by reason of being explosive, flammable, poisonous, corrosive, oxidizing, irritating, oxygen deficient, toxic, or otherwise harmful, may cause death, illness, or injury.

Kickout – the accidental release or failure of a cross brace.

Protective System – a method of protecting employees from cave-ins, from material that could fall or roll from an excavation face or into an excavation, or from the collapse of adjacent structures. Protective

systems include support systems, sloping and benching systems, shield systems, and other systems that provide the necessary protection.

Ramp – an inclined walking or working surface that is used to gain access to one point from another and is constructed from earth or from structural materials such as steel or wood.

Registered Professional Engineer – a person who is registered as a professional engineer in the state where the work is to be performed. However, a professional engineer, registered in any state is deemed to be a "registered professional engineer" within the meaning of this standard when approving designs for "manufactured protective systems" or "tabulated data" to be used in interstate commerce.

Sheeting – the members of a shoring system that retain the earth in position and in turn are supported by other members of the shoring system.

Shield (Shield System) – a structure that is able to withstand the forces imposed on it by a cave-in and thereby protect employees within the structure. Shields can be permanent structures or can be designed to be portable and moved along as work progresses. Additionally, shields can be either premanufactured or job built. Shields used in trenches are usually referred to as "trench boxes" or "trench shields." Although allowed, the Company typically does not utilize job-built trench boxes.

Shoring (Shoring System) – a structure such as a metal hydraulic, mechanical or timber shoring system that supports the sides of an excavation and which is designed to prevent cave-ins.

Sloping (Sloping System) – a method of protecting employees from cave-ins by excavating to form sides of an excavation that are inclined away from the excavation so as to prevent cave-ins. The angle of incline required to prevent a cave-in varies with differences in such factors as the soil type, environmental conditions of exposure, and application of surcharge loads.

Stable Rock – natural solid mineral material that can be excavated with vertical sides and will remain intact while exposed. Unstable rock is considered to be stable when the rock material on the side or sides of the excavation is secured against caving-in or movement by rock bolts or by another protective system that has been designed by a registered professional engineer.

Structural Ramp – a ramp built of steel or wood, usually used for vehicle access. Ramps made of soil or rock are not considered structural ramps.

Support System - a structure such as underpinning, bracing, or shoring, which provides support to an adjacent structure, underground installation, or the sides of an excavation.

Tabulated Data – tables and charts approved by a registered professional engineer and used to design and construct a protective system.

Trench (Trench Excavation) – a narrow excavation (in relation to its length) made below the surface of the ground. In general, the depth is greater than the width, but the width of a trench (measured at the bottom) is not greater than 15 feet (4.6 m). If forms or other structures are installed or constructed in an excavation so as to reduce the dimension measured from the forms or structure to the side of the excavation to 15 feet (4.6 m) or less (measured at the bottom of the excavation), the excavation is also considered to be a trench.

Uprights - the vertical members of a trench shoring system placed in contact with the earth and usually positioned so that individual members do not contact each other. Uprights placed so that individual members are closely spaced, in contact with or interconnected to each other, are often called "sheeting."

Wales – horizontal members of a shoring system placed parallel to the excavation face whose sides bear against the vertical members of the shoring system or earth.

Specific Excavation Requirements

Surface Encumbrances

All surface encumbrances that are located so as to create a hazard to employees shall be removed or supported, as necessary, to safeguard employees.

Underground Installations

The estimated location of utility installations, such as sewer, telephone, fuel, electric, water lines, or any other underground installations that reasonably may be expected to be encountered during excavation work, shall be determined and properly located and marked prior to opening an excavation.

Utility companies or property/project owners shall be contacted within established or customary local response times, advised of the proposed work, and asked to establish the location of the utility underground installations prior to the start of actual excavation. 811, “Call Before You Dig,” or its equivalent must be contacted prior to beginning work. If the location is not covered by 811 (or its equivalent), the property/project owner must be contacted directly.

When excavation operations approach the estimated location of underground installations, the exact location of the installations shall be determined by safe and acceptable means.

While the excavation is open, underground installations shall be protected, supported or removed as necessary to safeguard employees.

Access and Egress

Structural Ramps

- Structural ramps that are used solely by employees as a means of access or egress from excavations shall be designed by a competent person. Structural ramps used for access or egress of equipment shall be designed by a competent person qualified in structural design and shall be constructed in accordance with the design.
- Ramps and runways constructed of two or more structural members shall have the structural members connected to prevent displacement.
- Structural members used for ramps and runways shall be of uniform thickness.
- Cleats or other appropriate means used to connect runway structural members shall be attached to the bottom of the runway or shall be attached in a manner to prevent tripping.
- Structural ramps used in lieu of steps shall be provided with cleats or other surface treatments on the top surface to prevent slipping.
- When sloping in a ramp for access/egress into an excavation, your ramp may not exceed a 1 (vertical) to 3 (horizontal) ratio. This is equivalent to a 20-degree slope.

Means of Egress from Trench Excavations

A stairway, ladder, ramp, or other safe means of egress shall be located in trench excavations that are 4 feet (1.22 m) or more in depth so as to require no more than 25 feet (7.62 m) of lateral travel for employees.

Exposure to Vehicular Traffic

Employees exposed to public vehicular traffic shall be provided with, and shall wear at a minimum, ANSI Class 3 High-Visibility Vests or other suitable garments marked with or made of reflectorized or high-visibility material.

Exposure to Falling Loads

No employee shall be permitted underneath loads handled by lifting or digging equipment. Employees shall be required to stand away from any vehicle being loaded or unloaded to avoid being struck by any spillage or falling materials. Operators may remain in the cabs of vehicles being loaded or unloaded when the vehicles are equipped to provide adequate protection for the operator during loading and unloading operations.

Warning System for Mobile Equipment

When mobile equipment is operated adjacent to an excavation, or when such equipment is required to approach the edge of an excavation, and the operator does not have a clear and direct view of the edge of the excavation, a warning system shall be utilized such as barricades, hand, or mechanical signals, or stop logs. If possible, the grade should be away from the excavation.

Hazardous Atmospheres

Testing and Controls:

To prevent exposure to harmful levels of atmospheric contaminants and to assure acceptable atmospheric conditions, the following requirements shall apply:

Where oxygen deficiency (atmospheres containing less than 19.5 percent oxygen) or a hazardous atmosphere exists or could reasonably be expected to exist, such as in excavations in landfill areas or excavations in areas where hazardous substances are stored nearby, the atmospheres in the excavation shall be tested before employees enter excavations greater than 4 feet (1.22 m) in depth.

Adequate precautions shall be taken to prevent employee exposure to atmospheres containing less than 19.5 percent oxygen and other hazardous atmospheres. These precautions include providing proper respiratory protection or ventilation.

Adequate precaution shall be taken such as providing ventilation, to prevent employee exposure to an atmosphere containing a concentration of a flammable gas in excess of 20 percent of the lower flammable limit of the gas.

When controls are used that are intended to reduce the level of atmospheric contaminants to acceptable levels, testing shall be conducted as often as necessary to ensure that the atmosphere remains safe.

Emergency Rescue Equipment

Emergency rescue equipment, such as breathing apparatus, a safety harness and line, or a basket stretcher, shall be readily available where hazardous atmospheric conditions exist or may reasonably be expected to develop during work in an excavation. This equipment shall be attended when in use.

Employees entering bell-bottom pier holes, or other similar deep and confined footing excavations, shall wear a harness with a lifeline securely attached to it. The lifeline shall be separate from any line used to handle materials and shall be individually always attended while the employee wearing the lifeline is in the excavation.

Protection from Hazards Associated with Water Accumulation

Employees shall not work in excavations in which there is accumulated water, or in excavations in which water is accumulating, unless adequate precautions have been taken to protect employees against the hazards posed by water accumulation. The precautions necessary to protect employees adequately vary with each situation but could include special support or shield systems to protect from cave-ins, water removal to control the level of accumulating water, or use of a safety harness and lifeline.

If water is controlled or prevented from accumulating by the use of water removal equipment, the water removal equipment and operations shall be monitored by an excavation competent person to ensure proper operation.

If excavation work interrupts the natural drainage of surface water (such as streams), diversion ditches, dikes, or other suitable means shall be used to prevent surface water from entering the excavation and to provide adequate drainage of the area adjacent to the excavation. Excavations subject to runoff from heavy rains will require an inspection by a competent person.

Stability of Adjacent Structures

Where the stability of adjoining buildings, walls, or other structures is endangered by excavation operations, support systems such as shoring, bracing, or underpinning shall be provided to ensure the stability of such structures for the protection of employees.

Excavation below the level of the base or footing of any foundation or retaining wall that could be reasonably expected to pose a hazard to employees shall not be permitted except when:

- A support system, such as underpinning, is provided to ensure the safety of employees and the stability of the structure; or
- The excavation is in stable rock; or
- A registered professional engineer has approved the determination that the structure is sufficiently removed from the excavation so as to be unaffected by the excavation activity; or
- A registered professional engineer has approved the determination that such excavation work will not pose a hazard to employees.

Sidewalks, pavements, and appurtenant structure shall not be undermined unless a support system or another method of protection is provided to protect employees from the possible collapse of such structures.

Protection of Employees from Loose Rock or Soil

Adequate protection shall be provided to protect employees from loose rock or soil that could pose a hazard by falling or rolling from an excavation face. Such protection shall consist of scaling to remove loose material; installation of protective barricades at intervals as necessary on the face to stop and contain falling material; or other means that provide equivalent protection.

Employees shall be protected from excavated or other materials or equipment that could pose a hazard by falling or rolling into excavations. Protection shall be provided by placing and keeping such materials or equipment at least 2 feet from the edge of excavations, or by the use of retaining devices that are sufficient to prevent materials or equipment from falling or rolling into excavations, or by a combination of both if necessary.

Inspections

Daily inspections of excavations, the adjacent areas, and protective systems shall be made by a competent person for evidence of a situation that could result in possible cave-ins, indications of failure of protective systems, hazardous atmospheres, or other hazardous conditions. An inspection shall be conducted by the competent person prior to the start of work and as needed throughout the shift. Inspections shall also be made after every rainstorm or other hazard increasing occurrence. These inspections are only required when employee exposure can be reasonably anticipated.

Where the competent person finds evidence of a situation that could result in a possible cave-in, indications of failure of protective systems, hazardous atmospheres, or other hazardous conditions, exposed employees shall be removed from the hazardous area until the necessary precautions have been taken to ensure their safety.

Walkways shall be provided where employees or equipment are required or permitted to cross over excavations. Guardrails shall be provided where walkways are 6 feet (1.8 m) or more above lower levels. The Excavation Checklist, located within HCSS, must be completed by a competent person.

Protection of Employees in Excavations

Each employee in an excavation shall be protected from cave-ins by an adequate protective system except when:

- Excavations are made entirely in stable rock; or
- Excavations are less than 5 feet (1.52m) in depth and examination of the ground by a competent person provides no indication of a potential cave-in.

Protective systems shall have the capacity to resist without failure all loads that are intended or could reasonably be expected to be applied or transmitted to the system.

Design of Sloping and Benching Systems

The slopes and configurations of sloping and benching systems shall be selected and constructed by the employer or his designee and shall be constructed as follows:

- **Option (1)** – Allowable Configurations and Slopes
    - Excavations shall be sloped at an angle not steeper than one and one-half horizontal to one vertical (34 degrees measured from the horizontal), unless the employer uses one of the other options listed below. Slopes shall be excavated to form configurations that are

in accordance with the slopes shown for Type C soil (34 Degrees 1-1/2 – 1 Slope), unless directed otherwise.

- **Option (2)** – Determination of Slopes and Configurations using OSHA 1926 Subpart P - Appendices A and B. Maximum allowable slopes, and allowable configurations for sloping and benching systems, shall be determined in accordance with the conditions and requirements set forth in appendices A and B to OSHA 29 CFR 1926 Subpart P.
- **Option (3)** – Designs Using Other Tabulated Data
- Designs of sloping or benching systems shall be selected from and be in accordance with tabulated data, such as tables and charts.
- The tabulated data shall be in written form and shall include all of the following:
  - Identification of the parameters that affect the selection of a sloping or benching system drawn from such data;
  - Identification of the limits of use of the data, to include the magnitude and configuration of slopes determined to be safe;
  - Explanatory information as may be necessary to aid the user in making a correct selection of a protective system from the data.
  - At least one copy of the tabulated data which identifies the registered professional engineer who approved the data, shall be maintained at the jobsite during construction of the protective system. After that time the data may be stored off the jobsite.
- **Option (4)** – Design by a Registered Professional Engineer
- Sloping and benching systems not utilizing Option (1) or Option (2) or Option (3) shall be approved by a registered professional engineer.
- Designs shall be in written form and shall include at least the following:
  - The magnitude of the slopes that were determined to be safe for the particular project;
  - The configurations that were determined to be safe for the particular project; and
  - The identity of the registered professional engineer approving the design.
  - At least one copy of the design shall be maintained at the jobsite while the slope is being constructed. After that time the design need not be at the jobsite.

Design of Support Systems, Shield Systems, and Other Protective Systems

Designs of support systems shield systems, and other protective systems shall be selected and constructed by the employer as follows:

- **Option (1)** – Designs using OSHA 29 CFR 1926 Subpart P Appendices A, C and D. Designs for timber shoring in trenches shall be determined in accordance with the conditions and requirements set forth in appendices A and C to OSHA 29 CFR 1926 Subpart P. Designs for aluminum hydraulic shoring shall be in accordance with OSHA 29 CFR 1926(c)(2), but if manufacturer's tabulated data cannot be utilized, designs shall be in accordance with OSHA 29 CFR 1926 Subpart P Appendix D.
- **Option (2)** – Designs Using Manufacturer's Tabulated Data
  - Design of support systems, shield systems, or other protective systems that are drawn from manufacturer's tabulated data shall be in accordance with all specifications, recommendations, and limitations issued or made by the manufacturer.

  - Deviation from the specifications, recommendations, and limitations issued or made by the manufacturer shall only be allowed after the manufacturer issues specific written approval.
  - Manufacturer's specifications, recommendations, and limitations, and manufacturer's approval to deviate from the specifications, recommendations, and limitations shall be in written form at the jobsite during construction of the protective system. After that time this data may be stored off the jobsite.

- **Option (3)** – Designs Using Other Tabulated Data
  - Designs of support systems, shield systems, or other protective systems shall be selected from and be in accordance with tabulated data, such as tables and charts.
  - The tabulated data shall be in written form and include all of the following:
  - Identification of the parameters that affect the selection of a protective system drawn from such data;
  - Identification of the limits of use of the data;
  - Explanatory information as may be necessary to aid the user in making a correct selection of a protective system from the data.
  - At least one copy of the tabulated data, which identifies the registered professional engineer who approved the data, shall be maintained at the jobsite during construction of the protective system. After that time the data may be stored off the jobsite.
- **Option (4)** – Design by a Registered Professional Engineer
  - Support systems, shield systems, and other protective systems not utilizing Option 1, Option 2 or Option 3, above, shall be approved by a registered professional engineer.
  - Designs shall be in written form and shall include the following:
  - A plan indicating the sizes, types, and configurations of the materials to be used in the protective system; and
  - The identity of the registered professional engineer approving the design.
  - At least one copy of the design shall be maintained at the jobsite during construction of the protective system. After that time, the design may be stored off the jobsite.

Materials and Equipment

Materials and equipment used for protective systems shall be free from damage or defects that might impair their proper function.

Manufactured materials and equipment used for protective systems shall be used and maintained in a manner that is consistent with the recommendations of the manufacturer, and in a manner that will prevent employee exposure to hazards.

When material or equipment that is used for protective systems is damaged, a competent person shall examine the material or equipment and evaluate its suitability for continued use. If the competent person cannot assure the material or equipment is able to support the intended loads or is otherwise suitable for safe use, then such material or equipment shall be removed from service and shall be evaluated and approved by a registered professional engineer before being returned to service.

Installation and Removal of Support

- Members of support systems shall be securely connected together to prevent sliding, falling, kickouts, or other predictable failure.
- Support systems shall be installed and removed in a manner that protects employees from cave-ins, structural collapses, or from being struck by members of the support system.
- Individual members of support systems shall not be subjected to loads exceeding those which those members were designed to withstand.
- Before temporary removal of individual members begins, additional precautions shall be taken to ensure the safety of employees, such as installing other structural members to carry the loads imposed on the support system.
- Removal shall begin at, and progress from, the bottom of the excavation. Members shall be released slowly so as to note any indication of possible failure of the remaining members of the structure or possible cave-in of the sides of the excavation.
- Backfilling shall progress together with the removal of support systems from excavations.

Additional Requirements for Support Systems for Trench Excavations

Excavation of material to a level no greater than 2 feet (.61 m) below the bottom of the members of a support system shall be permitted, but only if the system is designed to resist the forces calculated for the full depth of the trench, and there are no indications while the trench is open of a possible loss of soil from behind or below the bottom of the support system.

Installation of a support system shall be closely coordinated with the excavation of trenches.

Sloping and benching systems. Employees shall not be permitted to work on the faces of sloped or benched excavations at levels above other employees except when employees at the lower levels are adequately protected from the hazard of falling, rolling, or sliding material or equipment.

Shield Systems

- Shield systems shall not be subjected to loads exceeding those which the system was designed to withstand.
- Shields shall be installed in a manner to restrict lateral or other hazardous movement of the shield in the event of the application of sudden lateral loads.
- Employees shall be protected from the hazard of cave-ins when entering or exiting the areas protected by shields.
- Employees shall not be allowed in shields when shields are being installed, removed, or moved vertically.
- Additional requirement for shield systems used in trench excavations. Excavations of earth material to a level not greater than 2 feet (.61 m) below the bottom of a shield shall be permitted, but only if the shield is designed to resist the forces calculated for the full depth of the trench, and there are no indications while the trench is open of a possible loss of soil from behind or below the bottom of the shield.

Fall Protection Program

The purpose of this program is to provide fall protection procedures to prevent injury to employees while performing work assignments at elevated levels. To the extent these requirements exceed standards issued by the Occupational Safety and Health Administration, they are being adopted to provide an even safer working environment. This program applies to all Company employees who have work assignments at work levels that exceed 6 feet in height where guardrails or nets are not utilized and/or who are exposed to a fall distance of greater than 6 feet. There are no exceptions to this rule without the prior approval of a member of the Safety Team Management and exceptions may only be made in the anticipation of a likely event of exposure to a greater hazard.

Definitions

Anchorage - a secure point of attachment for lifelines, lanyards or deceleration devices that is rated for 5,000 pounds.

Body harness - straps which may be secured about the employee in a manner that will distribute the fall arrest forces over at least the thighs, pelvis, waist, chest and shoulders with means for attaching it to other components of a personal fall arrest system.

Buckle - any device for holding the body belt or body harness closed around the employee's body.

Carabiner – a connector, usually D-shaped or an oblong metal ring with one locking spring-hinged side.

Connector - a device which is used to couple (connect) parts of the personal fall arrest system and positioning device systems together. It may be an independent component of the system, such as a carabineer, or it may be an integral component of part of the system (such as a buckle or D-ring sewn into a body belt or body harness, or a snap-hook spliced or sewn to a lanyard or self-retracting lanyard).

Deceleration device - any mechanism, such as a rope grab, rip-stitch lanyard, specially woven lanyard, tearing or deforming lanyards, automatic self-retracting lifelines/lanyards, etc., which serves to dissipate a substantial amount of energy during a fall arrest, or otherwise limit the energy imposed on an employee during fall arrest.

Deceleration distance - the additional vertical distance a falling employee travels, excluding lifeline elongation and free fall distance, before stopping, from the point at which the deceleration device begins to operate. It is measured as the distance between the location of an employee's body harness attachment point at the moment of activation (at the onset of fall arrest forces) of the deceleration device during a fall, and the location of that attachment point after the employee comes to a full stop.

Equivalent – alternative designs, materials, or methods to protect against a hazard which the employer can demonstrate will provide an equal or greater degree of safety for employees than the methods, materials or designs specified in the standard.

Failure means load refusal, breakage, or separation of component parts. Load refusal is the point where the ultimate strength is exceeded.

Free fall - the act of falling before a personal fall arrest system begins to apply force to arrest the fall.

Free fall distance - the vertical displacement of the fall arrest attachment point on the employee's body harness between onset of the fall and just before the system begins to apply force to arrest the fall. This distance excludes deceleration distance, and lifeline/lanyard elongation, but includes any deceleration device slide distance or self-retracting lifeline/lanyard extension before they operate and fall arrest forces occur.

Guardrail system - a barrier erected to prevent employees from falling to lower levels.

Infeasible - that it is impossible to perform the inspection work using a conventional fall protection system (i.e., guardrail system, safety net system, or personal fall arrest system) or that it is technologically impossible to use any one of these systems to provide fall protection.

Lanyard - a flexible line of rope, wire rope, or strap which generally has a connector at each end for connecting the body belt or body harness to a deceleration device, lifeline, or anchorage.

Leading edge - the edge of a floor, roof, or formwork for a floor or other walking/working surface (such as the deck) which changes location as additional floor, roof, decking, or formwork sections are placed, formed, or constructed. A leading edge is considered to be an "unprotected side and edge" during periods when it is not actively and continuously under construction.

Lifeline - a component consisting of a flexible line for connection to an anchorage at one end to hang vertically (vertical lifeline), or for connection to anchorages at both ends to stretch horizontally (horizontal lifeline), and which serves as a means for connecting other components of a personal fall arrest system to the anchorage.

Lower levels - those areas or surfaces to which an employee can fall. Such areas or surfaces include, but are not limited to, ground levels, floors, platforms, ramps, runways, excavations, pits, tanks, material, water, equipment, structures, or portions thereof.

Personal fall arrest system - a system used to arrest an employee in a fall from a working level. It consists of an anchorage, connectors, a body belt or body harness and may include a lanyard, deceleration device, lifeline, or suitable combinations of these.

Positioning device system - a body belt or body harness system rigged to allow an employee to be supported on an elevated vertical surface, such as a wall, and work with both hands free while leaning.

Rope grab - a deceleration device which travels on a lifeline and automatically, by friction, engages the lifeline and locks so as to arrest the fall of an employee. A rope grab usually employs the principle of inertial locking, cam/level locking, or both.

Safety Nets – safety nets shall be provided when workplaces are higher than 25 feet above ground or water surfaces or other surfaces where the use of ladders, scaffolds, catch platforms, temporary floors, safety lines or safety belts are impractical.

Nets shall extend 8 feet beyond the edge of the work surface where employees are exposed and shall be installed as close under the work surface as practical but in no case more than 25 feet below the work surface. Nets shall be positioned in a manner to prevent the user from coming into contact with below surfaces or structures. Proper clearance positioning of nets shall be determined by impact load testing. Work procedures shall not begin until nets are in place and have been properly tested.

New nets shall meet accepted performance standards of 17,500-foot pounds minimum impact resistance as determined and certified by the manufacturers and shall bear a label of proof test. Edge ropes shall provide a minimum breaking strength of 5000 pounds.

Self-retracting lifeline/lanyard - a deceleration device containing a drum-wound line which can be slowly extracted from, or retracted onto, the drum under slight tension during normal employee movement, and which, after onset of a fall, automatically locks the drum and arrests the fall.

Snap hook - a connector comprised of a hook-shaped member with a normally closed keeper, or similar arrangement, which may be opened to permit the hook to receive an object and, when released, automatically closes to retain the object. Snap hooks are generally one of two types: (1) The locking type with a self-closing, self-locking keeper which remains closed and locked until unlocked and pressed open for connection or disconnection; or (2) The non-locking type with a self-closing keeper which remains closed until pressed open for connection or disconnection. As of January 1, 1998, the use of a non-locking snap hook as part of personal fall arrest systems and positioning device systems is prohibited.

Unprotected sides and edges – any side or edge (except at entrances to points of access) of a walking/working surface, e.g., floor, roof, ramp, or runway where there is no wall or guardrail system at least 39 inches (1.0 m) high.

Walking/working surface - any surface, whether horizontal or vertical on which an employee walks or works, including, but not limited to, floors, roofs, ramps, bridges, runways, formwork and concrete reinforcing steel but not including ladders, vehicles, or trailers, on which employees must be located in order to perform their job duties.

Work area - that portion of a walking/working surface where job duties are being performed.

Components

Full Body Harnesses will be furnished by the Company (Company Provided PFAs). All harnesses must be ANSI Z359 compliant and in good condition. It is the responsibility of the employee's direct supervisor to inspect a personal harness brought to a Company jobsite to assure that the harness is compliant and in good condition. If the supervisor determines that the harness is not satisfactory, he must remove it from the jobsite and provide Company furnished harness to the worker and explain that it must be used as a condition of employment. **It shall be further explained that if the personal full body harness is found in use on the jobsite after it has been removed, it will be grounds for immediate dismissal from employment with the Company.**

Harness and Lanyard Daily Inspection

Harnesses shall be inspected at the start of each use to assure that they have not been damaged. Particular attention shall be paid to the webbing components for workers involved with hot work operations.

1) **Webbing -** Grasp the webbing with your hands 6 inches (152mm) to 8 inches (203mm) apart. Bend the webbing in an inverted "U" as shown. The surface tension resulting makes damaged fibers easier to detect. Follow this procedure the entire length of the webbing, inspecting both sides of each strap. Look for frayed edges, broken fibers, pulled stitches, burns and chemical damage.

2) **D-Rings/Back Pads** - Check D-rings for distortion, cracks, breaks, and rough or sharp edges. The D-ring should pivot freely. D-ring back pads should also be inspected for damage.

3) **Attachment of Buckles -** Inspect for any unusual wear, frayed, or cut fibers, or broken stitching of the buckle or D-ring attachments.

4) **Tongue/Grommets** - The tongue receives heavy wear from repeated buckling and unbuckling. **Inspect for loose, distorted, or broken grommets.** Webbing should not have additional punched holes.

5) **Tongue Buckles** - Buckle tongues should be free of distortion in shape and motion. **They should overlap the buckle frame and move freely back and forth in their socket. Roller should turn freely on frame. Check for distortion or sharp edges.**

6) **Friction and Mating Buckles** - Inspect the buckle for distortion. **The outer bars and center bars must be straight. Pay special attention to corners and attachment points at the center bar.**

7) **Quick-Connect Buckles** - Inspect the buckle for distortion. **The outer bars and center bars must be straight. Make sure dual-tab release mechanism is free of debris and engages properly.**

Lanyards:

Each worker shall have a double self-retracting lifelines (SRL) attached to the D ring in the back of his/her full body harness. This lanyard System shall be certified to meet the requirements of ANSI Z 359 and shall be inspected prior to each use. No employee-owned fall protection equipment is allowed to be used at Company job sites. As with rejected harnesses if the lanyard system is later brought to the jobsite and used, it will be grounds for immediate dismissal.

Lanyards shall be inspected prior to each use and after any event that could have damaged the lanyard.

When inspecting lanyards, begin at one end and work to the opposite end, slowly rotating the lanyard so that the entire circumference is checked. Additionally, follow the procedures below.

1) **Hardware** - A) Snaps: Inspect closely for hook and eye distortions, cracks, corrosion, or pitted surfaces. The keeper (latch) should seat into the nose without binding and should not be distorted or obstructed. The keeper spring should exert sufficient force to firmly close the keeper. Keeper locks must prevent the keeper from opening when the keeper closes.

B) **Thimbles** - The thimble must be firmly seated in the eye of the splice, and the splice should have no loose or cut strands. The edges of the thimble must be free of sharp edges, distortion, or cracks.

2) **Web Lanyard** - While bending webbing over a pipe or mandrel, observe each side of the webbed lanyard. This will reveal any cracks or breaks. Swelling, discoloration, cracks and charring are obvious signs of chemical or heat damage. Observe closely for any breaks in stitching.

3) **Shock Absorber Pack** - The outer portion of the pack should be examined for burn holes and tears. Stitching on areas where the pack is sewn to D-rings, belts or lanyards should be examined for loose strands, rips and deterioration.

Retractable Lifelines:

The Company will furnish retractable lifelines as part of a fall protection system. It is essential that lifeline hooks will be attached directly to the D ring on the full body harness. Never attach a retractable lifeline to a shock absorbing lanyard. In the event an employee is not furnished with a SRL, the employee must discontinue work and contact a member of the Safety Team.

Retractable lifelines should be used for vertical fall arrest. Retractable Lifelines should not be used laying on a horizontal surface like a decked floor or concrete floor. The retractable requires a free fall to initiate the locking mechanism which can be affected when the cable is pulled across a horizontal surface.

Retractable lifelines must be inspected by the manufacture annually and by the individual using them prior to each use.

Self-Retracting Lifeline Inspection

1) **Check Housing** - Before every use, inspect the unit's housing for loose fasteners and bent, cracked, distorted, worn, malfunctioning or damaged parts.

2) **Lifeline** - Test the lifeline retraction and tension by pulling out several feet of the lifeline and allow it to retract back into the unit. Always maintain a light tension on the lifeline as it retracts.

The lifeline should pull out freely and retract all the way back into the unit. Do not use the unit if the lifeline does not retract. The lifeline must be checked regularly for signs of damage. Inspect for Company, burns, corrosion, kinks, frays or worn areas. Inspect any sewing (web lifelines) for loose, broken, or damaged stitching.

3) **Braking Mechanism** - The braking mechanism must be tested by grasping the lifeline above the impact indicator and applying a sharp steady pull downward which will engage the brakes. There should be no slippage of the lifeline while the brakes are engaged, once tension is released, the brakes will disengage, and the unit will return to the retractable mode. Do not use the unit if the brakes do not engage.

Check the hardware as directed in 1A under Lanyard Inspection. The snap hook load indicator is located in the swivel of the snap hook. The swivel eye will elongate and expose a red area when subjected to fall arresting forces. Do not use the unit if the load impact indicator has been activated.

Anchorages:

Every fall arrest system relies on an anchorage or anchorages to resist the forces caused by a fall. These anchorages must be evaluated by a Qualified Person to assure that the system will provide the protection needed. In our work, the building structure provides the supporting material for the arrest when coupled with a variety of attachment systems. The qualified person will evaluate the structure and determine how to attach to the structure. For individual tie off, the crew supervisor will train the crew on anchorages that have been determined to be adequate for tie off and the attachment systems that may be used. The following are examples of anchorage systems that may be used. Others may be selected to address special applications and situations that occur in the course of our work. It is essential that every worker understands how to tie off properly before accessing work locations at

elevation. The components and arrangement of these systems have been physically tested to verify their capacity and ability to withstand fall arrest.

Horizontal Life Lines:

The Company often utilizes 3/8" diameter galvanized aircraft cable for horizontal lifeline systems. These lifelines must be attached to building structure that is capable of resisting the forces resulting from an arrested fall. The usual attachment method is to loop the cable around a structural member and secure the loop with three galvanized wire rope clips tightened with the full force of a man. Alternatively the life line may be installed on the top flange of individual members through shop provided holes in the flanges or through field prepared holes. The life lines shall be installed at the highest practical height to reduce fall distance. These lifelines will be installed under the direction of a competent person and inspected at the start of each use to assure that they are properly installed. (other trades may remove lifelines for job access or damage them). The inspection shall include an inspection of the life line terminations to assure the cable clamps are properly installed and tightened. The wire rope shall be visually inspected for damaged wires, kinks, burns, or abrasions. Damaged lifelines shall be removed, replaced and destroyed.

Tie Off Chokers:

The Company will provide wire rope chokers to allow a movable anchorage on beams and columns. These chokers are fabricated from 5/16 wire rope so they can be differentiated from 3/8" rigging chokers used commonly on our jobs. Crews are trained that these fall protection chokers shall not be used for material hoisting or any other rigging function.

Chokers are to be rigged in basket fashion around horizontal members and attached to the lanyard hook. On small members, the choker may be double wrapped to minimize free fall exposure. The Company will furnish chokers of assorted lengths for unusual sized members. Workers may then move laterally along beams while sliding the choker along the beam. When intersecting beams or columns are encountered, a second choker must be rigged on the other side of the intersecting beam and column before releasing the first choker. Practice One – Two – One tie off in all instances, or 100% tie-off.

Tie off Chokers must be inspected before use each use. The cable shall be visually inspected for excessive wear and any damaged or broken wires in the strands. Tie off chokers shall be replaced when more than two wires are found to be broken in any lay. Damaged chokers shall be destroyed.

Beamers (Sliding Beam Clamps):

The Company furnishes Beamer sliding tie off anchorages. These devices clamp onto a beam flange and provide a rated anchorage. The use of beamers must be explained by the crew foreman/supervisor focusing on proper adjustment and limitations of the devices.

Beamers must be inspected before each use. Check for cracks in attachment welds and damage to rings and adjustment links. Beamers shall be removed from service if any cracking or excessive wear is found. If the damage is to any welded assembly, the unit shall be destroyed.

The Company will replace any harness that exhibits excessive wear on any of the primary components of the harness. Note that each harness must have its original manufacturer's label intact and legible.

Drawing of Components

Figure A

Figure B

1. Tie-off Point
2. Lifeline
3. Rope Grab
4. Shock Absorbing Lanyard
5. Cross-Arm Strap
6. Retractable Lifeline
7. Full-Body Harness
8. Restraining Belt
9. Restraining Lanyard
10. Carabineer

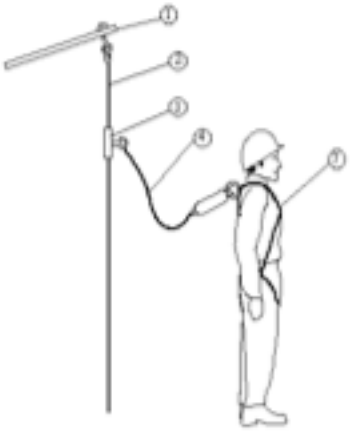

Figure C

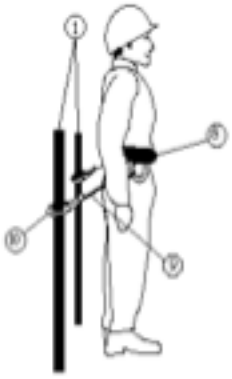

Figure D

Responsibilities

Superintendent/Foreman

It is the responsibility of the local Superintendent/Foreman (designated competent person) to implement this Fall Protection Program. Continual observational safety checks of work operations and the enforcement of the safety policy and procedures shall be regularly enforced. All jobs shall be pre-planned prior to the start of work.

Foreman/Supervisor

- The supervisor shall ensure that all persons assigned to work at elevated levels, exceeding 6 feet in height or more above lower level and where guardrails or nets are not utilized, be protected by personal fall protection equipment.
- The supervisor shall make exposure determinations and shall discuss with their employees the extent to which scaffolds, ladders or vehicle mounted work platforms can be used.
- Ensure that fall protection equipment is available and in safe working condition.
- Provide for emergency rescue in the event of a fall. Pre-plan the job to ensure that employees have been properly trained in the use, limitations, inspections and rescue procedures and that training records are on file.

Employees

Employees shall ensure they have and use the fall protection equipment as required by this program and:

- Participate in the required Fall Protection Training to include:
  - The nature of fall hazards in the work area;
  - The correct procedures for erecting, maintaining, disassembling, and inspecting the fall protection systems to be used;
  - The use and operation of guardrail systems, personal fall arrest systems, safety net systems, warning line systems, safety monitoring systems, controlled access zones, and other protection to be used;
  - The role of each employee in the safety monitoring system when this system is used;
  - The correct procedures for the handling and storage of equipment and materials and the erection of overhead protection;
  - The role of employees in fall protection plans;
  - Understand the potential hazards of working at elevated levels as well as gaining access to and from the work location;
  - Understand the use and limitations of such equipment;
  - Pre-plan the job with the to agree that the job can be done safely; and
  - Inspect such equipment before each use and to report defective equipment immediately to their supervisor.

Procedure

Fall protection is required whenever employees are potentially exposed to falls from heights of six feet or greater to lower levels. This includes work near and around excavations. Use of guard rails, safety net, or personal fall arrest systems should be used when the standard methods of protection are not feasible or a greater hazard would be created.

When purchasing equipment and raw materials for use in fall protection systems applicable ANSI Z359.1, ASTM or OSHA approved equipment shall be used.

Minimum Standards

The following are minimum standards for Company employee personal fall protection systems:

- Connectors shall be drop forged, pressed or formed steel, or made of equivalent materials.
- Connectors shall have a corrosion-resistant finish, and all surfaces and edges shall be smooth to prevent damage to interfacing parts of the system.
- D-rings and snap hooks shall have a minimum tensile strength of 5,000 pounds.
- D-rings and snap hooks shall be proof-tested to a minimum tensile load of 3,600 pounds without cracking, breaking, or taking permanent deformation, by the manufacturer.
- Snap hooks shall be sized to be compatible with the member to which they are connected to prevent unintentional disengagement of the snap hook. Only a locking type snap hook designed and used to prevent disengagement of the snap hook by the contact of the snap hook keeper by the connected member shall be used.
- Horizontal lifelines shall be designed, installed, and used, under the supervision of a qualified person, as part of a complete personal fall arrest system, which maintains a safety factor of at least two.
- Lanyards and vertical lifelines shall have a minimum breaking strength of 5,000 pounds. Where vertical lifelines are used, each employee shall be attached to a separate lifeline.
- Lifelines shall be protected against being cut or abraded.
- Self-retracting lifelines and lanyards which automatically limit free fall distance to 2 feet or less shall be capable of sustaining a minimum tensile load of 3,000 pounds applied to the device with the lifeline or lanyard in the fully extended position.
- Self-retracting lifelines and lanyards which do not limit free fall distance to 2 feet or less, rip stitch lanyards, and tearing and deforming lanyards shall be capable of sustaining a minimum tensile load of 5,000 pounds applied to the device with the lifeline or lanyard in the fully extended position.
- Anchorages used for attachment of personal fall arrest equipment shall be independent of any anchorage being used to support or suspend platforms and capable of supporting at least 5,000 pounds per employee attached, or shall be designed, installed, and used as part of a complete personal fall arrest system which maintains a safety factor of at least two and under the supervision of a qualified person.
- Systems used by an employee having a combined person and tool weight in excess of 310 pounds shall be modified to provide proper protection for such heavier loads.
- The attachment point of the body harness shall be located in the center of the wearer's back near shoulder level, or above the wearer's head, except when climbing.
- Body harnesses and components shall be used only for employee protection and not to hoist materials.
- Personal fall arrest systems and components subjected to impact loading during a fall-arrest deployment shall be immediately removed from service and shall not be used again for employee protection.
- Provide for prompt rescue of employees in the event of a fall.
- Personal fall arrest systems shall be inspected prior to each use for wear, damage and other deterioration, and defective components shall be removed from service.

- Personal fall arrest systems shall not be attached to guardrail systems, nor shall they be attached to hoists unless prior approval is obtained from a competent person.
- If and when a personal fall arrest system is used at hoist areas, it shall be rigged to allow the movement of the employee only as far as the edge of the walking/working surface.

Stopping a Fall

The arresting force on an employee stopped by a fall shall be limited to a maximum arresting force of 1,800 pounds when wearing a body harness.

The fall arrest system shall be rigged such that an employee can neither free fall more than 4 feet, nor contact any lower level.

The fall arrest system shall bring an employee to a complete stop and limit maximum deceleration distance an employee travels to 3.5 feet.

The fall arrest system shall have sufficient strength to withstand twice the potential impact energy of an employee free falling a distance of 4 feet, or the free fall distance permitted by the system, whichever is less.

Protection from Falling Objects

- When employees are required to work in the near vicinity of others working with materials, tools, or equipment at elevated levels, Barricades around the immediate area of the overhead work shall be erected to prohibit employees from entering the barricaded area.
- Employees performing work at elevated levels shall keep tools, materials, and equipment away from the edge to keep potential objects from falling over the side. Where practical, tools, etc. shall be secured with rope, wire, etc. to keep them from falling.

Portable Ladders

- Three point climbing is required while ascending/descending ladders. While on ladders, both hands and one foot, or both feet and one hand shall always be in contact with the ladder.
- Tools required to perform a task shall be transported by a mechanical carrier such as a tag line, suspended bucket or tool belt.
  - Tools shall not be carried by hand while climbing.
  - Hands must be free to grip the ladder.
  - Tools shall not be carried in clothing pockets.
  - Tools shall be pulled up to the job site only after reaching the area of work.

When work is to be performed from straight/extension ladders, fall protection shall be utilized when heights exceed 6 feet.

Straight ladders shall be secured at the top to prevent them from moving. A second person shall steady the ladder at the base while it is being tied off at the top by another employee. Do not tie off fall protection equipment to the ladder.

Storage

- Fall protection must be stored properly consistent with manufacturer's specifications in a cool, dry location,

- Fall protection equipment shall be inspected before each use for wear, damage, other deterioration, or other defects.

Elevated Personnel Platforms

- Work performed, regardless of the nature of the work, from personnel platforms raised by forklifts, cranes, scissor lifts, etc., shall require the use of a full body harness and shall be connected to the manufacturer's anchorage point.

Rescue

- Prompt rescue of employees shall be provided in the event of a fall. The pre-planning stage prior to the beginning of each elevated work assignment shall be evaluated by the supervisor to provide rescue of employees involved in a fall.

Fall Protection Plan

This option is available only to employees engaged in leading edge work who can demonstrate that it is infeasible, or it creates a greater hazard to use conventional fall protection equipment. The fall protection plan shall conform to the following provisions:

- The fall protection plan shall be prepared by a qualified supervisor and developed specifically for the site where the leading-edge work is being performed.
- The fall protection plan shall document the reasons why the use of conventional fall protection systems (guardrail systems, personal fall arrest systems, or safety net systems) are infeasible or why their use would create a greater hazard.
- The fall protection plan shall identify each location where conventional fall Protection methods cannot be used.
- These locations shall then be classified as controlled access zones.

Controlled Access Zones

When used to control access to areas where leading edge or other operations are taking place the controlled access zone shall be defined by a control line or by any other means that restricts access.

When control lines are used, they shall be erected not less than 6 feet (1.8 m) nor more than 25 feet (7.7 m) from the unprotected or leading edge.

The control line shall extend along the entire length of the unprotected or leading edge and shall be approximately parallel to the unprotected or leading edge.

The control line shall be connected on each side to a guardrail system or wall.

- Control lines shall consist of ropes, wires, tapes, or equivalent materials.
- Each line shall be flagged or otherwise clearly marked at not more than 6-foot (1.8 m) intervals with high-visibility material.
- Each line shall be rigged and supported in such a way that its lowest point (including sag) is not less than 39 inches (1 m) from the walking/working surface and its highest point is not more than 45 inches (1.3 m).
- Each line shall have a minimum breaking strength of 200 pounds.

Only employees engaged in the related work shall be permitted in the controlled access zone.

Safety Monitoring System.

When the use of conventional fall protection equipment is deemed infeasible, or the use of this equipment creates a greater hazard a Fall Protection Plan which includes a safety monitoring system shall be implemented by the supervisor.

Spiders & Sky Climbers

Personnel riding in or working from these hoisting devices shall each be provided an independent lifeline and rope grab or approved retracting reel lifeline to their lanyard shall be always secured when aloft.

Crane Hoisted Personnel Baskets

Use of these devices shall comply with the safety procedures set forth in CFR 1926.

Standards for Construction: personnel riding in or working from personnel baskets must have their lanyard always secured to the manufacturer's anchorage point when aloft.

Supervisor shall designate a competent person to monitor the safety of other employees. The competent person shall be assigned to:

- Recognize fall hazards;
- Warn employees if they are unaware of fall hazard or are acting in an unsafe manner;
- Be on the same working surface and in visual contact of working employees;
- Stay close enough for verbal communication; and
- Not have other assignments that would take his/her attention from the monitoring function.

Incident Investigations

All incidents and near misses must be investigated according to the Company's incident investigation procedure. Changes to the fall protection program shall be implemented if deemed appropriate from incident corrective actions.

Training

Employees who may be exposed to fall hazards shall be trained to recognize the hazards of falling and understand the procedures to be followed to minimize these hazards.

The employee will be trained in the use and operation of fall arrest systems, inspections, and maintenance procedures.

Training must be conducted initially, and refresher training conducted annually or as needed due to deficiencies in training, changes in the workplace, changes in fall protection systems or procedures that render previous training obsolete or inadequacies in an employee's understanding of previous training.

Training must be documented in writing. Training records shall include:

- Who was trained
- When and dates of training
- Signature of person providing training
- Date training was deemed adequate

Training records shall be retained in the corporate office and/or the UKG Data Entry Platform.

Securing loose items aloft

All materials, equipment, and tools, which are not in use while aloft, shall be secured against accidental displacement. The Company uses tool and bolt bags for this protection along with other controls such as tool lanyards.

Protection from falling objects other than materials being hoisted

The controlling contractor shall bar other construction processes below erection unless overhead protection for the employees below is provided. Customer will be required to coordinate with these other trades to provide the protection.

Fire Protection Program

The purpose of this program is to ensure that all Company employees follow procedures for fire protection, proper selection and use of fire extinguishers. This program applies to all employees.

It is the responsibility of each and every person employed by the Company to work in a safe and efficient manner. The safety system provides guidelines and procedures to help ensure that safe work practices are observed. All employees must follow procedures with respect to the prevention of fires, the proper selection and location of fire extinguishers and proper use of fire extinguishers.

Procedure

Each crew that utilizes welding equipment or torch cutting equipment shall be furnished with fire extinguishers of suitable type and quantity to control anticipated fires. Workers shall be trained on the use of special equipment and requirements of electrical, acetylene and fuel fires.

All torches shall be fitted with regulator flash arrestors and check valves. Workers will be trained to inspect hoses and torch components for leaks and proper torch lighting and regulator adjustment. No worker shall open an acetylene valve more than ½ turn and any bottles with the square control stem shall be left with the bottle wrench installed to allow for quick shut off of acetylene in the event of a hose or torch head fire. In the event of an acetylene bottle fire the bottle shall be allowed to burn until the contents are expended. No worker shall extinguish a burning bottle of acetylene as the escaping gas will pose a serious explosion hazard.

All fire extinguishers will have a visual monthly inspection performed. Inspection tags must be filled out. If an extinguisher has been used or leaked out it must be tagged and removed from the job.

All extinguishers will have an annual inspection performed.

Training

1. Formal training will be conduct annually.
2. Job specific training will be conducted prior to mobilization and during new hire orientation.
3. Training will include:
    a. Types of fire extinguishers
    b. P.A.S.S. system
    c. Maintenance of extinguishers
    d. Hazard identification for fire fighting
    e. PPE

First Aid Program

The purpose of this program is to establish the minimum first aid supplies, equipment, and actions to properly respond to incidents and injuries. This program is applicable to all Company employees while engaged in work at Company job sites.

Responsibilities

- It is the responsibility of the supervisor to ensure that first aid kits are provided and maintained.
- All employees are responsible for using first aid materials in a safe and responsible manner.
- The Safety Department is responsible for corresponding with a training company to ensure employee training is current.

Requirements

Planning

The Superintendent/Supervisor will:

- Ensure that a minimum of one employee, with a valid certificate, shall be present to render first aid whenever work is being performed if medical assistance is not available within 3-4 minutes.
- Ensure that provisions shall have been made prior to commencement of a project for prompt medical attention, including transportation, in case of serious injury.
- Ensure adequate first aid supplies and equipment are easily accessible when required.
- Ensure that in areas where 911 is not available, the telephone numbers of the physicians, hospitals, or ambulances to be used shall be conspicuously posted.

Medical Response

All minor first aid is to be performed by a trained competent person.

In the absence of medical assistance within 3-4 minutes of a Company worksite there shall be a person who has a valid certificate in first aid training from the American Red Cross or equivalent and able to render emergency first aid. Employees authorized to render first aid will always observe universal precautions. (Universal Precautions means that the aid giver treats all bodily fluids as if they were contaminated).

If 911 is not available refer to the list of posted phone numbers for prearranged medical response providers. All Company authorized first responders shall have a cell phone as a means of communications; otherwise, handheld radios or telephones shall be used as a means of communication.

Supplies and Equipment

First aid supplies shall be provided in easily accessed and posted locations. Always follow the manufacturer's instructions when using the materials in the first aid kit.

All Company first aid kits contain appropriate items determined to be adequate for the environment in which they are used and are stored in a weatherproof container with individual contents sealed from the manufacturer for each type of item.

The Company is responsible to ensure the availability of adequate first aid supplies and to periodically reassess the demand for supplies and to adjust its inventories. First Aid kits are to be regularly inspected/implemented:

- On the first working day of each week to verify that they are fully stocked and that no expiration dates have been exceeded, and
- Before being sent out to each job, and
- Replace any items that have exceeded their expiration dates or that have been depleted.

Where the eyes or body of any person may be exposed to injurious corrosive materials, a safety shower and/or eye wash (suitable facilities) or other suitable facilities shall be provided within the work area. Ensure expiration dates are checked and water used in storage devices is sanitized.

An assessment of the material or materials used shall be performed to determine the type flushing/drenching equipment required. At client job sites, portable or temporary stations must be established prior to the use of corrosive materials.

Transportation

Based on the first responder's assessment of the injuries involved, decide whether the injured requires to be taken directly to a hospital's emergency room, occupational medicine provider or administer first aid on location.

Examples of serious injuries that result in the injured being transported to a medical provider are those resulting in severe blood loss, possible permanent disfigurement, head trauma, spinal injuries, internal injuries and loss of consciousness. Keep in mind that the needs and wellbeing of the injured are the first priority.

Proper equipment for prompt transportation of the injured person to a physician or hospital or a communication system for contacting necessary ambulance service shall be provided.

Choices to consider include: private automobile, a Company vehicle, helicopter, crew boat, EMS vehicles including medical evacuation helicopters, or any other transportation that can provide safe transportation to the hospital or doctor's office in order to provide medical attention to the injured in the quickest manner without any additional complications or injuries to the injured employee.

Transportation needs must be preplanned and coordinated with the transportation provider prior to an incident requiring such service.

Training

Managers or selected employees are trained by the American Red Cross or equivalent training provider in CPR and first aid. Each of these trained and certified employees are equipped with protective gloves and other required paraphernalia. CPR training must be re-certified annually and first aid training must be re-certified upon expiration.

Hand and Power Tools Program

The purpose of this program is to ensure that all Company employees follow procedures for proper selection, inspection, use and protection while working with hand and power tools. This program applies to all employees and covers the various types of hand and power tools that are utilized on this project. All tools will be maintained in accordance with this program. It is the responsibility of each and every person employed by the Company work in a safe and efficient manner. The safety system provides guidelines and procedures to help ensure that safe work practices are observed.

Procedure

Hand Tools:

- All hand tools will be inspected daily prior to use.
- Any tool that is found to have defects will be removed from service.
- All hand tools will be stored in a clean dry area when not in use.
- Must use the right tool for the job.

Power Tools:

- Only employees trained in the proper use of a power tool shall operate the tool.
- All portable power tools will be inspected prior to use to ensure guards, blades, and safety devices are in place and operational.
- Cords will not be used to hoist or lower the tools. This will in turn damage the tool.
- Guards and handles must be in place on all power tools.
- Guards cannot be modified to fit another tool.
- Must use only the appropriate blades, cutting wheels and grinding stones that are rated for the tool.
- All tools will be inspected daily before use and monthly. Any tool found to be damaged will be tagged and removed from service.

General Requirements:

- Proper PPE will be used at all times the tool that is being used i.e. face shield, gloves, hearing protection and safety glasses.
- Manufacture recommendations will be followed at all times for the tool that is being used.
- All tools will be kept in a dry and clean storage area.
- Only trained employees are allowed to use a powder actuated tool.

Hazard Communication Program

The purpose of this program is to ensure that the hazards of all chemicals and substances are evaluated and the information concerning their hazards is communicated to employees, including emergency response organizations, state and federal agencies, other employers, and contractors, as necessary. This hazard information will be communicated and displayed in accordance with this Hazard Communication Program.

The Company is firmly committed to providing each of its employees a safe and healthy work environment. It is recognized that workers may use chemicals or substances that have potentially hazardous properties. When using these substances, workers must be aware of the identity, toxicity or hazardous properties of a chemical or substance, since an informed employee is more likely to be a safe employee. To this end, the Company has established a written Hazard Communication Program.

Scope

This program is applicable to all Company employees who may be exposed to hazardous chemicals. When work is performed on a non-owned or operated site, the operator's program shall take precedence, however, this document covers Company employees and contractors and shall be used on owned premises, or when an operator's program doesn't exist or is less stringent.

Definitions

Chemical – any element, chemical compound, or mixture of elements and/or compounds.

Chemical Inventory List – a list of chemicals used at this jobsite, or by personnel that report to this jobsite.

Electronic Access – using electronic media (telephone, fax, internet, etc.) to obtain Safety Data Sheets or health information.

Facility – an establishment at one geographical location containing one or more work areas.

Hazardous Chemical – any chemical that is a physical hazard, a health hazard, or has a Permissible Exposure Limit established for it.

Hazardous Substance – see hazardous chemical.

Hazard Communication Program Coordinator – the person who has overall responsibility at a facility or job site for that organization's Hazard Communication Program.

Health Hazard – a substance for which there is statistically significant evidence based on at least one study conducted in accordance with established scientific principles that acute or chronic adverse health effects may occur in exposed employees.

IDLH – immediately dangerous to life and health.

Immediate Use – the chemical will be under the control of and used only by the person who transfers it from a labeled container and only within the workday in which it is transferred.

Jobsite – an area remote from a Company job site where hazardous chemicals are stored or used and employees are present for the purpose of Company business.

Safety Data Sheet (SDS) – a written or printed document containing chemical hazard and safe handling information, prepared in accordance with the OSHA Occupational Safety & Health Standards, Section 1910.1200, paragraph (g).

National Fire Protection Association (NFPA) Labeling – a common industry labeling method developed by the National Fire Protection Association to identify the hazards associated with a particular chemical.

Permissible Exposure Limit (PEL) – the maximum eight-hour time weighted average of any airborne contaminant to which an employee may be exposed.

Readily Available – when an employee has access during his/her normal workday.

Substance – see Chemical.

Threshold Limit Value (TLV) – the airborne concentration of a substance that represents conditions under which it is believed that nearly all normal workers may be repeatedly exposed day after day without adverse effect.

Work Area – a room or defined space in a jobsite where hazardous chemicals are stored or used and where one or more employees are present.

Workplace – Jobsite.

Workplace Chemical List – List of chemicals present in storage or use at the jobsite.

Responsibilities

A written hazard communication program shall be developed, implemented and maintained at each Company workplace. The program shall describe how labels, other forms of warning and Safety Data Sheets shall be communicated to employees.

The Safety Director is responsible for developing and implementing the Hazard Communications Program. Managers are responsible for maintaining Safety Data Sheets and the Chemical Inventory List for their locations. The Safety Director reviews the SDS files and Chemical Inventory List at each location at least annually to ensure that they are complete and up to date.

Employees are responsible for following the requirements in the Hazard Communication Program, to use proper personal protective equipment, to report containers without labels immediately and to not deface any label.

Any employee who transfers any material from one container to another is responsible for labeling the new container with all required information.

All employees are responsible for learning the requirements of this section and for applying them to their daily work routine.

Introduction

This Hazard Communication Program was prepared for use by Company to explain how Company meets the requirements of the federal Occupational Safety and Health Administration's Hazard Communication Standard (29 CFR 1910.1200). It spells out how Company will inventory chemicals stored and used, obtain and use Safety Data Sheets, maintain labels on chemical substances, and train employees about the hazards of chemicals they are likely to encounter on the job.

Preparation of this program indicates our continuing commitment to safety among our employees in all our locations.

- Each jobsite is expected to follow this program and maintain its work areas in accordance with these requirements.
- Employees, their designated representatives, and government officials must be provided copies of this program upon request.
- In addition to the program, other information required as part of our hazard communication effort is available to workers upon request.
- Asking to see this information is an employee's right.
- Using this information is part of our shared commitment to a safe, healthy workplace.

List of Hazardous Chemicals

The Company maintains a listing of all known hazardous chemicals known to be present used at, or by this jobsite by using the identity that is referenced on the safety data sheet (SDS). This identity is often a common name, such as the product or trade name.

The Chemical Inventory List is updated as necessary and at least annually by the Safety Director, Competent Person, or their designee..

The jobsite Chemical Inventory List must be available for review upon request.

Safety Data Sheets (SDS)

Chemical manufacturers are responsible for developing SDSs. The Company will have a SDS for each chemical used with the exception of consumer products.

Safety Data Sheets, for chemicals used in this facility or by personnel reporting to this jobsite, shall be maintained, readily accessible in each work area and be made available, upon request, to employees, their designated representatives and regulatory officials in accordance with the requirements of 29 CFR 1926.59.

Safety Data Sheets (SDSs) are maintained and archived using an online SDS Program. An employee may access this online program request an SDS or may ask the Manager to access the SDS Online Program. In either case the requested SDS must be given to the employee within 24 hours.

SDSs must be obtained for each required chemical from the chemical manufacturer, supplier or vendor. The purchasing of any potentially hazardous chemical products from any supplier that does not provide an appropriate Safety Data Sheet in a timely fashion is prohibited.

The Safety Data Sheet must be kept in the SDS library for as long as the chemical is used by the facility.

Electronic access (telephone, fax, internet, etc.) may be used to acquire and maintain SDS libraries and archives.

The Manager is responsible for seeing that the Chemical Inventory List inventory is maintained, is current and is complete. The Manager will review the inventory and the online SDSs at least annually. When a hazardous material has been permanently removed from the workplace, its SDS is to be archived from the SDS Online Program and the Chemical Inventory List. A file copy is to be maintained in a "dead file".

SDSs for hazardous materials to which the Company employees have been exposed must be maintained after the employee leaves the employment of Company. Before any non-routine task is performed, employees will be advised of special precautions and the hazards associated with chemicals contained in unlabeled pipes in their work areas, if present. In the unlikely event that such tasks are required, the Manager will provide SDS for involved chemical. Employees have the right to request SDS on any chemical and it must be provided without any issues.

Labels, Labeling and Warnings:

The Competent Person will ensure that all hazardous chemicals used or stored at the jobsite are properly labeled.

- Damaged labels or labels with incomplete information shall be reported immediately.
- Damaged labels on incoming containers of chemicals shall not be removed.
- New labels shall be provided as needed so that all containers are properly labeled.
- Only containers into which an employee transfers a chemical for their own immediate use will not require labeling.
- Employees who are unsure of the contents of any container, vessel or piping must contact their supervisor for information regarding the substance including:
  - The name of the substance
  - The hazards related to the substance
  - The safety precautions required for working with the substance.
- Labels, tags or markings on containers shall list as a minimum:
  - Words, pictures, symbols or combinations thereof may be used.
  - The trade name of the product as listed on the Safety Data Sheet.
  - Appropriate hazard warnings to help employees protect themselves from the hazards of the substance.
  - Labels provided by chemical manufacturers, distributors, and importers must also list the name and address of the manufacturer, importer, or vendor responsible for the chemical, and from whom more information about the chemical can be obtained.
  - Labels shall be legible, in English. However, for non-English speaking employees, information shall be presented in their language as well.
  - The Company or employees shall not remove or deface labels on incoming containers of hazardous chemicals.

  All containers must be labeled. When an employee transfers the contents of one container to another, the employee must label the new container with all required information. This

information can be obtained from the labeling of the original container or from the material's SDS. Any container of a potentially hazardous material that will not be emptied during one shift must be labeled, without exception.

Personnel performing shipping and receiving tasks are responsible for proper labeling of all containers shipped by the Company and for the inspection of all incoming materials to ensure correct labeling. Chemicals received from vendors that are not properly labeled must be rejected.

Global Harmonization Standard (GHS) labels shall be the preferred hazard identification method used at Company jobsites. All employees, clients, subcontractors and visitors who may come in contact with a Company hazardous substance must be briefed to ensure understanding of the NFPA 704 labeling system.

The purchasing department must notify the Safety Team when any new material, subject to this Program, is purchased.

Training

The Company will provide employees and new hires at their initial assignment effective information and training on hazardous chemicals at the jobsite.

Additional training will be provided whenever a new chemical hazard is introduced into the jobsite. To reinforce the importance of handling chemicals properly when performing new or non-routine tasks, Supervision will conduct supplementary training as needed.

Formal training will be conducted by employees or individuals who are knowledgeable in the Hazard Communication program.

The Safety Director shall ensure records of employee training are maintained.

When a contractor enters a Company job site to perform a service for the Company, the contractor must first present SDSs for all hazardous chemicals brought to the site. These SDSs will be treated as above with the same training requirements. The Manager will be responsible for contacting each contractor before work is started to gather and disseminate any information concerning chemical hazards the contractor is bringing into the jobsite.

The Hazard Communication Program documented training shall, as a minimum, include:

- Requirements, details and rights of the employee as contained in the Hazard Communication regulation
- Operations and work areas where hazardous chemicals are present.
- Location of the written Hazard Communication Program, SDSs and the Chemical Inventory List.
- How to access SDSs or SDS information.
- How to read and an explanation of labels and Safety Data Sheets for pertinent hazard information and how employees can obtain and use the appropriate hazard information.
- Methods and observations that may be used to detect the presence or release of hazardous chemicals by use of monitoring devices, visual appearance or odor.
- The physical & health hazards of chemicals in the work area.
- Protection measures to be utilized to prevent exposure.
- Appropriate work practices.

- Emergency procedures.
- Proper PPE to be used.

Multi-Employer Job Sites/Multi-Work Site

Multi-Work Sites

Where employees must travel between jobsites during a workday, the written HAZCOM Program shall be kept at a primary job site. If there is no primary job site, then the program shall be sent with employees.

The program shall be made available, upon request, to employees and their designated representatives.

Multi-Employer Job Sites

A pre-job briefing shall be conducted with the contractor prior to the initiation of work on the site.

- During this pre-job briefing, contractors shall notify the Company and present current copies of Safety Data Sheets and label information for every hazardous substance brought on-site.
- The Company will notify and provide SDSs and label information for all hazardous materials the contractor may encounter on the job.
- The jobsite labelling system and any precautionary measures to be taken by contractor during normal conditions and emergencies shall be addressed.
- By providing such information to other employers, the Company does not assume any obligations that other employers have for the safety of their employees.
- In this regard, other employers working on Company property or for Company on client's property remain fully responsible for developing and implementing their own compliant hazard communication programs.

Label Requirements

Hazard Warnings / NFPA 704

The NFPA 704 Diamond is a means of disseminating hazard warning and information for a material. The diamond is divided into four sections. Each of the first three colored sections has a number in it associated with a particular hazard. The higher the number is, the more hazardous a material is for that characteristic. The fourth section includes special hazard information. The four sections and an explanation of the numbers in them are provided below:

NFPA Rating Explanation Guide

RATING NUMBER	HEALTH HAZARD	FLAMMABILITY HAZARD	INSTABILITY HAZARD
4	Can be lethal	Will vaporize and readily burn at normal temperatures	May explode at normal temperatures and pressures
3	Can cause serious or permanent injury	Can be ignited under almost all ambient temperatures	May explode at high temperature or shock
2	Can cause temporary incapacitiation or residual injury	Must be heated or high ambient temperature to burn	Violent chemical change at high temperatures or pressures
1	Can cause significant irritation	Must be preheated before ignition can occur	Normally stable. High temperatures make unstable
0	No hazard	Will not burn	Stable

RATING SYMBOL	SPECIAL HAZARD
ALK	Alkaline
ACID	Acidic
COR	Corrosive
OX	Oxidizing
	Radioactive
W	Reacts violently or explosively with water
W OX	Reacts violently or explosively with water and oxidizing

Global Harmonization Example Label

ToxiFlam (Contains: XYZ)

Danger! Toxic If Swallowed, Flammable Liquid and Vapor

Do not eat, drink or use tobacco when using this product. Wash hands thoroughly after handling. Keep container tightly closed. Keep away from heat/sparks/open flame. – No smoking. Wear protective gloves and eye/face protection. Ground container and receiving equipment. Use explosion-proof electrical equipment. Take precautionary measures against static discharge. Use only non-sparking tools. Store in cool/well-ventilated place.

IF SWALLOWED: Immediately call a POISON CONTROL CENTER or doctor/physician. Rinse mouth.

In case of fire, use water fog, dry chemical, CO_2 , or "alcohol" foam.

See Material Safety Data Sheet for further details regarding safe use of this product

MyCompany, MyStreet, MyTown, NJ 00000, Tel: 444 999 9999

The following are references for use in clarification of the requirements of the standard and labeling.

GHS Pictograms and Hazard Classes		
 • Oxidizers	 • Flammables • Self Reactives • Pyrophorics • Self-Heating • Emits Flammable Gas • Organic Peroxides	 • Explosives • Self Reactives • Organic Peroxides
 • Acute toxicity (severe)	 • Corrosives	 • Gases Under Pressure
 • Carcinogen • Respiratory Sensitizer • Reproductive Toxicity • Target Organ Toxicity • Mutagenicity • Aspiration Toxicity	 • Environmental Toxicity	 • Irritant • Dermal Sensitizer • Acute toxicity (harmful) • Narcotic Effects • Respiratory Tract Irritation

Heat Illness Prevention Program

Purpose

This program is designed to reduce the risk of work-related heat illnesses and applies to all work being performed in hot environments.

Definitions

Acclimatization – temporary adaptation of the body to work in the heat that occurs gradually when a person is exposed to it. Acclimatization peaks in most people within four to fourteen days of regular work for at least two hours per day in the heat.

Heat Illness – a serious medical condition resulting from the body's inability to cope with a particular heat load, and includes heat cramps, heat exhaustion, heat syncope and heat stroke.

Preventative recovery period – a period of time to recover from the heat in order to prevent heat illness.

Shade – blockage of direct sunlight. Canopies, umbrellas and other temporary structures or devices may be used to provide shade. One indicator that blockage is sufficient is when objects do not cast a shadow in the area of blocked sunlight. Shade is not adequate when heat in the area of shade defeats the purpose of shade, which is to allow the body to cool. For example, a car sitting in the sun does not provide acceptable shade to a person inside it, unless the car is running with air conditioning.

Requirements

All managers and supervisors are responsible for implementing and maintaining the Heat Illness Program in their work areas.

Provision of Water

Employees shall have access to potable drinking water. Employees shall have access to potable drinking water. Where it is not plumbed or otherwise continuously supplied, it shall be provided in sufficient quantity at the beginning of the work shift.

Access to Shade

Employees will be provided with access to shade. Employees suffering from heat illness or believing a preventative recovery period is needed shall be provided access to an area with shade that is either open to the air or provided with ventilation or cooling. Such access to shade shall be always permitted. See definition of “Shade”.

Control Measures

Each work location involved in working in hot environments shall implement measures that must be in place to control the effects of environmental factors that can contribute to heat related illnesses. The most common environmental factors are air temperature, humidity, radiant heat sources and air circulation.

Physical factors that can contribute to heat related illness shall be taken into consideration before performing a task. The most common physical factors that can contribute to heat related illness are type of work, level of physical activity and duration, and clothing color, weight and breathability.

The Superintendent/Supervisor must ensure personal factors that contribute to heat related illness are taken into consideration before assigning a task where there is the possibility of a heat-related illness occurring. The most common personal factors that can contribute to heat related illness are age, weight/fitness, drug/alcohol use, prior heat-related illness, etc.

Each work site shall develop site specific procedures but shall include the minimum:

- Bring at least 2 quarts per employee at the start of the shift and the supervisors/designated persons will monitor bottled water supply every 30 minutes, and employees are encouraged to report to supervisor/designated person low levels or dirty water.
- The Forman will provide frequent reminders to employees to drink frequently.
- Every morning there will be short safety meetings to remind workers about the importance of frequent consumption of water throughout the shift during hot weather.
- Place water containers as close as possible to the workers.
- When drinking water levels within a container drop below 50%, the water shall be replenished immediately or water levels should not fall below the point that will allow for adequate water during the time necessary to effect replenishment of bottles.
- Disposable/single use drinking water bottles will be provided to employees or provisions will be made to issue employees their own cups each day.
- Supervisors will set-up an adequate number of umbrellas, canopies or other portable devices at the start of the shift and will relocate them to be closer to the crew, as needed. Supervisors must also have functioning air conditioning in the cabs of their Company trucks for use of employees, if necessary.
- Working hours will be modified to work during the cooler hours of the day, when possible.
- When a modified or shorter work-shift is not possible, more water and rest breaks will be provided.
- Supervisors will continuously check all employees and stay alert to the presence of heat related symptoms.
- Supervisors will carry cell phones or other means of communication, to ensure that emergency services can be called and check that these are functional at the worksite prior to each workday.

Training

Training in the following topics shall be provided to all supervisory and non-supervisory employees:

- The environmental and personal risk factors for heat illness;
- The importance of frequent consumption of small quantities of water, up to 4 cups per hour, when the work environment is hot and employees are likely to be sweating more than usual in the performance of their duties;
- The importance of acclimatization;
- The different types of heat illness and the common signs and symptoms of heat illness;
- The importance to employees of immediately reporting to the employer, directly or through the employee's superintendent/supervisor, symptoms or signs of heat illness in themselves, or in co-workers;

- The Company's procedures for responding to symptoms of possible heat illness, including how emergency medical services will be provided should they become necessary;
- The Company's procedures for contacting emergency medical services, and if necessary, for transporting employees to a point where they can be reached by an emergency medical service provider;
- The Company's procedures for ensuring that, in the event of an emergency, clear and precise directions to the work site can and will be provided as needed to emergency responders.

Each supervisor must receive training in the prevention of heat related illnesses prior to supervising employees working in heat. Supervisors will be trained in the Company's heat illness emergency response procedures to prevent heat illness and procedures to follow when an employee exhibits symptoms consistent with possible heat illness, including emergency response procedures.

Communication for employees shall be in a form readily understandable by all affected employees.

The Company shall ensure all contractors, subcontractors, staffing companies, etc. employees (including temporary) working outdoors have been trained in heat illness prevention.

Housekeeping Program

Good housekeeping is a necessary requirement for maintaining safety at construction sites. Clean and tidy work sites hold fewer hazards for all employees. Accidents and injuries are avoided and productivity improved where good housekeeping is a daily occurrence. This document informs interested persons, including employees, that our company is complying with OSHA's housekeeping requirements, including:

29 CFR 1926.25 – Housekeeping, and

29 CFR 1926.151 – Fire Prevention.

Many other regulations also lead to housekeeping procedures. Common sense and safety concerns encourage standardization of housekeeping measures in the workplace. The Company has developed a set of written housekeeping procedures. In this way we have standardized housekeeping measures and are providing clear expectations and procedures for housekeeping at our company.

Good housekeeping is possibly the most visible evidence of management and employee concern for safety and health that a company displays on a day-to-day basis. Orderliness in our workplace contributes to a safe working environment by minimizing obstacles and potential safety and health threats such as spills, trip hazards, etc. In fact, we have nine good reasons for housekeeping:

- Prevents accidents
- Prevents fire
- Saves time
- Gives control to our workers
- Increases production
- Gives our workers the freedom to move
- Gives our workers pride
- Protects our products and equipment
- Reduces our waste.

Because no program can be successful without employee participation, we train our employees in the procedures. Plus, we have a system to promptly address and resolve any housekeeping-related accidents and hazard reports through our daily safety inspection form completion.

Jobsite Audit – Our supervisors, employees, and Safety Team Members walk around the jobsite for an assessment to identify main housekeeping issues. These persons look for a lack of order, spills or obstructions, or other hazards due to poor organization or poor housekeeping. They ask employees working in each area to identify and recommend corrective actions for their area. They also walk around the grounds to see if there is refuse or an untidy appearance due to storing materials haphazardly.

Housekeeping Procedures – It is the intent of this company to standardize housekeeping measures, meet OSHA requirements, and encourage safety. The procedures listed below cover many locations. Storage and Scrap Areas Our jobsite securely stores material by piling or arranging it in an orderly manner. Our housekeeping procedures for storage areas which keep them free from accumulation of materials that constitute hazards from tripping, fire, explosion, or pest harborage are:

Open project storage housekeeping procedures include:

- Combustible materials must be piled with due regard to the stability of piles and in no case higher than 20 feet.
- Driveways between and around combustible storage piles must be at least 15 feet wide and maintained free from accumulation of rubbish, equipment, or other articles or materials. Driveways must be so spaced that a maximum grid system unit of 50 feet by 150 feet is produced.
- The entire storage site must be kept free from accumulation of unnecessary combustible materials. Weeds and grass must be kept down and a regular procedure provided for the periodic cleanup of the entire area.
- When there is a danger of an underground fire, that land must not be used for combustible or flammable storage.
- Method of piling must be solid wherever possible and in orderly and regular piles. No combustible material may be stored outdoors within 10 feet of a building or structure.

Supervisor and/or site safety manager should utilize daily JSA form to identify any housekeeping issues and the corrective action taken.

Incident Investigation and Reporting Program

The purpose of this program is to have effective procedures for reporting and evaluating/investigating incidents and non-conformances to prevent further occurrences. Individual responsibilities for reporting and investigation must be pre-determined and assigned prior to incidents.

Responsibilities

Company Safety Team Member

Ensures investigations are conducted and assists in identifying corrective actions.

Foreman/Supervisor

Investigates (or assists in) incident investigations, corrects non-conformances, and ensures Company injured employees get to a medical provider for initial treatment.

Employees

Immediately report any injury, job related illness, spill or damage to any property to their supervisor. If their immediate supervisor is not available the employee is then to immediately notify the project manager or a member of the Safety Team. Employees who could be first responders will be trained and qualified in first aid techniques to control the degree of loss during the immediate post-incident phase.

Procedure

After immediate rescue or response, actions to prevent further loss will occur if the scene is safe. For example, a Field Mechanic should be summoned to assess integrity of buildings and equipment, engineering personnel to evaluate the need for bracing of structures, and special equipment/response requirements such as safe rendering of hazardous materials or explosives employed.

Investigations of Incidents & Non-conformances

Investigation is an important part of an effective safety program in that it determines the root cause and corrective actions necessary to prevent similar incidents or non-conformances.

The following must be reported to the employee's supervisor immediately. If that person is not available, then the Company Safety Team Member shall be immediately notified for:

- Near miss incidents with the potential to harm people, the environment or assets
- Work related injuries or illnesses; Property damage including vehicle incidents
- Hazardous chemical spillage, loss of containment and contamination
- Non-conformance to safety or environmental rules, policies or standards

Equipment

Equipment should be made available and may include some or all of the following items: writing equipment such as pens/paper, measurement equipment such as tape measures and rulers, cameras,

small tools, audio recorder, PPE, flags, equipment manuals, etc. The Safety Manager shall have a incident investigation kit prepared in advance.

OSHA Notification

OSHA requires reporting of work-related incidents resulting in the death of an employee within 8 hours. OSHA requires reporting of work-related incidents resulting in the loss of use of an eye, an amputation, or the in-hospitalization of an employee within 24 hours. Owner Clients require all incidents to be reported including, but not limited to, injuries, spills, property damage, fires, explosions, and vehicle damage. Supervisors must ensure that the Safety Team is aware of work-related incidents and the Safety Team must contact senior management in the event of an incident, so that the proper steps to contact OSHA are completed.

Incident Review Team and Incident Investigation Report

All incidents shall be investigated, and the extent of such investigation shall reflect the seriousness of the incident utilizing a root cause analysis process or other similar method determined by the Safety Director. They will form the Safety Team who participates in the determination of the final root cause investigative incident report.

Initial identification of evidence immediately following the incident could include a listing of people, equipment, and materials involved and a recording of environmental factors such as weather, illumination, temperature, noise, ventilation, etc.

Evidence such as people, positions of equipment, parts, and papers must be preserved, secured and collected through notes, photographs, witness statements, flagging, and impoundment of documents and equipment. All shall be dated.

Witness interviews and statements must be collected. Locating witnesses, ensuring unbiased testimony, obtaining appropriate interview locations, and use of trained interviewers should be detailed. The need for follow-up interviews should also be addressed. All items shall be dated.

The final incident investigation report consists of findings with critical factors, evidence, corrective actions, responsible parties, and timelines for corrective action completion.

Incident Report Form

Written incident reports will be prepared and include a detailed narrative statement concerning the events. The format of the narrative report may include an introduction, methodology, summary of the incident, Safety Team member names, narrative of the event, findings, and recommendations. Photographs, witness statements, drawings, etc. should be included. The Incident Report Form is located in HCSS.

The superintendent/foreman completes the Company Incident Report and takes the below steps when beginning an incident investigation:

- Provide emergency assistance, as needed, and qualified to provide.
- Secure the area as quickly as possible to retain area in the same condition at the time of the incident.
- Notify the Corporate Safety Director by phone.
- Identify potential witnesses to the incident.

- Use investigation tools, as needed (camera, drawings, video, etc.).
- Tag out for evidence any equipment that was involved.
- Interview witnesses (including the effected employee) and obtain written, signed statements and scan/email to the Company Corporate Safety Director and Safety Manager.
- Prepare Company Field Incident Report, sign the form, submit it to the Company Safety Manager.
- Implement any immediate corrective actions needed.

Corrective Actions

Incident investigations should result in corrective actions, if necessary, and individuals should be assigned responsibilities relative to the corrective actions, and these actions should be tracked to closure.

Supervisors are held accountable for closing corrective actions.

Corrective actions are also used as needed for revisions to site-specific safety plans and the Company Safety and Health Management System.

Injury Classifications

Injuries shall be classified per the following:

First Aid – Dressing on a minor cut, removal of a splinter, typically treatment for household type injuries.

Days Away, Restricted, or Transferred Case (DART) According to the Occupational Safety and Health Administration (OSHA), a days away case is an injury or illness that results in days away from work or restricted work activity beyond the day of injury or illness:

Days Away

The number of calendar days an employee is unable to work due to the injury or illness. This includes weekends, holidays, and other days off. The day of injury or illness is not counted.

Restricted Work Activity

When an employer prevents an employee from working their full workday due to a work-related injury or illness. A partial day of work is recorded as a day of job transfer or restriction.

Recordable

If an injury or illness results in any of the following: death, days away from work, restricted work or transfer to another job, medical treatment beyond first aid, or loss of consciousness, it is recordable. Any questions regarding recording of injuries or illnesses must be directed to the Safety Team.

Occupational Injury – The Occupational Safety and Health Administration (OSHA) defines a workplace injury as an abnormal condition or disorder that was caused or contributed to by an event or exposure in the work environment. This includes injuries that significantly aggravated a pre-existing condition. An injury which results from a work-related activity.

Occupational Illness – The Occupational Safety and Health Administration (OSHA) defines an occupational illness as an abnormal condition or disorder that results from a non-instantaneous exposure or event in the workplace:

- The exposure at work caused or contributed to the onset of symptoms
- The exposure aggravated existing symptoms to the point that they meet OSHA recordability criteria
- It seems likely that the exposure contributed to or aggravated the condition

Work or Work-Related Activity – an injury or illness must be considered work-related if an event or exposure in the work environment either caused or contributed to the resulting condition or significantly aggravated a pre-existing injury or illness.

Training

Personnel must be trained in their roles and responsibilities for incident response and incident investigation techniques. Training shall occur prior to responsibilities to response or investigation duties are assigned. Incident investigation training frequency is provided upon initial assignment. Refresher Training is provided every two years. Training requirements relative to incident investigation and reporting shall include:

- Awareness
- First Responder Responsibilities
- The Initial Investigation at the Accident Scene
- Managing the Accident Investigation
- Collecting Data
- Analyzing Data
- Developing Conclusions and Judgments of Need
- Reporting the Results

Injury/Illness Recordkeeping Program

The purpose of this program is to define the requirements for recording job related injuries and illnesses for the Company and shall cover all Company operations within the United States. Specific guidelines are available at the following website link: http://www.osha.gov/recordkeeping/index.html.

Key Responsibilities

Safety Director

- Shall ensure all job-related injuries and illness are recorded properly in accordance with OSHA requirements.
- Shall ensure all required posting are conducted in accordance with recordkeeping guidelines
- Shall maintain all required records.
- Shall determine the proper classification of job-related injuries or illnesses based on OSHA recordkeeping guidelines.

Superintendent/Supervisors

- Shall ensure that all job-related injuries and illness are reported promptly to the Company Corporate Safety Director.

Employees

- Shall promptly report any actual or suspected job-related injury or illness.

Procedure

If the Company is required to keep records of fatalities, injuries, and illnesses it must record each fatality, injury and illness that:

- work-related; and
- is a new case; and
- meets one or more of the general recording criteria.

The Company must enter each recordable injury or illness on an OSHA 300 Log and 301 Incident Report, or other equivalent form, within seven (7) calendar days of receiving information that a recordable injury or illness has occurred.

A Company executive must certify that he or she has examined the OSHA 300 Log and that he or she reasonably believes, based on his or her knowledge of the process by which the information was recorded, that the annual summary is correct and complete.

Posting

The Company must post a copy of the annual summary in each establishment in a conspicuous place or places where notices to employees are customarily posted. The Company must ensure that the posted annual summary is not altered, defaced, or covered by other material.

The annual summary must be posted no later than February 1st of the year following the year covered by the records and the posting kept in place until April 30th.

The Company must save the OSHA 300 Log, the privacy case list (if one exists), the annual summary and the OSHA 301 Incident Report forms for five (5) years following the end of the calendar year that these records cover.

Current OSHA recordkeeping forms are located within the Company Drive.

Ladder Safety Program

The purpose of the program is to prescribe rules and establish minimum requirements for the construction, care, and use of the common types of ladders. All ladders that are purchased and placed into service; or any ladders that are engineered, manufactured and installed on any of Company's equipment shall follow the requirements set forth by this program.

This program is applicable to all employees who may utilize ladders. When work is performed on a non-owned or operated site, the operator's program shall take precedence, however, this document covers the Company employees and contractors and shall be used on owned premises, or when an operator's program doesn't exist or is less stringent.

Definitions

Ladder – an appliance usually consisting of two side rails joined at regular intervals by cross- pieces called steps, rungs, or cleats, on which a person may step in ascending or descending.

Stepladder – a self-supporting portable ladder, nonadjustable in length, having flat steps and a hinged back. Its size is designated by the overall length of the ladder measured along the front edge of the side rails.

Single Ladder – a non-self-supporting portable ladder, nonadjustable in length, consisting of but one section. The overall length of the side rail designates its size.

Extension Ladder – a non-self-supporting portable ladder adjustable in length. It consists of two or more sections traveling in guides or brackets so arranged as to permit length adjustment. Its size is designated by the sum of the lengths of the sections measured along the side rails.

Fixed Ladder – a ladder permanently attached to a structure, building, or equipment.

Individual-Rung Ladder – a fixed ladder each rung of which is individually attached to a structure, building, or equipment.

Cage – a guard that may be referred to as a cage or basket guard, which is an enclosure that is fastened to the side rails of the fixed ladder or to the structure to encircle the climbing space of the ladder for the safety of the person who must climb the ladder.

Key Responsibilities

Superintendents and Supervisor

- Superintendents and supervisors are responsible for ensuring that all employees, and/or contractors have been trained in the use and inspection of ladders in accordance to the manufactures guidelines.
- Superintendents and supervisors are responsible for ensuring that all employees and contractors are aware that if an inspection discovers a defect, the ladder shall not be used and taken out of service, or disposed of properly.

Employees

- Employees shall inspect ladders prior, during and at the completion of each use to ensure the condition of the ladder and the safety of its occupants.
- Employees are responsible for following this program and reporting any damage or repairs that may be needed to their supervisor.

Procedure

Inspection, Care and Safe Work Practices of Ladders

Inspection

Ladders shall be inspected by a competent person for visible defects on a periodic basis and after any occurrence that could affect their safe use.

- Ladder rungs, cleats and steps shall be parallel, level and uniformly spaced.
- Any ladder has developed defects, shall be withdrawn from service for repair or destruction and tagged or marked as "Dangerous, Do Not Use."
- If a ladder is tipped over, it shall be inspected by a competent person for side rail dents or bends, or excessively dented rungs; check all rung to side rail connections; check hardware connections; check rivets for shears.
- Ladders with broken or missing steps, rungs, or cleats, broken side rails, or other faulty equipment shall not be used; improvised repairs shall not be made.

Care

Ladders shall be always maintained in good condition, the joint between the steps and side rails shall be tight, all hardware and fittings securely attached, and the movable parts shall operate freely without binding or undue play.

Metal bearings of locks, wheels, pulleys, etc., shall be frequently lubricated.

Frayed or badly worn rope shall be replaced. Safety feet and other auxiliary equipment shall be kept in good condition to ensure proper performance.

Rungs shall be kept free of grease and oil.

Ladders shall be stored in a well-ventilated area in a manner to prevent sagging and warping.

Safe Work Practices

Ladders shall be used only for the intended purpose for which they were designed.

The ladder shall be secured at the top or held by another person at the base.

The footing of the ladder shall be placed on a stable and level surface.

Ladders shall extend 3 feet above the top of an upper landing surface and extension ladders shall be placed at a 4:1 ratio.

When ladders are not able to be extended then the ladder shall be secured at its top to a rigid support that will not deflect.

Ladders shall not be placed on boxes, barrels, or other unstable bases to obtain additional height.

Ladders shall not be used in a horizontal position as platforms, runways, or scaffolds.

Ladders shall not be used by more than one man at a time.

Ladders shall not be placed in front of doors opening toward the ladder unless the door is blocked open, locked, or guarded.

If a ladder is used in a high traffic area, barricades shall be placed to avoid accidental displacement due to collisions.

Do not stand on the top two rungs or top of step ladders.

On two-section extension ladders the minimum overlap for the two sections in use shall be as follows:

Size of Ladder (feet)	Overlap (feet)
Up to and including 36’	3
Over 36 up to and including 48’	4
Over 48 up to and including 60’	5

No ladder shall be used to gain access to an elevated surface unless the top of the ladder extends at least 3 feet above the point of support, and properly tied off.

The employee shall maintain a three (3)-point grip on the ladder at all times and carry tools/equipment on a belt or hoist up. Do not carry anything in the hands that could cause injury in case of fall.

The employee shall face the ladder while ascending or descending.

The bracing on the back legs of stepladders is designed solely for increasing stability and not for climbing.

The ladder shall not be moved while occupied.

Portable Ladders

Stepladders shall not be longer than 20 feet.

Single ladders shall not be longer than 30 feet.

A two-section extension ladders shall not be longer than 60 feet. All ladders of this type shall consist of two sections, one to fit within the side rails of the other, and arranged in such a manner that the upper section can be raised and lowered.

Keep all ladders at least ten (10) feet away from power lines.

Ladders shall not be loaded beyond the maximum intended load for which they were built or in excess of the manufacturer's rated capacity. Weight includes the combined weight of the climber and his tools/equipment. Ladders are rated as the following:

- Type I – Heavy Duty – Capacity 250 pounds
- Type I-A – Extra Heavy Duty – Capacity 300 pounds
- Type IAA – Extra Heavy Duty – Capacity 375 pounds
- Type II – Medium Duty – Capacity 225 pounds
- Type III – Light Duty – Capacity 200 pounds

Fixed Metal Ladders

Ladders shall be constructed to withstand a minimum of 200 pounds.

All metal rungs shall have a minimum diameter of 1/4 inches.

Rungs shall not be more than 12 inches apart and shall be uniform throughout the length of the ladder.

Rungs shall be a minimum length of 16 inches and provide protection so a foot cannot slip off the end.

Rungs shall have a minimum of 7 inches between itself and the structure behind it.

Fixed ladders shall be provided with cages, wells, ladder safety devices, or self-retracting lifelines where the length of climb is less than 24 feet (7.3 m) but the top of the ladder is at a distance greater than 24 feet (7.3 m) above lower levels.

Where the total length of a climb equals or exceeds 24 feet (7.3 m), fixed ladders shall be equipped with one of the following:

- Ladder safety devices or self-retracting lifelines
- Rest platforms at intervals not to exceed 150 feet

Lockout Tagout Program

Definitions

Lockout – the placement of a lockout device on an energy isolating device in accordance with an established procedure, ensuring that the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

Lockout Device – a device that utilizes a positive means, such as either a key or combination type lock, to hold an energy isolating device in the safe position and prevent the energizing of a machine or equipment. Included are blank flanges and bolted slip blinds.

Normal Operation – the utilization of a machine or equipment to perform its intended operation.

Servicing and/or Maintenance – workplace activities such as constructing, setting up, adjusting, inspecting, modifying and maintaining and/or servicing machines and equipment, where the employee may be exposed to an unexpected energization or startup of the equipment or release of a hazardous energy source.

Setting Up – any work performed to prepare a machine or equipment for performing its normal operation.

Key Responsibilities

Superintendents and Supervisors

- Responsible to control and enforce this plan and to see that all their employees and contractors that are affected by lockout/tagout procedures, have the knowledge and understanding required for safe application, usage, and removal of all energy controls and devices.
- Ensure employees are trained and comply with the requirements of this program.

Employees

- Employees who are affected by this program are required to attend training on an annual basis.
- Are required to follow the provisions of this program.

Procedure

General

Only an authorized employee or employees performing the servicing or maintenance shall perform lockout or tagout.

Devices

Lockout Device – If an energy source can be locked out a device that utilizes a lock to hold an energy isolating device in a safe position shall be used. Each site shall have the same type of lock as specified by the Company.

Tagout Device – If an energy source cannot be locked out with a lockout device, then a tagout device shall be used. Tagout devices are a warning only level of protection and shall be weather and chemical resistant, standardized in color with clear written warning of hazardous energy, i.e. Do Not Operate, Do Not Start, Do Not Energize, etc. Each site shall have the same style of tags specified by the Company.

Specific Energy Control Procedures

Each manager or supervisor is responsible for developing specific step-by-step shutdown and startup procedures for a particular machine or piece of equipment in their respective area.

- A written, step-by-step lockout procedure for shutdown and startup shall be prepared for each type of machine or piece of equipment.

- This procedure shall include:

    - Equipment number if assigned.
    - Equipment location.
    - Energy Source(s) (i.e. electrical, hydraulic, gas pressure, etc.)
    - Location of isolating controls (i.e. breaker switches, valves, etc.)
    - Quantity of isolating controls
    - Quantity of locks required to isolate the equipment
    - Other hardware required to isolate the equipment (i.e. chains, valve covers, blocks, etc.)
    - List any residual energy required to be dissipated before work begins.

Specific Sequence for Application of Energy Control

1. Notification

Authorized employees must notify all other affected employees of the application and removal of lockout/tagout devices. Notification shall be given before the controls are applied and before they are removed from the machine or equipment.

2. Preparation for Shutdown

Before an authorized employee shuts down a machine, the authorized employee shall have the knowledge of the type and magnitude of the energy, the hazards of the energy to be controlled, and the method or means (locks) to control the energy sources.

3. Machine or Equipment Shutdown

The machine or equipment shall be shut down using the procedures established for that machine or piece of equipment. The shutdown shall be orderly to avoid any addition hazards to employees because of the stoppage.

4. Machine or Equipment Isolation

All energy isolating devices that are needed to control the energy to the machine or equipment shall be physically located and operated in such a manner as to isolate the machine or equipment from the energy source(s).

5. Lockout/Tagout Devices and Application

- Each authorized employee shall have the proper number of locks and devices to be able to perform proper lockout/tagout procedures for machines or equipment that they may be working on.
- Lockout or tagout devices shall be affixed to each energy isolating device by authorized employees.
- Each lockout and tagout devices shall include the name of the individual placing the device.
- Lockout devices shall be affixed in a manner to hold the energy isolating devices in a safe or off position.
- Tagout devices shall be affixed in a manner that will clearly indicate that the operation or movement of isolating devices from the safe or off position.
- Tagout devices used with energy isolating devices with the capability of being locked out shall be fastened at the same point at which the lock would have been attached. If a tag cannot be directly attached to the energy isolation device, it shall be located as close as safely as possible to the device in a position that will be immediately obvious to anyone attempting to operate the device.
- Each energy source shall be locked out completely isolating the equipment.
- Isolating machines or equipment shall include, but are not limited to:

    - Pumps, compressors, generators, electric distribution, storage tanks, etc.
    - Each type of equipment to be isolated shall have specific procedures for isolation, i.e. for compressors: suction, discharge, power, starting, fuel, dumps shall be closed, locked and tagged out properly. The blow-down valve shall be opened, locked and tagged out properly. (NOTE): If compressor has a side stream hooked up, the side stream shall be closed, locked and tagged out properly.

6. Stored Energy and the Possibility of Re-accumulation

Following the application of lockout or tagout devices to energy isolating devices, all potentially hazardous stored or residual energy shall be relieved, disconnected, restrained and otherwise rendered safe.

If there is a possibility of re-accumulation of stored energy, verification of isolation shall be continued until the servicing or maintenance operation is completed, or until the possibility of such accumulation no longer exists.

7. Verification of Isolation

The authorized employees performing the lockout procedure verifies/ensures that the equipment is isolated or disconnected from the energy source(s) by first checking that no personnel are exposed, then verify the isolation of the machine or equipment by operating the control(s) or by testing to make certain the equipment will not operate.

Multiple Workers

A crew of authorized employees may use a group lockout device, such as a hasp or group lockbox. This will afford the group of employees a level of protection equal to that provided by a personal lockout device.

- A safety review shall be conducted to review the lockout procedures and other information as required for safe work to continue – all crafts and effected departments shall be involved.

- An authorized employee will isolate the equipment and ascertain the exposure status of individual group members.
- All workers will then place their individual locks on the device's group lockout or tagout device after they have verified the procedure.
- The crew leader or an assigned authorized employee shall be responsible of assuring the continuity of the lockout procedures including documenting lockout information passed along during a shift or personnel changes.

Release from Lockout/Tagout

When servicing or maintenance is completed or when Lockout/Tagout devices must be temporarily removed, the equipment requires testing and the machine or equipment is ready for testing or to return to normal operating conditions, the following steps shall be taken, in this order:

- Check the machine or equipment and the immediate area surrounding the machine or equipment to ensure that all nonessential items such as tools have been removed and that the machine or equipment components are operationally intact.
- Check the work area to ensure that all personnel have been safely positioned or removed from the area.
- Remove the Lockout/Tagout device
- Energize and proceed with testing
- De-energize and reapply control methods including Lockout / Tagout devices
- Document the procedure by use of the completed isolation log and provide to supervisor for filing.

Removal of Locks

The authorized employee who applied the lock shall be the one to remove their lock. However, after all work has been completed, certain conditions may arise which prohibit this person from being present to remove the lock.

The following procedures shall be followed to allow for the removal of a lock that another person has applied:

- Every effort shall be made to contact the authorized employee who applied the lock to obtain the key(s).
- If the key(s) cannot be made available, the employee who requests removal of the lock shall contact their supervisor/Safety Team Member.
- The supervisor shall verify that every effort was made to contact the original authorized employee who applied the lock and to obtain the key(s).
- The employee removing the lock shall note on the Service Report that the lock(s) were removed with permission by supervisor.
- All reasonable efforts will be made by supervisor to notify that employee their lock has been removed, ensuring that the authorized employee has this knowledge before they return to work.
- If the equipment is client owned, the supervisor or employee requesting to remove the lock(s) shall contact the client to get the lock removed. Clients must remove their lock(s).
- NOTE: Company employees shall not remove any client locks.

Shift or Personnel Changes

In the event shift or personnel changes occur during maintenance and/or repair activities, the designated Company employee in charge shall take the necessary steps to maintain the continuity of the lockout/tagout protection. This includes maintaining that all provisions in this procedure are adhered to and the transfer of lockout/tagout devices between authorized employees is accomplished.

Contractors

Contractors performing lockout procedures on Company property shall comply with this procedure. Contractors shall supply their own locks. The Company shall initially lockout Company machines and equipment before the contractor will be allowed to apply their own lock in addition to the Company's.

Annual Audits

Each year the manager or supervisor, or his representative, will perform an inspection of the Lockout Program in their respective areas to verify the effectiveness of the program. An authorized employee other than the one(s) utilizing the energy control procedure being inspected shall perform the audit and shall verify that:

- Each authorized and/or affected employee has been trained as required.
- Any new equipment added has specific lockout procedures developed and documented.
- Current procedures are adequate for performing complete isolation of equipment and resulting in a zero-energy state.
- The annual audit will be certified in writing and a copy of the audit maintained on file through HCSS.

Training

The Company will provide training to ensure that the purpose and function of the energy control program are understood by authorized employees and that the knowledge and skills required for the safe application, usage, and removal of the energy controls are acquired by employees. The training shall include the following:

- The recognition of applicable hazardous energy (lockout/tagout) sources, the type and magnitude of the energy available in the workplace, and the methods and means necessary for energy isolation and control.

- The purpose and use of energy control procedures.

- When tagout systems are used, employees shall also be trained in the following limitations of tags:
    - Tags are essentially warning devices affixed to energy isolating devices, and do not provide the physical restraint on those devices that is provided by a lock.
    - When a tag is attached to an energy isolating means, it is not to be removed without authorization of the authorized person responsible for it, and it is never to be bypassed, ignored, or otherwise defeated.

- Tags must be legible and understandable by all authorized employees, affected employees, and all other employees whose work operations are or may be on the jobsite, to be effective.
- Tags and their means of attachment must be made of materials which will withstand the environmental conditions encountered in the workplace.
- Tags must be securely attached to energy isolating devices so that they cannot be inadvertently or accidentally detached during use.
- Tags may evoke a false sense of security, and their meaning needs to be understood as part of the overall energy control program.

All other employees whose work operations are or may be in an area where energy control procedures may be utilized, shall be instructed about the procedure, and about the prohibition relating to attempts to restart or reenergize machines or equipment which are locked out or tagged out.

Retraining

Retraining shall be conducted whenever a periodic inspection reveals, or whenever the Company has reason to believe that there are deviations from or inadequacies in the employee's knowledge or use of the energy control procedures.

The retraining shall reestablish employee proficiency and introduce new or revised control methods and procedures, as necessary.

Training Documentation

The Company shall certify that employee training has been accomplished and is being kept up to date. The certification shall contain each employee's name and dates of training.

SAMPLE TAG

WARNING

MINIMUM LOCK/OUT – TAG/OUT PROCEDURES

Inlet Suction Block Valve Discharge Block Valve

Fuel Gas Valve Start Gas Valve

Liquid Dump Line Blow Down (Lock Open)

When working on this compressor package the following items must be LOCKED OUT & TAGGED OUT. Residual pressure must be blown down. Open all valves on surge bottles and piping to relieve any pressure that may be trapped.

Side Stream (For Units Set up with Side Streams)

When working on the compressor each person must lock and tag the compressor package!

ANNUAL AUDIT OF THE CONTROL OF HAZARDOUS ENERGY PROGRAM

I certify that an audit of the Company "Control of Hazardous Energy" Program was conducted and that each employee has been trained in the recognition and procedures to lockout equipment they may be required to work on or may be affected by.

I further acknowledge that the current procedure is adequate to safely lockout equipment in this jobsite for servicing and maintenance.

Project: _____

Manager (or representative): _____

Date: _____

Original to file: _____

Noise Hearing Conservation Program

The purpose of this program is to provide a process to minimize employee-hearing loss caused by excessive occupational exposure to noise. This program applicable to all employees who may be exposed to noise in excess of 85 decibels (dB). When work is performed on a non-owned or operated site, the operator's program shall take precedence, however, this document covers Company employees and contractors and shall be used on owned premises, or when an operator's program doesn't exist or is less stringent.

Definitions

Audiometric Testing – detection by the person being tested of a series of pure tones. For each tone, the person indicates the lowest level of intensity that they can perceive.

Decibels - the sound energy measured by a sound level meter using the "A" scale. The "A" scale is electronically weighted to simulate the response of the human ear to high and low frequency noise.

Slow Response - the setting on the sound level meter that averages out impulses of brief duration that would cause wide fluctuation in the sound level meter reading.

Standard Threshold Shift - a change in hearing threshold relative to the baseline audiogram of an average of 10 dB (corrected for age) at 2000, 3000 and 4000 Hz in either ear.

Key Responsibilities

Managers and Supervisors

- Ensure requirements of this program are established and maintained.
- Ensure employees are trained and comply with the requirements of this program.

Employees

- Wear hearing protection when required, be properly trained, and cooperate with testing and sampling.

Procedure

Occupational hearing loss is a cumulative result of repeated or continued absorption of sound energy by the ear. Employee protection is based on reduction of the noise level at the ear or limiting the employee's exposure time. The Company shall offer hearing protection to all employees exposed to potential high noise levels in working areas and to those employees requesting hearing protection.

All employees, who are exposed to sound levels greater than 85 dBA on an 8-hour time-weighted average basis, must wear hearing protection and Company shall administer a continuing effective hearing conservation program.

Noise Monitoring

When information indicates that employee exposure may equal/exceed the 8-hour time-weighted average of 85 dBA, the Company will implement a monitoring program to identify employees to be included in the hearing conservation program. Noise monitoring will be conducted by a qualified employee or third party when determined by the Safety Team.

To evaluate noise exposure in terms of possible hearing damage, it is necessary to know the overall sound level ("A" scale measurement), the exposure time of the individual in hours per day and the length of time the individual has worked in the area being surveyed. This data shall be supplemented by the following:

- Name of area and location
- Date and time of survey
- Name of person conducting survey
- Description of instrument used, model and serial number
- Environmental conditions
- Description of people exposed

The Company will notify each employee of their monitoring results, or, if their job is exposed to noise 85 decibels or greater.

A plot of noise levels must be made for owned facilities. The plot must be filed or posted at the facility. The Company shall evaluate hearing protector attenuation for the specific noise environments. The adequacy of hearing PPE shall be reevaluated whenever noise exposures increase to the point that the PPE provided may no longer provide adequate protection. The Company will then provide more effective PPE where necessary.

All sound measuring equipment must be calibrated before and after each survey. Records of sound measuring equipment calibration and noise level surveys shall be kept for 20 years.

Noise Surveys must be repeated whenever changes in the workplace may expose additional personnel to high noise or hearing protection being used by employees may not be adequate to reduce the noise exposure to a level below 85 decibels.

Sound Level Surveys

- All jobsites that are suspected of having noise levels exceeding 85 decibels must be screened.

Exposure Surveys:

- A representative sampling of employees shall be conducted to determine the exposure to noise over a period of time.
- Noise dosimeters must be capable of integrating all continuous, intermittent and impulsive sound levels from 80 dB to 130 dB and must be calibrated so a dose of 50% corresponds to a time weighted average of 85 dB.

Signage

Clearly worded signs shall be posted at entrances to, or on the periphery of, areas where employees may be exposed to noise levels in excess of 85 decibels. These signs shall describe the hazards involved and the required protective actions.

Audiometric Testing

Each employee who is exposed to noise 85 decibels (8 hr TWA) or greater must take an audiogram annually.

- Within 6 months of an employee's first exposure at or above the action level Company shall establish a valid baseline audiogram against which future audiograms can be compared. If a mobile van is used, the baseline shall be established within 1 year.
- An employee shall receive an annual audiogram every year they work in a position that is exposed to noise 85 decibels or greater.
- A qualified third party shall perform all audiometric testing, evaluation, reporting and retesting.
- Audiometric testing shall be preceded by a period of at least 14 hours during which there is no exposure to workplace noise. Employees shall be notified to avoid high levels of noise.
- This requirement may be met by the use of hearing protectors that reduce the employee noise exposure level below 80 decibels.
- An otoscopic exam is required before an audiogram is initiated. A qualified person shall examine the ear canal for any ear infections or canal irregularities that might affect the audiogram or rule out the use of earplugs.

Annual audiograms shall be evaluated as follows:

- Each audiogram shall be compared to the employees' baseline audiogram to ensure the test was valid and to determine if a standard threshold shift has occurred.
- If a standard threshold shift is determined, the employee will be retested within 30 days.
- The retest results will be considered as the annual audiogram.
- Employees shall be informed of their audiometric test results in writing within 21 days of determination.
- If the employee has sustained a standard threshold shift, after retesting, that employee shall be retrained and refitted for appropriate hearing protection.
- The employee shall be referred for additional medical evaluation if indicated.

Employee audiograms are considered medical/exposure records. These records must be kept for the length of employment plus 30 years.

Hearing Protection Devices

Hearing protectors shall be made available to the employee in sizes and configurations that will be comfortable to the employee. These hearing protection devices shall be made available to all employees exposed to an 8-hour time-weighted average of 85 db at no cost to employees. Employees shall be properly trained in the use, care & fitting of protectors. Use hearing protectors whenever applicable.

Records

The Company shall maintain accurate record of all employee exposure measurements and if the Company ceases to do business it shall transfer to the successor employer all noise and hearing conservation records required to be maintained and the successor employer shall retain them for the remainder of the period required by OSHA.

Training

A training program shall be established to inform employee, on an annual basis, of the effect of noise on hearing; the purpose of hearing protectors, including the advantages, disadvantages and alternatives of various types, including instructions on selection, fitting, use and care; and the purpose of audiometric testing and an explanation of test procedures.

Training shall be updated to be consistent with changes in the work process and PPE requirements.

All staff shall have a copy of this program and it shall be posted at the worksite and a copy made available to all employees, their representatives, and regulatory agencies.

The training must be documented.

Occupational Health Hazard Control Program

The Company has a formal exposure control program for occupational health exposures to the field erection crews. This program includes exposure evaluations for health hazards related to field erection of tanks and vessels. Exposures that have been evaluated include the following:

- Employee exposure to occupational noise
- Employee exposure to welding fumes
- Employee exposure to grinding dust
- Employee exposure to Respirable Crystalline Silica

With respect to occupational noise exposure, the Company utilizes mandatory hearing protection for employees performing both welding and grinding operations that produce noise in excess of the allowable 85 dbA. The Company's Industrial Hygiene Evaluations with respect to noise have indicated that the processes of welding and grinding operations do result in employee exposure to noise in excess of 85 dbA. Mandatory hearing protectors are used for control of this exposure. In that IH evaluations have been performed in the past of these tasks, and the control measures designed, no additional noise exposures are planned for this project.

With respect to welding fumes and grinding dust, exposure monitoring has been performed on many projects for these exposures. This exposure monitoring has confirmed the Company's method of utilizing engineering controls to engineer out the exposure are successful. This exposure monitoring has included at least two Industrial Hygiene Evaluations performed over the past year on stainless tank fabrication and field fabrication operations that include exposure monitoring for chromium III, cadmium and manganese. Each of these Industrial Hygiene Evaluations have confirmed that the employee exposure levels for each of these contaminants is well below both the OSHA PEL's, Action Levels, and ACGIH TLV's. These Industrial Hygiene Evaluations were performed on projects similar to the CONTROLLING CONTRACTOR project on stainless vessels. These Industrial Hygiene Evaluations were performed to confirm the effectiveness of our engineering controls.

Given the fact that these evaluations have already been performed on projects such as this tank field fabrication and erection, we do not plan for additional evaluations to be performed on this project. Rather, we will utilize the same engineering controls including ventilation methods to control employee exposure to welding fumes.

Additional noise exposure monitoring has also been performed quantifying that noise exposures during welding, grinding and gouging exceed 85 dBA on an 8-hour TWA basis. For these operations, the Company imposes mandatory hearing protector use.

If necessary, copies of these Industrial Hygiene Evaluations may be provided for their review and confirmation of the effectives of our program.

With respect to Hexavalent Chrome exposure, please refer to the separate program covering this exposure and the Company's program and management elements for this exposure.

Powered Industrial Trucks Program

The purpose of this program is to establish requirements for the safe operation and use of Powered Industrial Trucks and this program applies to all Company employees who operate a Powered Industrial Truck in the scope of their job duties and assignments. NOTE: Only trained and certified operators, including supervisors are allowed to operate forklifts and industrial trucks. The Company will certify all authorized employees regarding competency on all types of equipment.

Definitions

Authorized Employee – a person, at least 18 years of age and who has completed the Company's required safety training for the safe operations of forklifts.

Forklift (Powered Industrial Truck) – any mechanical device used for the movement of supplies, material or finished a product that is powered by an electric motor or an internal combustion engine.

Key Responsibilities

Supervisor/Foreman

- Shall ensure that each powered forklift operator is competent to operate a forklift safely, as demonstrated by the successful completion of the training and evaluation program.
- Shall ensure that all forklifts are inspected before each use and all repairs are made before the forklift is operated.

Employees

- Shall be current on applicable training.
- Operate forklift in accordance to the forklift standards and manufacture requirements.
- Inspect forklift at prior to use and remove from service if defects are found until they are corrected.
- Operate forklift in a safe manner.

Procedure

General

All approved forklifts shall have a manufactures identification plate attached showing all specifications of the forklift and that the forklift is accepted by a nationally recognized testing laboratory.

Modifications and additions, that affect capacity and safe operation, shall not be performed without manufacturer's prior written approval. Capacity, operation, and maintenance instruction plates, tags, or decals shall be changed reflect the modification or addition.

If the forklift is equipped with front-end attachments other than factory installed attachments, the supervisor shall ensure that the forklift is marked to identify the attachments and show the approximate weight of the forklift and attachment combination at maximum elevation with load laterally centered.

The operator shall see that all nameplates and markings are in place and are maintained in a legible condition.

All forklifts shall be equipped with safety seat belts. All forklifts shall be equipped with a horn, backup alarm, beacon light, headlights, and taillight.

Safety Guards

Forklifts shall be fitted with an overhead rollover cage, as per manufactures specifications.

If the type of load presents a hazard to the operator, the forklift shall be equipped with a vertical load backrest extension, as per manufactures specifications.

Training

Training shall consist of a combination of formal instruction (e.g., lecture, discussion, interactive computer learning, video tape, and written material), practical training (demonstrations performed by the trainer and practical exercises performed by the trainee) and evaluation of the operator's performance in the workplace.

All operator training and evaluation shall be conducted by authorized persons who have the knowledge, documented training, and experience to train powered industrial truck operators and evaluate their competence.

Selected employees who have been trained shall receive refresher training be evaluated, at a minimum, every three years.

Training shall include the following topics, except in topics for locations where they are not applicable to safe operation of the truck due to type of equipment or facility conditions.

1. Operating instructions, warnings, and precautions for the types of truck the operator will be authorized to operate,
2. Differences between the truck and the automobile,
3. Truck controls and instrumentation: where they are located, what they do, and how they work,
4. Engine or motor operation,
5. Steering and maneuvering,
6. Visibility (including restrictions due to loading),
7. Fork and attachment adaptation, operation, and use limitations,
8. Vehicle capacity,
9. Vehicle stability,
10. Any vehicle inspection and maintenance that the operator will be required to perform,
11. Refueling and/or charging and recharging of batteries,
12. Operating limitations,
13. Any other operating instructions, warnings, or precautions listed in the operator's manual for the types of vehicle that the employee is being trained to operate,
14. Surface conditions where the vehicle will be operated,
15. Composition of loads to be carried and load stability,
16. Load manipulation, stacking, and unstacking,
17. Pedestrian traffic in areas where the vehicle will be operated,
18. Narrow aisles and other restricted places where the vehicle will be operated,
19. Hazardous (classified) locations where the vehicle will be operated,
20. Ramps and other sloped surfaces that could affect the vehicle's stability,
21. Closed environments and other areas where insufficient ventilation or poor vehicle maintenance could cause a buildup of carbon monoxide or diesel exhaust,

22. Other unique or potentially hazardous environmental conditions in the workplace that could affect safe operation, and
23. The requirements of CFR 1910.178 (Powered Industrial Trucks).

Retraining is required when employee performs the equipment in an unsafe manner, there is an incident, or a different vehicle type is put in service or changes in conditions.

Certification

The trainer shall certify in writing that each operator has been trained and evaluated as required.

The certification shall include the name of the operator, the date of the training, the date of the evaluation and the identity of the person(s) performing the training and/or evaluation.

Operations

General

- All operators shall wear a safety seat belt when operating a forklift.
- Forklifts shall not be driven up to anyone standing in front of a bench or other fixed object.
- No person shall be allowed to stand or pass under the elevated portion of any forklift, whether loaded or empty.
- Unauthorized personnel shall not be permitted to operate forklifts.
- No riders or passengers are permitted.
- It is prohibited for arms or legs to be placed between the uprights of the mast or the running lines of the forklift.
- When a forklift is left unattended, load engaging means shall be fully lowered, controls shall be neutralized, power shall be shut off, and brakes set.
- Wheels shall be blocked if the forklift is parked on an incline.
- A forklift is unattended when the operator is 25 ft. or more away from the vehicle, which remains in view, or whenever the operator leaves the forklift, and it is not in view.
- When the operator of a forklift is dismounted and within 25 ft. of the forklift still in view, the load engaging means shall be fully lowered, controls neutralized, and the brakes set to prevent movement.
- A safe distance shall be maintained from the edge of ramps or platforms while on any elevated dock, or platform or freight car.
- Forklifts shall not be used for opening or closing freight doors.
- Brakes shall be set and wheel blocks shall be in place to prevent movement of trucks, trailers, or railroad cars while loading or unloading.
- Fixed jacks may be necessary to support a semi-trailer during loading or unloading when the trailer is not coupled to a tractor.
- The flooring of trucks, trailers, and railroad cars shall be checked for breaks and weakness before they are driven onto.
- There shall be sufficient headroom under overhead installations, lights, pipes, sprinkler system, etc.
- An overhead guard (cages) shall be used as protection against falling objects.
- An overhead guard is intended to offer protection from the impact of small packages, boxes, bagged material, etc., representative of the job application, but not to withstand the impact of a falling capacity load.
- Fire aisles, access to stairways, and fire equipment shall be kept clear.

Traveling

- The operator shall slow down and sound the horn at cross isles and other locations where vision is obstructed.
- If the load being carried obstructs forward view, the operator shall be required to travel with the load trailing.
- The operator shall be required to look in the direction of and keep a clear view of the path of travel.
- Grades shall be ascended or descended slowly.
- When ascending or descending grades more than 10 percent, loaded forklifts shall be driven with the load upgrade.
- On all grades the load and load engaging means shall be tilted back if applicable and raised only as far as necessary to clear the road surface.
- Under all travel conditions the forklift shall be operated at a speed that will permit it to be brought to a stop in a safe manner.
- Stunt driving and horseplay are prohibited.
- The operator shall slow down for wet and slippery floors.
- Dock board or bridge plates shall be properly secured before they are driven over.
- Dock board or bridge plates shall be driven over carefully and slowly, and their rated capacity never exceeded.
- While negotiating turns, speed shall be reduced to a safe level by means of turning the hand steering wheel in a smooth, sweeping motion.
- Except when maneuvering at a very low speed, the hand steering wheel shall be turned at a moderate, even rate.

Loading

- Only stable or safely arranged loads shall be handled.
- Caution shall be exercised when handling off-center loads, which cannot be centered.
- Only loads within the rated capacity of the forklift shall be handled.
- Forklifts equipped with attachments shall be operated as partially loaded forklifts when not handling a load.
- A load engaging means shall be placed under the load as far as possible; the mast shall be carefully tilted backward to stabilize the load.
- Extreme care shall be used when tilting the load forward or backward, particularly when high tiering.
- Tilting forward with load engaging means elevated shall be prohibited except to pick up a load.
- An elevated load shall not be tilted forward except when the load is in a deposit position over a rack or stack.
- When stacking or tiering, only enough backward tilt to stabilize the load shall be used.

Operation of the Truck

- If at any time a forklift is found to need repair, defective, or in any way unsafe, the forklift shall be taken out of service until it has been restored to safe operating condition.
- Fuel tanks shall not be filled while the engine is running.
- Spillage of oil or fuel shall be carefully washed away or completely evaporated and the fuel tank cap replaced before restarting engine.

- When fueling with Liquefied Petroleum Gas (LPG), precautions and handling requirements set forth in the "Safe Handling of LPG" program shall be followed.
- No forklift shall be operated with a leak in the fuel system.
- Open flames shall not be used for checking electrolyte level in storage batteries or gasoline level in fuel tanks.
- Operator must verify trailer chocks, supports, and dock plates are secured prior to loading/unloading.

Maintenance of Forklifts

- Only authorized personnel shall perform maintenance and make repairs.
- Those repairs to the fuel and ignition systems of forklifts, which involve fire hazards, shall be conducted only in locations designated for such repairs.
- Forklifts in need of repairs to the electrical system shall have the battery disconnected prior to such repairs.
- Only parts equivalent with those used in the original design shall replace all parts of any forklift requiring replacement parts.
- Forklifts shall not be altered so that the relative positions of the various parts are different from what they were when originally received from the manufacturer, nor shall they be altered either by the addition of extra parts not provided by the manufacturer or by the elimination of any parts.
- Additional counter weighting of fork trucks shall not be done unless approved by the truck manufacturer.
- Forklifts shall be inspected before being placed in service and shall not be placed in service if the inspection shows any condition adversely affecting the safety of the forklift.
- Inspection shall be made at least daily – prior to each use. (Visual – non documented) Inspection items shall be posted on each forklift. Operators must ensure the vehicle is safe prior to operating.
- Where forklifts are used on a round-the-clock basis, they shall be inspected before each use.
- Defects when found shall be immediately reported to the supervisor and corrected before operating the forklift.
- When the temperature of any part of any forklift is found to be more than its normal operating temperature, thus creating a hazardous condition, the forklift shall be removed from service and not returned to service until the cause for such overheating has been eliminated.
- Forklifts shall be kept in a clean condition, free of lint, excess oil, and grease.
- Noncombustible agents, where at all possible, shall be used for cleaning trucks.
- Low flash point (below 100 degrees F.) solvents shall not be used.
- High flash point (at or above 100 degrees F.) solvents may be used if precautions regarding toxicity, ventilation, and fire hazard are mitigated with the agent or solvent used.

Personal Protective Equipment (PPE) Program

The purpose of the Personal Protective Equipment section is to set forth the procedures for the use, care, and maintenance of personal protective equipment required to be used by employees for the prevention of injuries. This program applies to all Company employees.

Key Responsibilities

Safety Director

- Assists in the selection of appropriate PPE. If a task exposes an employee to hazards which cannot be eliminated through engineering or administrative controls, the Safety Director assists the supervisor and project manager to identify and select PPE suitable for the specific task performed, conditions present, and frequency and duration of exposure. Employees need to give feedback to the supervisor about the fit, comfort, and suitability of the PPE being selected. Employees are provided reasons for selection of PPE.
- Assists supervisor and site managers in assuring all PPE obtained meets regulatory and this procedure's requirements.
- Performs Worksite Hazard Assessments - the hazard assessment must indicate a determination if hazards are present or are likely to be present, which necessitate the use of PPE. Sources of hazards include but are not limited to: hazards from impact/motion, high/low temperatures, chemicals, materials, radiation, falling objects, sharp objects, rolling or pinching objects, electrical hazards, and workplace layout.
- Certifies in writing the tasks evaluated, hazards found, and PPE required to protect employees against hazards and ensures exposed employees are made aware of hazards and required PPE before they are assigned to the hazardous task. Certificate shall include certifier's name, signature, dates and identification of assessment documents.

Managers and Supervisors

- Supervisors and managers shall regularly monitor employees for correct use and care of PPE and obtain follow-up training if required to ensure each employee has adequate skill, knowledge, and ability to use PPE.
- Supervisors and managers shall enforce PPE safety rules following the guidance of the Company's disciplinary procedures.

Employees

- Complying with the correct use and care of PPE.
- Reporting changes in exposure to hazardous conditions that might require a follow-up assessment of the task for PPE.
- Reporting and replacing defective PPE, which shall not be used.
- Wearing of required PPE is a condition of employment.
- Assess PPE to ensure in proper working order.

General

Employee-owned equipment is NOT permitted, except for safety toe footwear and prescription safety glasses (which may be paid for by the Company, in part).

All PPE issued, except specialty safety footwear, shall be at no cost to the employee and PPE shall be used and maintained in a sanitary and reliable condition.

All employees will know and follow the procedures outlined in this Program.

Eye Protection

Employees must use appropriate eye or face protection when exposed to eye or face hazards from flying particles, molten metal, liquid chemicals, acids or caustic liquids or chemical gases or vapors. Eye and Face PPE must comply with ANSI Standard Z87.1-2003 (Z87+), Occupational and Educational Personal Eye and Face Protective Devices.

Safety Glasses

Safety glasses that meet ANSI Z-87.1-2003 standards with "high impact lenses" are required to be worn by all employees, subcontractors, and visitors while on the Company's property, always, as described below:

- At field locations, in shops and warehouses.
- In all yard work zones or by everyone when in the vicinity of loading or unloading equipment, performing mechanic or maintenance work, test stand operations, operating equipment such as forklifts, welding, or any type of work which has the potential to inflict an eye injury.
- In any office, restroom, or any other building while performing any type of work where a potential eye injury may be present.
- Workers assisting welders must wear absorbent safety glasses that protect the wearer from ultra-violet (UV) and/or infrared rays (IR).
- Dark shaded lens (sunglasses) darker than a # 1 shade is prohibited to be worn indoors unless welding or assisting a welder.
- Safety glasses are not required:
  - Inside offices.
  - Parking lots when traveling from vehicles to and from office buildings by way of main doors that do not pass through shops.

Goggles

- Chemical splash proof goggles shall be worn when handling or mixing liquid chemicals, solvents, paints, etc., and/or as recommended on the Safety Data Sheet of the material being handled.

- Dust proof goggles shall be worn when blowing equipment down with compressed air or while performing other jobs where safety glasses are not adequate to prevent airborne particles from entering the openings around the lenses.

Face Shields

- Full face shields shall be worn over safety glasses when operating hand held or stationery grinders with abrasive or wire wheels, while chipping paint or concrete or, performing jobs where

there is the potential for flying objects striking the face and safety glasses or goggles would not provide adequate protection.

Head Protection

Employees must wear protective helmets when working in areas where there is a potential for injury to the head from employee-initiated impact or impact from falling or other moving objects. Helmets must comply with ANSI Standard Z89.1-1997 Class C, American National Standard for Industrial Head Protection for Type II head protection or be equally effective.

- Hardhats are to be worn at all field locations, or where deemed necessary as per each location's PPE Hazard Assessment.
- Hardhats will not be altered in any way and must be worn per manufacturer's specifications.
- Do not paint or apply unauthorized stickers, name plates, etc.
- Do not drill, cut, bend, or apply heat.
- Do not alter the suspension system.
- Hardhats will be inspected by the employee regularly for cracks, chips, scratches, signs of heat exposure (sun cracks), etc.
- Defective hardhats will be immediately removed from service replaced
- Hardhats shall not be placed in rear windows of vehicles where they will be exposed to the sun or become projectiles during an accident.
- A supply of hardhats may be made available to visitors.
  - The Company shall provide hardhats.
  - Employees will be trained in the use, care and maintenance of head protection equipment.

Hearing Protection

Hearing protection is required to be worn by all employees, subcontractors, and visitors while in posted "High Noise" areas. Refer to the Company's Hearing Conservation Program for more information.

Warning signs will be posted in areas known or suspected to have noise levels exceeding 85 dBA either constantly or intermittently.

When signs are not posted, employees shall wear hearing protection when noise caused by machinery, tools, etc., prevents normal conversations to be heard clearly.

Rule of thumb: If you have to yell to be heard, hearing protection is required.

Types

- Molded Inserts (ear plugs)
- Muff, either headband or hard hat mounted Earmuffs and earplugs shall be provided to the employee in sizes and configurations that will be comfortable to the employee.

Care and Maintenance

- Inspect hearing protection prior to each use.
- Hearing protection must be kept clean to prevent ear infections.
- Most earplugs used today are disposable and must be discarded when they become dirty, greasy, or cracked.

- Earmuffs that have deteriorated foam inserts, cracked seals or are defective must be replaced.

Fit

- Due to individual differences, not everyone can wear the same type of hearing protection. A variety of styles may have to be tried before one is found to be comfortable and provide adequate protection.
- Employees shall be instructed how to obtain the proper fit.

Hand Protection

Gloves

- Gloves are required to be worn when performing work, which may expose the hands to extreme temperatures, and abrasions, or exposure to chemicals.
- Welding: Welding gloves made of leather or other heat resistant materials shall be worn when performing arc welding or oxygen/gas cutting.
- Chemical: Impervious (chemical resistant) gloves shall be worn when handling chemicals that specify gloves as personal protection equipment when handling.
- Refer to the specific chemical's Safety Data Sheet for the correct glove type.
- Persons assigned to working with chemicals, i.e., solvent vats, shall be issued their own individual gloves for hygiene purposes.
- Leather: Leather gloves should be worn when working with sharp materials or when handling rigging equipment.
- Cloth: Cloth gloves should be worn when handling objects or materials, which could cause blisters, splinters, etc.
- Heat Resistant: Heat resistant gloves shall be worn when handling hot bearings, races, or other materials or objects that have been heated beyond ambient temperatures.
- Insulated: Insulated gloves shall be worn to prevent frostbite in extreme cold climates.

Glove Inspections

- Gloves shall be inspected before each use for holes, tears, and worn areas.
- Chemical gloves shall be periodically air tested for pinholes by twisting the cuff tightly, apply low air pressure to expand the glove, and then submersing in water to check for bubbles.
- Defective gloves shall be discarded immediately. Exception: machinists are exempted from wearing gloves while working with rotating machinery.

Foot Protection

Safety footwear shall be worn by all employees with regularly assigned duties at field locations, in shops and warehouses.

- Office workers and visitors who enter these areas on an infrequent basis will not be required to wear foot protection provided they stay clear of the work being performed.
- If required to be in the proximity of the work, the work will be stopped while visiting the area or safety footwear will be worn.

Shops, Field Locations, Warehouses and Parts Departments: Leather or equivalent boots, either lace up or pull up, shall be worn.

- The boot must provide ankle protection and have soles designed to protect from punctures with defined heels for climbing ladders.
- Metatarsal guards will be worn when duties present a hazard of equipment or material crushing the foot.
- All safety footwear must meet ANSI Z41-1999 standards.
- Client locations may require safety footwear to be worn by everyone; check with the local supervisor for client requirements before visiting field locations.

Fall Protection

Personal fall protection is required when performing certain elevated jobs more than six feet. Consult the Company's Fall Protection Program.

Worksite Hazard Assessment

During a hazard assessment the following sample hazard sources will be identified:

- High or low temperatures; Chemical exposures (use SDS for guidance)
- Flying particles, molten metal or other eye, face, or skin hazards
- Falling objects or potential for dropping objects; employee falling from a height of 6' or more
- Sharp objects: Rolling or pinching that could crush the hands or feet;

Electrical hazards

Where these hazards could cause injury to employees, personal protective equipment must be selected to substantially eliminate the injury potential. Employees will be notified for the selection and reason.

The results of this assessment shall be communicated to each affected employee and kept at the local office.

Selected/identified PPE shall be fitted to each affected employee. Exemptions for use of PPE must be supported by the PPE hazard assessment.

Monitoring

Supervisors and site managers monitor worksite tasks for changes in, or the introduction of new hazards. If new hazards are discovered, they advise the Safety Director who then conducts a hazard assessment for appropriate PPE. The Safety Director monitors the effectiveness of the PPE Procedure and makes recommendations to management to improve the procedure.

Each employee who requires PPE shall be properly trained. Training shall include:

- When PPE is necessary.
- What PPE is necessary.
- How to properly don, doff, adjust and wear PPE.
- The limitations of PPE.
- How to maintain PPE in a sanitary and reliable condition.

Retraining

Retraining is required when:

- The workplace changes, making the previous training obsolete.
- The type of PPE changes.
- When the employee demonstrates lack of use, improper use, or insufficient skill or understanding in PPE selection, necessity, use and limitations.

Documentation

Training shall be documented and records kept at the local office. The training documentation shall include:

- Name of employee(s) trained;
- The dates of training; and
- The training subject.

Barricade and Signage Program

The importance and integrity of the Company's barricades are critical in the light of construction conditions and significant construction activities adjacent to the Company worksite. This program outlines the measures to be taken to ensure safe working conditions through the proper use of signs, signals and barricades.

Responsibilities

- Management will provide appropriate resources to implement this program effectively.
- Supervisors will ensure that all employees and contractors follow the requirements of this program.
- Employees and contractors are responsible for following the requirements of this program.

Signs:

- Signs will be posted to warn of potential hazards, comply with relevant standards, and provide instructions for safe work practices.
- Signs will be visible, legible, and posted in a location where they can be easily seen.
- Signs will be regularly inspected to ensure they remain in good condition and are still relevant.

Signals:

- Signals will be used to communicate with operators of equipment, vehicles, and cranes.
- Signals will be clearly visible and easily understood by the operator.
- Signals will be standardized and follow recognized hand signals or other appropriate methods.
- Operators will be trained to respond correctly to signals and to stop work if the signal is unclear or not understood.

Barricades:

- Barricades will be used to restrict access to areas where work is being performed and where there are potential hazards.
- Barricades will be constructed to prevent unauthorized access.
- Barricades will be properly marked with appropriate signs.
- Barricades will be inspected regularly to ensure they remain in good condition.

The Company will utilize the following procedures with respect to the Company's barricade management:

1. Company barricades will be marked as "Danger" in compliance with requirements of OSHA and ANSI.

2. Barricades will be located to properly protect not only the Company workforce, but surrounding workforces we well. A 20 ft. – 30 ft. barricade radius around the operational site is required to properly protect surrounding trades.

3. Company barricade signage will be comprehensive and will list all of the primary construction hazards within the barricaded areas to clearly and concisely communicate the hazards. The signs will be so located as to provide a clear communication of the hazards on all sides of the barricade.

4. The Company requires that no persons enter these barricades without first obtaining authorization from Company Supervisor or a member of the Safety Team. The Company reserves the right to bar any person from entering our barricaded area not properly protected.

5. The Company will manage the barricades it erects. No other parties may move, destroy, damage or alter these barricades so as to damage the integrity of the barricade system. All requests for movement or alteration of the barricade in any form must be coordinated with Company project management and safety management.

The integrity of the Company's barricaded areas must be maintained.

Respirable Crystalline Silica Exposure Control Program

This program applies to all Company occupational exposures to respirable crystalline silica in construction work, except where employee exposure will remain below 25 micrograms per cubic meter of air (25 µg/m3) as an 8-hour time-weighted average (TWA) under any foreseeable conditions.

Definitions

For the purposes of this program the following definitions apply:

Action Level means a concentration of airborne respirable crystalline silica of 25 µg/m3, calculated as an 8-hour TWA.

Assistant Secretary means the Assistant Secretary of Labor for Occupational Safety and Health Administration (OSHA), U.S. Department of Labor, or designee.

Competent Person means an individual who can identify existing and foreseeable respirable crystalline silica hazards in the workplace and who has authorization to take prompt corrective measures to eliminate or minimize them. The competent person must have the knowledge and ability necessary to fulfill the responsibilities set forth in this program.

Employee Exposure means the exposure to airborne respirable crystalline silica that would occur if the employee were not using a respirator.

High-Efficiency Particulate Air (HEPA) Filter means a filter that is at least 99.97 percent efficient in removing mono-dispersed particles of 0.3 micrometers in diameter.

Objective Data means information, such as air monitoring data from industry-wide surveys or calculations based on the composition of a substance, demonstrating employee exposure to respirable crystalline silica associated with a particular product or material or a specific process, task, or activity. The data must reflect workplace conditions closely resembling or with a higher exposure potential than the processes, types of material, control methods, work practices, and environmental conditions in the employer's current operations.

Physician or Other Licensed Health Care Professional (PLHCP) means an individual whose legally permitted scope of practice (i.e., license, registration, or certification) allows him or her to independently provide or be delegated the responsibility to provide some or all the particular health care services required by this program.

Respirable Crystalline Silica means quartz, cristobalite, and/or tridymite contained in airborne particles that are determined to be respirable by a sampling device designed to meet the characteristics for respirable-particle-size-selective samplers specified in the International Organization for Standardization (ISO) 7708:1995: Air Quality—Particle Size Fraction Definitions for Health-Related Sampling.

Specialist means an American Board-Certified Specialist in Pulmonary Disease or an American Board-Certified Specialist in Occupational Medicine.

Specified Exposure Control Methods

For each Company employee engaged in a task identified on Table 1, Company shall fully and properly implement the engineering controls, work practices, and respiratory protection specified for the task on Table 1.

Equipment/Task	Engineering and Work Practice Control Methods	Required Respiratory Protection and Minimum Assigned Protection Factor (APF) ≤ 4 Hours/Shift Exposure	Required Respiratory Protection and Minimum Assigned Protection Factor (APF) > 4 Hours/Shift Exposure
Stationary masonry saws	Use saw equipped with integrated water delivery system that continuously feeds water to the blade. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.	None	None
Handheld power saws (any blade diameter)	Use saw equipped with integrated water delivery system that continuously feeds water to the blade. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions:		
	-When used outdoors	None	APF 10
	-When used indoors or in an enclosed area	APF 10	APF 10
Handheld power saws for cutting fiber-cement board (with blade diameter of 8 inches or less)	For tasks performed outdoors only: Use saw equipped with commercially available dust collection system. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency.	None	None

Equipment/Task	Engineering and Work Practice Control Methods	Required Respiratory Protection and Minimum Assigned Protection Factor (APF) ≤ 4 Hours/Shift Exposure	Required Respiratory Protection and Minimum Assigned Protection Factor (APF) > 4 Hours/Shift Exposure
Walk-behind saws	Use saw equipped with integrated water delivery system that continuously feeds water to the blade. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions:		
	-When used outdoors	None	None
	-When used indoors or in an enclosed area	APF 10	APF 10
Drivable saws	Use tool equipped with integrated water delivery system that supplies water to cutting surface. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.	None	None
Rig-mounted core saws or drills	Use tool equipped with integrated water delivery system that supplies water to cutting surface. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.	None	None
Handheld and stand-mounted drills (including impact and rotary hammer drills)	Use drill equipped with commercially available shroud or cowling with dust collection system. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency and a filter-cleaning mechanism. Use a HEPA-filtered vacuum when cleaning holes	None	None

Equipment/Task	Engineering and Work Practice Control Methods	Required Respiratory Protection and Minimum Assigned Protection Factor (APF) ≤ 4 Hours/Shift Exposure	Required Respiratory Protection and Minimum Assigned Protection Factor (APF) > 4 Hours/Shift Exposure
Dowel drilling rigs for concrete	For tasks performed outdoors only: Use shroud around drill bit with a dust collection system. Dust collector must have a filter with 99% or greater efficiency and a filter-cleaning mechanism. Use a HEPA-filtered vacuum when cleaning holes.	APF 10	APF 10
Vehicle-mounted drilling rigs for rock and concrete	Use dust collection system with close capture hood or shroud around drill bit with a low-flow water spray to wet the dust at the discharge point from the dust collector;	None	None
	or		
	Operate from within an enclosed cab and use water for dust suppression on drill bit.	None	APF 10
Jackhammers and handheld powered chipping tools	Use tool with water delivery system that supplies a continuous stream or spray of water at the point of impact:		
	-When used outdoors	None	None
	-When used indoors or in an enclosed area	APF 10	APF 10
	or		
	Use tool equipped with commercially available shroud and dust collection system.		
	Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.		
	Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency and a filter-cleaning mechanism:		
	-When used outdoors	None	APF 10
	-When used indoors or in an enclosed area	APF 10	APF 10

Equipment/Task	Engineering and Work Practice Control Methods	Required Respiratory Protection and Minimum Assigned Protection Factor (APF) ≤ 4 Hours/Shift Exposure	Required Respiratory Protection and Minimum Assigned Protection Factor (APF) > 4 Hours/Shift Exposure
Handheld grinders for mortar removal (i.e., tuckpointing)	Use grinder equipped with commercially available shroud and dust collection system. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. Dust collector must provide 25 cubic feet per minute (cfm) or greater of airflow per inch of wheel diameter and have a filter with 99% or greater efficiency and a cyclonic pre-separator or filter-cleaning mechanism.	APF 10	APF 25
Handheld grinders for uses other than mortar removal	For tasks performed outdoors only: Use grinder equipped with integrated water delivery system that continuously feeds water to the grinding surface. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions;	None	None
	Or		
	Use grinder equipped with commercially available shroud and dust collection system. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. Dust collector must provide 25 cubic feet per minute (cfm) or greater of airflow per inch of wheel diameter and have a filter with 99% or greater efficiency and a cyclonic pre-separator or filter-cleaning mechanism:		
	-When used outdoors	None	None
	-When used indoors or in an enclosed area	None	APF 10

Equipment/Task	Engineering and Work Practice Control Methods	Required Respiratory Protection and Minimum Assigned Protection Factor (APF) ≤ 4 Hours/Shift Exposure	Required Respiratory Protection and Minimum Assigned Protection Factor (APF) > 4 Hours/Shift Exposure
Walk-behind milling machines and floor grinders	Use machine equipped with integrated water delivery system that continuously feeds water to the cutting surface. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.	None	None
	Or		
	Use machine equipped with dust collection system recommended by the manufacturer. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. Dust collector must provide the air flow recommended by the manufacturer, or greater, and have a filter with 99% or greater efficiency and a filter-cleaning mechanism. When used indoors or in an enclosed area, use a HEPA-filtered vacuum to remove loose dust in between passes.	None	None
Small drivable milling machines (less than half-lane)	Use a machine equipped with supplemental water sprays designed to suppress dust. Water must be combined with a surfactant. Operate and maintain machine to minimize dust emissions.	None	None
Large drivable milling machines (half-lane and larger)	For cuts of any depth on asphalt only. Use machine equipped with exhaust ventilation on drum enclosure and supplemental water sprays designed to suppress dust. Operate and maintain machine to minimize dust emissions. For cuts of four inches in depth or less on any substrate. Use machine equipped with	None	None

Equipment/Task	Engineering and Work Practice Control Methods	Required Respiratory Protection and Minimum Assigned Protection Factor (APF) ≤ 4 Hours/Shift Exposure	Required Respiratory Protection and Minimum Assigned Protection Factor (APF) > 4 Hours/Shift Exposure
	exhaust ventilation on drum enclosure and supplemental water sprays designed to suppress dust. Operate and maintain machine to minimize dust emissions.		
	Or		
	Use a machine equipped with supplemental water spray designed to suppress dust. Water must be combined with a surfactant. Operate and maintain machine to minimize dust emissions.	None	None
Crushing machines	Use equipment designed to deliver water spray or mist for dust suppression at crusher and other points where dust is generated (e.g., hoppers, conveyers, sieves/sizing or vibrating components, and discharge points). Operate and maintain machine in accordance with manufacturer's instructions to minimize dust emissions. Use a ventilated booth that provides fresh, climate-controlled air to the operator, or a remote-control station.	None	None
Heavy equipment and utility vehicles used to abrade or fracture silica-containing materials (e.g., hoe-ramming, rock ripping) or used during demolition activities involving silica-containing materials	Operate equipment from within an enclosed cab	None	None
	Or		
	When the equipment operator is the only employee engaged in the task, operate equipment from within an enclosed cab.	None	None

When implementing the control measures specified in Table 1, Company shall:

- For tasks performed indoors or in enclosed areas, provide a means of exhaust as needed to minimize the accumulation of visible airborne dust;
- For tasks performed using wet methods, apply water at flow rates sufficient to minimize release of visible dust;

- For measures implemented that include an enclosed cab or booth, ensure that the enclosed cab or booth:

    - Is maintained as free as practicable from settled dust;

    - Has door seals and closing mechanisms that work properly;

    - Has gaskets and seals that are in good condition and working properly;

    - Is under positive pressure maintained through continuous delivery of fresh air;

    - Has intake air that is filtered through a filter that is 95% efficient in the 0.3-10.0 μm range (e.g., MERV-16 or better); and

    - Has heating and cooling capabilities.

Where an employee performs more than one task on Table 1 during a work shift, and the total duration of all tasks combined is more than four hours, the required respiratory protection for each task is the respiratory protection specified for more than four hours per shift. If the total duration of all tasks on Table 1 combined is less than four hours, the required respiratory protection for each task is the respiratory protection specified for less than four hours per shift.

Alternative Exposure Control Methods

For tasks not listed in Table 1, or where Company does not fully and properly implement the engineering controls, work practices, and respiratory protection described in Table 1:

- **Permissible Exposure Limit (PEL)** - Company shall ensure that no employee is exposed to an airborne concentration of respirable crystalline silica in excess of 50 μg/m3, calculated as an 8-hour TWA.

- **Exposure Assessment** - Company shall assess the exposure of each employee who is or may reasonably be expected to be exposed to respirable crystalline silica at or above the action level in accordance with either the performance option outlined below or the scheduled monitoring option outlined below.

    - **Performance Option** - Company shall assess the 8-hour TWA exposure for each employee on the basis of any combination of air monitoring data or objective data sufficient to accurately characterize employee exposures to respirable crystalline silica.

    - **Scheduled Monitoring Option** - Company shall perform initial monitoring to assess the 8-hour TWA exposure for each employee on the basis of one or more personal breathing zone air samples that reflect the exposures of employees on each use, for each job classification, in each work area. Where several employees perform the same tasks on the same shift and in the same work area, Company may sample a representative fraction of these employees in order to meet this

requirement. In representative sampling, the employer shall sample the employee(s) who are expected to have the highest exposure to respirable crystalline silica.

- If initial monitoring indicates that employee exposures are below the action level, Company may discontinue monitoring for those employees whose exposures are represented by such monitoring.

- Where the most recent exposure monitoring indicates that employee exposures are at or above the action level but at or below the PEL, Company shall repeat such monitoring within six months of the most recent monitoring.

- Where the most recent exposure monitoring indicates that employee exposures are above the PEL, Company shall repeat such monitoring within three months of the most recent monitoring.

- Where the most recent (non-initial) exposure monitoring indicates that employee exposures are below the action level, Company shall repeat such monitoring within six months of the most recent monitoring until two consecutive measurements, taken seven or more days apart, are below the action level, at which time the employer may discontinue monitoring for those employees whose exposures are represented by such monitoring.

- **Reassessment of Exposures** - Company shall reassess exposures whenever a change in the production, process, control equipment, personnel, or work practices may reasonably be expected to result in new or additional exposures at or above the action level, or when the employer has any reason to believe that new or additional exposures at or above the action level have occurred.

Methods of Sample Analysis

Company shall ensure that all industrial hygiene monitoring samples collected are evaluated by a laboratory that analyzes air samples for respirable crystalline silica in accordance with NIOSH Analytical Methods.

Employee Notification of Assessment Results

Within five working days after completing an exposure assessment, Company shall individually notify each affected employee in writing of the results of that assessment or post the results in an appropriate location accessible to all affected employees.

Whenever an exposure assessment indicates that employee exposure is above the PEL, Company shall describe in the written notification the corrective action being taken to reduce employee exposure to or below the PEL.

Observation of Monitoring

Where air monitoring is performed to comply with the requirements of this program, Company shall provide affected employees or their designated representatives an opportunity to observe any monitoring of employee exposure to respirable crystalline silica.

When observation of monitoring requires entry into an area where the use of protective clothing or equipment is required for any workplace hazard, the employer shall provide the observer with protective clothing and equipment at no cost and shall ensure that the observer uses such clothing and equipment.

Methods of Compliance

Engineering and Work Practice Controls - Company shall use engineering and work practice controls to reduce and maintain employee exposure to respirable crystalline silica to or below the PEL, unless Company can demonstrate that such controls are not feasible. Wherever such feasible engineering and work practice controls are not sufficient to reduce employee exposure to or below the PEL, Company shall nonetheless use them to reduce employee exposure to the lowest feasible level and shall supplement them with the use of respiratory protection, when required.

Abrasive Blasting - Company shall comply with other OSHA standards, when applicable, such as 29 CFR 1926.57 (Ventilation), where abrasive blasting is conducted using crystalline silica-containing blasting agents, or where abrasive blasting is conducted on substrates that contain crystalline silica.

Respirable Crystalline Silica Respiratory Protection

Where respiratory protection is required by program, Company must provide each employee an appropriate respirator that complies with the requirements of this paragraph and 29 CFR 1910.134. Respiratory protection is required:

- Where specified by Table 1; or
- For tasks not listed in Table 1, or where Company does not fully and properly implement the engineering controls, work practices, and respiratory protection described in Table 1:
- Where exposures exceed the PEL during periods necessary to install or implement feasible engineering and work practice controls;
- Where exposures exceed the PEL during tasks, such as certain maintenance and repair tasks, for which engineering and work practice controls are not feasible; and
- During tasks for which an employer has implemented all feasible engineering and work practice controls and such controls are not sufficient to reduce exposures to or below the PEL.

Respirable Crystalline Silica Respiratory Protection Program

Where respirator use is required by this program, Company shall institute a respiratory protection program in accordance with 29 CFR 1910.134.

Specified Exposure Control Methods

For the tasks listed in Table 1 in paragraph (c) of this section, if Company fully and properly implements the engineering controls, work practices, and respiratory protection described in Table 1, Company shall be in compliance with OSHA 29 CHR 1926.1153 with regard to exposure to respirable crystalline silica.

Housekeeping

Company shall not allow dry sweeping or dry brushing where such activity could contribute to employee exposure to respirable crystalline silica unless wet sweeping, HEPA-filtered vacuuming or other methods that minimize the likelihood of exposure are not feasible.

Company shall not allow compressed air to be used to clean clothing or surfaces where such activity could contribute to employee exposure to respirable crystalline silica unless:

- The compressed air is used in conjunction with a ventilation system that effectively captures the dust cloud created by the compressed air; or
- No alternative method is feasible.

Written Exposure Control Plan

Company shall establish and implement a written exposure control plan that contains at least the following elements:

- A description of the tasks in the workplace that involve exposure to respirable crystalline silica;
- A description of the engineering controls, work practices, and respiratory protection used to limit employee exposure to respirable crystalline silica for each task;
- A description of the housekeeping measures used to limit employee exposure to respirable crystalline silica; and
- A description of the procedures used to restrict access to work areas, when necessary, to minimize the number of employees exposed to respirable crystalline silica and their level of exposure, including exposures generated by other employers or sole proprietors.
- Company shall review and evaluate the effectiveness of the written exposure control plan at least annually and update it as necessary.
- Company shall make the written exposure control plan readily available for examination and copying, upon request, to each employee covered by this section, their designated representatives, the Assistant Secretary and the Director.
- Company shall designate a competent person to make frequent and regular inspections of job sites, materials, and equipment to implement the written exposure control plan.

Medical Surveillance

Company shall make medical surveillance available at no cost to the employee, and at a reasonable time and place, for each employee who will be required under this section to use a respirator for 30 or more days per year.

Company shall ensure that all medical examinations and procedures required by this section are performed by a PLHCP as defined above.

Initial Examination - Company shall make available an initial (baseline) medical examination within 30 days after initial assignment, unless the employee has received a medical examination that meets the requirements of this section within the last three years. The examination shall consist of:

- A medical and work history, with emphasis on: Past, present, and anticipated exposure to respirable crystalline silica, dust, and other agents affecting the respiratory system; any history of respiratory system

dysfunction, including signs and symptoms of respiratory disease (e.g., shortness of breath, cough, wheezing); history of tuberculosis; and smoking status and history;

- A physical examination with special emphasis on the respiratory system;

- A chest X-ray (a single posteroanterior radiographic projection or radiograph of the chest at full inspiration recorded on either film (no less than 14 x 17 inches and no more than 16 x 17 inches) or digital radiography systems), interpreted and classified according to the International Labor Office (ILO) International Classification of Radiographs of Pneumoconiosis by a NIOSH-certified B Reader;

- A pulmonary function test to include forced vital capacity (FVC) and forced expiratory volume in one second (FEV1) and FEV1/FVC ratio, administered by a spirometry technician with a current certificate from a NIOSH-approved spirometry course;

- Testing for latent tuberculosis infection; and

- Any other tests deemed appropriate by the PLHCP.

Periodic Examinations - Company shall make available medical examinations at least every three years, or more frequently if recommended by the PLHCP.

Information Provided to the PLHCP - Company shall ensure that the examining PLHCP has a copy of this standard, and shall provide the PLHCP with the following information:

- A description of the employee's former, current, and anticipated duties as they relate to the employee's occupational exposure to respirable crystalline silica;

- The employee's former, current, and anticipated levels of occupational exposure to respirable crystalline silica;

- A description of any personal protective equipment used or to be used by the employee, including when and for how long the employee has used or will use that equipment; and

- Information from records of employment-related medical examinations previously provided to the employee and currently within the control of Company

PLHCP's Written Medical Report for the Employee - Company shall ensure that the PLHCP explains to the employee the results of the medical examination and provides each employee with a written medical report within 30 days of each medical examination performed. The written report shall contain:

- A statement indicating the results of the medical examination, including any medical condition(s) that would place the employee at increased risk of material impairment to health from exposure to respirable crystalline silica and any medical conditions that require further evaluation or treatment;

- Any recommended limitations on the employee's use of respirators;

- Any recommended limitations on the employee's exposure to respirable crystalline silica; and

- A statement that the employee should be examined by a specialist if the chest X-ray provided is classified as 1/0 or higher by the B Reader, or if referral to a specialist is otherwise deemed appropriate by the PLHCP.

PLHCP's Written Medical Opinion for Company

Company shall obtain a written medical opinion from the PLHCP within 30 days of the medical examination. The written opinion shall contain only the following:

- The date of the examination;
- A statement that the examination has met the requirements of this section; and
- Any recommended limitations on the employee's use of respirators.

If the employee provides written authorization, the written opinion shall also contain either or both of the following:

- Any recommended limitations on the employee's exposure to respirable crystalline silica;
- A statement that the employee should be examined by a specialist if the chest X-ray is classified as 1/0 or higher by the B Reader, or if referral to a specialist is otherwise deemed appropriate by the PLHCP.

Company shall ensure that each employee receives a copy of the written medical opinion within 30 days of each medical examination performed.

Additional Examinations

If the PLHCP's written medical opinion indicates that an employee should be examined by a specialist, the employer shall make available a medical examination by a specialist within 30 days after receiving the PLHCP's written opinion.

Company shall ensure that the examining specialist is provided with all of the information that the employer is obligated to provide to the PLHCP.

Company shall ensure that the specialist explains to the employee the results of the medical examination and provides each employee with a written medical report within 30 days of the examination.

Company shall obtain a written opinion from the specialist within 30 days of the medical examination.

Communication of Respirable Crystalline Silica Hazards to Employees

Hazard Communication - Company shall include respirable crystalline silica in the program established to comply with the hazard communication standard (HCS) (29 CFR 1910.1200). Company shall ensure that each employee has access to labels on containers of crystalline silica and safety data sheets and is trained in accordance with the provisions of HCS and this program. Company shall ensure that at least the following hazards are addressed: Cancer, lung effects, immune system effects, and kidney effects.

Employee Information and Training

Company shall ensure that each employee covered by this program can demonstrate knowledge and understanding of at least the following:

- The health hazards associated with exposure to respirable crystalline silica;
- Specific tasks in the workplace that could result in exposure to respirable crystalline silica;
- Specific measures the employer has implemented to protect employees from exposure to respirable crystalline silica, including engineering controls, work practices, and respirators to be used;
- The contents of this section;
- The identity of the competent person designated by the employer; and
- The purpose and a description of the medical surveillance program required by this program.

Recordkeeping

Air Monitoring Data - Company shall make and maintain an accurate record of all exposure measurements taken to assess employee exposure to respirable crystalline silica, as prescribed in this program.

This record shall include at least the following information:

- The date of measurement for each sample taken;
- The task monitored;
- Sampling and analytical methods used;
- Number, duration, and results of samples taken;
- Identity of the laboratory that performed the analysis;
- Type of personal protective equipment, such as respirators, worn by the employees monitored; and
- Name and job classification of all employees represented by the monitoring, indicating which employees were monitored.

Company shall ensure that exposure records are maintained and made available in accordance with OSHA 29 CFR 1910.1020 – Employee Medical Records.

Objective Data

Company shall make and maintain an accurate record of all objective data relied upon to comply with the requirements of this program.

This record shall include at least the following information:

- The crystalline silica-containing material in question;
- The source of the objective data;
- The testing protocol and results of testing;
- A description of the process, task, or activity on which the objective data were based; and
- Other data relevant to the process, task, activity, material, or exposures on which the objective data were based.

Company shall ensure that objective data are maintained and made available in accordance with OSHA 29 CFR 1910.1020 – Employee Medical Records.

Medical Surveillance

Company shall make and maintain an accurate record for each employee covered by medical surveillance.

The record shall include the following information about the employee:

- Name;
- A copy of the PLHCPs' and specialists' written medical opinions; and
- A copy of the information provided to the PLHCPs and specialists.

Company shall ensure that medical records are maintained and made available in accordance with OSHA 29 CFR 1910.1020 – Employee Medical Records.

Rigging Material Handling Program

The purpose of this training program is to ensure a safe and incident free lifting operations. All employees performing rigging operations are to receive rigging training. This document covers the Company's employees and contractors and shall be used when performing rigging.

Definitions

Rigging – the art or process of safely attaching a load to a hook by means of adequately rated and properly applied slings and related hardware.

Qualified Rigger – any person who attaches or detaches lifting equipment that has successfully completed training meeting the requirements set forth by American Petroleum Institute's Recommended Practice 2D 5th Edition (API RP-2D 5th Edition).

Key Responsibilities

The Safety Team shall determine if this program is required for regulatory compliance within the applicable region. If this program is deemed necessary, the Safety Team shall determine which employees within the region is required to receive this training. The Safety Team shall select a training facility or use an in-house qualified trainer to supply the training.

The supervisor shall assist the Safety Team in the tasks described above. The supervisor shall verify that each of their employees have the proper training before those employees report to duty.

Employees shall assist their supervisor in tracking required training and follow safe rigging practices. The employee shall monitor all expiration dates pertaining to his/her required training and notify his/her supervisor in advance of any nearing expiration dates.

Only qualified rigger trained personnel can attach or detach lifting equipment to loads or lifting loads.

General

Only qualified riggers are allowed to attach any loads to a lifting hook and only qualified operators are allowed to operate a crane while engaged in lifting operations.

Material Handling

- Rigging equipment shall be inspected to ensure it is safe. Rigging equipment for material handling shall be inspected prior to use and on each use and as necessary during its use to ensure that equipment is safe.
- Defective rigging equipment shall not be used and tagged out of service.
- Rigging equipment shall not be loaded beyond its recommended safe working load and the capacity tag shall be attached to the rigging.
- Rigging equipment not in use shall be removed from the immediate work area so as not to present a hazard to employees.
- Non-conductive tag lines shall be used unless their use creates an unsafe condition.
- Hooks on overhaul ball assemblies, lower load blocks, or other attachment assemblies shall be a type that can be closed and locked, eliminating the hook throat opening. Alternatively, an alloy anchor type shackle with a bolt, nut and retaining pin may be used.

- All employees shall be kept clear of loads about to be lifted and of suspended loads. No employee shall be allowed under a suspended load.

Training and Education

A Qualified Rigger shall successfully complete an approved Rigging Training Course. To successfully complete an approved Rigging Training Course, the Company employee must verify that they have gained knowledge through participating in classroom lectures, participating with hands-on training, and then successfully passing a written exam. Once the employee successfully completes the course, a Rigger Card will be issued to that individual. During the classroom lectures, hands-on training and written exam the Company employee shall display their competency in the following topics:

- The selection of proper hardware (eye bolts, shackles, hooks, wire rope products, synthetic slings, chain slings, etc.) for the correct application (weight, hitches, angles, temperatures, center of gravity, etc.).
- The inspection of the selected hardware before, during and after the lift.
- The proper methods of securing the load, attaching the load to the hook, lifting the load, handling of the load during the movement of the load, and lowering and placement of load.
- The proper storage of the rigging equipment. All Company employees shall re-certify their "qualified rigger" training on a four (4) year basis.

Road Construction Work Zone Safety Program

All Company project sites shall comply with the provisions of the Manual on Uniform Traffic Control Devices (MUTCD).

MUTCD – The MUTCD defines the standards used by road managers nationwide to install and maintain traffic control devices on all public streets, highways, bikeways, and private roads open to public travel. The MUTCD is published by the Federal Highway Administration (FHWA) under 23 Code of Federal Regulations (CFR), Part 655, Subpart F.

The MUTCD, which has been administered by the FHWA since 1971, is a compilation of national standards for all traffic control devices, including road markings, highway signs, and traffic signals. It is updated periodically to accommodate the nation's changing transportation needs and address new safety technologies, traffic control tools and traffic management techniques. MUTCD is a free download available at https://mutcd.fhwa.dot.gov/ .

Traffic Control Action Items –

The following traffic control action items should be addressed on all Company project sites that must control vehicular traffic:

Planning – Every road construction project should have a transportation management plan. The plan should consist of a temporary traffic control plan to protect workers by safely conducting traffic around or through the work zone. You should also have a traffic control plan for inside the work zone that manages the flow of heavy equipment, construction vehicles, and workers. Each project should use the MUTCD as a basis and source material for the traffic control plan.

Properly Control Traffic – The work zone should consist of an advanced warning area with warning signs alerting motorists of upcoming changes in driving conditions, a transition area using traffic control devices for lane closures and traffic pattern shifts, a buffer area, the work area, and a termination area to allow traffic to resume back to normal and a sign indicating that the work zone has ended. All traffic control devices including cones, barrels, barriers, or signs should comply with the Federal Highway Administration’s MUTCD along with any State Agency requirements.

Create Separate Work Areas – Road construction work zones are busy areas usually with several work activities taking place at the same time. To avoid accidents, use cones, barrels, and barriers to clearly delineate specific areas of the work zone such as material storage, areas where heavy equipment is being used, vehicle parking, and safe areas for workers on foot to move about in.

Wear Proper Safety Equipment – Proper safety equipment should be worn by all personnel inside the work zone. Personal protective equipment including hard hats, steel-toed boots, highly visible clothing, and, depending on the noise levels, hearing protection. **Company** requires the use of ANSI Class 2 High Visibility Clothing and/or vests.

All PPE should meet or exceed the American National Standards Institute's (ANSI) developed standards. All highly visible clothing whether it's a vest, jacket, or shirt should be bright fluorescent orange or lime/yellow and have visible reflective material, especially if working at night, and should meet ANSI Class 3 standards.

Be Aware of Your Surroundings – Regardless of what your job duties entail in the work zone, you should always be mindful of what's going on around you. Avoid walking behind any vehicles that may be backing up or into the swing radius of heavy equipment.

Whenever possible, face traffic while inside the work zone or have a spotter available when your back is turned. Spotters should also be used to monitor the movement of vehicles and heavy equipment inside the work zone in addition to monitoring traffic to alert workers to any potential dangers. Trained and equipped Signal Persons and Signaling Devices will be used to assist in alerting motorists to the dangers of the work zone.

Avoid Blind Spots – Vehicles and heavy equipment are constantly moving about inside the work zone including dump trucks, compactors, pavement planers, excavators, pavers, and rollers. Operators should ensure that all mirrors and visual aid devices are attached and operating properly including backup alarms and lights. If you are on foot and working near these machines while in operation, remember that the driver has a limited line of sight. Always stay in visual contact with the driver. A good rule of thumb to follow is that if you can't see them then they probably don't see you.

Competent Person(s) – A competent person should be on the jobsite whenever work is being performed. Per OSHA, a competent person is someone "capable of identifying existing and predictable hazards in the surroundings, or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has the authorization to take prompt corrective measures to eliminate them." A competent person is needed to conduct hazard assessments and regular inspections of the worksite.

A competent person is also needed to select the appropriate class of PPE to be used by workers and to approve the appropriate types of traffic control devices. Workers should report any unsafe hazards or equipment to the competent person assigned to the work zone so they can be corrected immediately.

Start Each Workday with a Safety Meeting – In addition to ensuring that all personnel at the jobsite have the proper training required, it is also a good idea to conduct a safety meeting before work begins. Since conditions can change greatly from day to day in the work zone workers should be briefed on the work activity scheduled each day and notified of all potential hazards and the hazard control methods that will be employed to protect workers. This is also a good time to ensure that all workers have and are wearing the proper PPE required for the work being performed.

Have a Site-Specific Safety Program – Every road construction project is different and each work zone has its own unique hazards and challenges so creating a safety program geared specifically for the site can go a long way in preventing accidents. The site-specific safety program should include identifying all hazards and plans to control and mitigate them, schedules to routinely inspect all

equipment and material, a plan for first aid and emergency medical care in the event of an accident, and safety training schedules for all employees.

- against falling from the deck load.

Scaffolds Program

This program applies to all scaffolds used in Company workplaces. It does not apply to crane or derrick suspended personnel platforms. The criteria for aerial lifts are set out exclusively in the Arial Lift Section of this Safety Program.

Definitions

Adjustable Suspension Scaffold – a suspension scaffold equipped with a hoist(s) that can be operated by an employee(s) on the scaffold.

Bearer (Putlog) - a horizontal transverse scaffold member (which may be supported by ledgers or runners) upon which the scaffold platform rests, and which joins scaffold uprights, posts, poles, and similar members.

Boatswains' Chair - a single-point adjustable suspension scaffold consisting of a seat or sling designed to support one employee in a sitting position.

Body Harness - a design of straps which may be secured about the employee in a manner to distribute the fall arrest forces over at least the thighs, pelvis, waist, chest, and shoulders, with means for attaching it to other components of a personal fall arrest system. Brace means a rigid connection that holds one scaffold member in a fixed position with respect to another member, or to a building or structure.

Bricklayers' Square Scaffold - a supported scaffold composed of framed squares which support a platform.

Carpenters' Bracket Scaffold - a supported scaffold consisting of a platform supported by brackets attached to building or structural walls.

Catenary Scaffold - a suspension scaffold consisting of a platform supported by two essentially horizontal and parallel ropes attached to structural members of a building or other structure. Additional support may be provided by vertical pickups.

Chimney Hoist - a multi-point adjustable suspension scaffold used to provide access to work inside chimneys. (See Multi-point adjustable "suspension scaffold.")

Cleat - a structural block used at the end of a platform to prevent the platform from slipping off its supports. Cleats are also used to provide footing on sloped surfaces such as crawling boards.

Competent Person – one who can identify existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

Continuous Run Scaffold (Run Scaffold) - a two-point or multi-point adjustable suspension scaffold constructed using a series of interconnected braced scaffold members or supporting structures erected to form a continuous scaffold.

Coupler - a device for locking together the tubes of a tube and coupler scaffold.

Crawling Board (Chicken Ladder) - a supported scaffold consisting of a plank with cleats spaced and secured to provide footing, for use on sloped surfaces such as roofs.

Deceleration Device - any mechanism, such as a rope grab, rip-stitch lanyard, specially woven lanyard, tearing or deforming lanyard, or automatic self-retracting lifeline lanyard, which dissipates a substantial amount of energy during a fall arrest or limits the energy imposed on an employee during fall arrest.

Double Pole (Independent Pole) Scaffold - a supported scaffold consisting of a platform(s) resting on cross beams (bearers) supported by ledgers and a double row of uprights independent of support (except ties, guys, braces) from any structure.

Equivalent – alternative designs, materials, or methods to protect against a hazard which Company can demonstrate will provide an equal or greater degree of safety for employees than the methods, materials or designs specified in the OSHA Regulation or applicable National Consensus Standard.

Exposed Power Lines - electrical power lines which are accessible to employees, and which are not shielded from contact. Such lines do not include extension cords or power tool cords.

Eye or Eye Splice - a loop with or without a thimble at the end of a wire rope.

Fabricated Decking and Planking - manufactured platforms made of wood (including laminated wood, and solid sawn wood planks), metal or other materials.

Fabricated Frame Scaffold (Tubular Welded Frame Scaffold) - a scaffold consisting of a platform(s) supported on fabricated end frames with integral posts, horizontal bearers, and intermediate members.

Failure - load refusal, breakage, or separation of component parts. Load refusal is the point where the ultimate strength is exceeded.

Float (Ship) Scaffold - a suspension scaffold consisting of a braced platform resting on two parallel bearers and hung from overhead supports by ropes of fixed length.

Form Scaffold – a supported scaffold consisting of a platform supported by brackets attached to formwork.

Guardrail System - a vertical barrier, consisting of, but not limited to, top rails, mid-rails, and posts, erected to prevent employees from falling off a scaffold platform or walkway to lower levels.

Hoist – a manual or power-operated mechanical device to raise or lower a suspended scaffold.

Horse Scaffold - a supported scaffold consisting of a platform supported by construction horses (sawhorses). Horse scaffolds constructed of metal are sometimes known as **Trestle Scaffolds**.

Interior Hung Scaffold - a suspension scaffold consisting of a platform suspended from the ceiling or roof structure by fixed length supports.

Ladder Jack Scaffold – a supported scaffold consisting of a platform resting on brackets attached to ladders.

Ladder Stand – a mobile, fixed-size, self-supporting ladder consisting of a wide flat tread ladder in the form of stairs.

Landing – a platform at the end of a flight of stairs.

Large Area Scaffold – a pole scaffold, tube and coupler scaffold, systems scaffold, or fabricated frame scaffold erected over substantially the entire work area. For example: a scaffold erected over the entire floor area of a room.

Lean-To Scaffold - a supported scaffold which is kept erect by tilting it toward and resting it against a building or structure.

Lifeline - a component consisting of a flexible line that connects to an anchorage at one end to hang vertically (vertical lifeline), or that connects to anchorages at both ends to stretch horizontally (horizontal lifeline), and which serves as a means for connecting other components of a personal fall arrest system to the anchorage.

Lower Levels - areas below the level where the employee is located and to which an employee can fall. Such areas include, but are not limited to, ground levels, floors, roofs, ramps, runways, excavations, pits, tanks, materials, water, and equipment.

Masons' Adjustable Supported Scaffold (see "**Self-Contained Adjustable Scaffold**").

Masons' Multi-Point Adjustable Suspension Scaffold - a continuous run suspension scaffold designed and used for masonry operations.

Maximum Intended Load – the total load of all persons, equipment, tools, materials, transmitted loads, and other loads reasonably anticipated to be applied to a scaffold or scaffold component at any one time.

Mobile Scaffold - a powered or unpowered, portable, caster or wheel-mounted supported scaffold.

Multi-Level Suspended Scaffold – a two-point or multi-point adjustable suspension scaffold with a series of platforms at various levels resting on common stirrups.

Multi-Point Adjustable Suspension Scaffold - a suspension scaffold consisting of a platform(s) which is suspended by more than two ropes from overhead supports and equipped with means to raise and lower the platform to desired work levels. Such scaffolds include chimney hoists.

Needle Beam Scaffold - a platform suspended from needle beams.

Open Sides and Ends – the edges of a platform that are more than 14 inches (36 cm) away horizontally from a sturdy, continuous, vertical surface (such as a building wall) or a sturdy, continuous horizontal surface (such as a floor), or a point of access. Exception: For plastering and lathing operations the horizontal threshold distance is 18 inches (46 cm).

Outrigger - the structural member of a supported scaffold used to increase the base width of a scaffold to provide support for and increased stability of the scaffold.

Outrigger Beam (Thrust Out) - the structural member of a suspension scaffold or outrigger scaffold which provides support for the scaffold by extending the scaffold point of attachment to a point out and away from the structure or building.

Outrigger Scaffold - a supported scaffold consisting of a platform resting on outrigger beams (thrust outs) projecting beyond the wall or face of the building or structure, the inboard ends of which are secured inside the building or structure.

Overhand Bricklaying – the process of laying bricks and masonry units such that the surface of the wall to be jointed is on the opposite side of the wall from the mason, requiring the mason to lean over the wall to complete the work. It includes mason tending and electrical installation incorporated into the brick wall during the overhand bricklaying process.

Personal Fall Arrest System - a system used to arrest an employee's fall. It consists of an anchorage, connectors, a body harness and may include a lanyard, deceleration device, lifeline, or combinations of these.

Platform - a work surface elevated above lower levels. Platforms can be constructed using individual wood planks, fabricated planks, fabricated decks, and fabricated platforms.

Pole Scaffold (see definitions for "**Single-Pole Scaffold**" and "**Double (Independent) Pole Scaffold**").

Power Operated Hoist - a hoist which is powered by other than human energy.

Pump Jack Scaffold - a supported scaffold consisting of a platform supported by vertical poles and movable support brackets.

Qualified - one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his/her ability to solve or resolve problems related to the subject matter, the work, or the project.

Rated Load – the manufacturer's specified maximum load to be lifted by a hoist or to be applied to a scaffold or scaffold component.

Repair Bracket Scaffold – a supported scaffold consisting of a platform supported by brackets which are secured in place around the circumference or perimeter of a chimney, stack, tank, or other supporting structure by one or more wire ropes placed around the supporting structure.

Roof Bracket Scaffold - a rooftop supported scaffold consisting of a platform resting on angular-shaped supports.

Runner (Ledger or Ribbon) - the lengthwise horizontal spacing or bracing member which may support the bearers.

Scaffold - any temporary elevated platform (supported or suspended) and its supporting structure (including points of anchorage), used for supporting employees or materials or both.

Self-Contained Adjustable Scaffold - a combination supported and suspension scaffold consisting of an adjustable platform(s) mounted on an independent supporting frame(s) not a part of the object being worked on, and which is equipped with a means to permit the raising and lowering of the platform(s). Such systems include rolling roof rigs, rolling outrigger systems, and some masons' adjustable supported scaffolds.

Shore Scaffold - a supported scaffold which is placed against a building or structure and held in place with props.

Single-Point Adjustable Suspension Scaffold - a suspension scaffold consisting of a platform suspended by one rope from an overhead support and equipped with means to permit the movement of the platform to desired work levels.

Single-Pole Scaffold - a supported scaffold consisting of a platform(s) resting on bearers, the outside ends of which are supported on runners secured to a single row of posts or uprights, and the inner ends of which are supported on or in a structure or building wall.

Stair Tower (Scaffold Stairway/Tower) - a tower comprised of scaffold components and which contains internal stairway units and rest platforms. These towers are used to provide access to scaffold platforms and other elevated points such as floors and roofs.

Stall Load - the load at which the prime-mover of a power-operated hoist stalls or the power to the prime-mover is automatically disconnected.

Step, Platform, and Trestle Ladder Scaffold - a platform resting directly on the rungs of step ladders or trestle ladders.

Stilts - a pair of poles or similar supports with raised footrests, used to permit walking above the ground or working surface.

Stone Setters' Multi-Point Adjustable Suspension Scaffold - a continuous run suspension scaffold designed and used for stone setters' operations.

Supported Scaffold - one or more platforms supported by outrigger beams, brackets, poles, legs, uprights, posts, frames, or similar rigid support.

Suspension Scaffold - one or more platforms suspended by ropes or other non-rigid means from an overhead structure(s).

System Scaffold - a scaffold consisting of posts with fixed connection points that accept runners, bearers, and diagonals that can be interconnected at predetermined levels.

Tank Builders' Scaffold - a supported scaffold consisting of a platform resting on brackets that are either directly attached to a cylindrical tank or attached to devices that are attached to such a tank.

Top Plate Bracket Scaffold – a scaffold supported by brackets that hook over or are attached to the top of a wall. This type of scaffold is like a carpenters' bracket scaffolds and form scaffolds and is used in residential construction for setting trusses.

Tube and Coupler Scaffold - a supported or suspended scaffold consisting of a platform(s) supported by tubing, erected with coupling devices connecting uprights, braces, bearers, and runners.

Tubular Welded Frame Scaffold (see "**Fabricated Frame Scaffold**").

Two-Point Suspension Scaffold (Swing Stage) - a suspension scaffold consisting of a platform supported by hangers (stirrups) suspended by two ropes from overhead supports and equipped with means to permit the raising and lowering of the platform to desired work levels.

Unstable Objects - items whose strength, configuration, or lack of stability may allow them to become dislocated and shift and therefore may not properly support the loads imposed on them. Unstable objects do not constitute a safe base support for scaffolds, platforms, or employees. Examples include, but are not limited to, barrels, boxes, loose brick, and concrete blocks.

Vertical Pickup - a rope used to support the horizontal rope in catenary scaffolds.

Walkway - a portion of a scaffold platform used only for access and not as a work level.

Window Jack Scaffold - a platform resting on a bracket or jack which projects through a window opening.

Scaffold Capacity

Each scaffold and scaffold component shall be capable of supporting, without failure, its own weight and at least 4 times the maximum intended load applied or transmitted to it.

Direct connections to roofs and floors, and counterweights used to balance adjustable suspension scaffolds, shall be capable of resisting at least 4 times the tipping moment imposed by the scaffold operating at the rated load of the hoist, or 1.5 (minimum) times the tipping moment imposed by the scaffold operating at the stall load of the hoist, whichever is greater.

Each suspension rope, including connecting hardware, used on non-adjustable suspension scaffolds shall be capable of supporting, without failure, at least 6 times the maximum intended load applied or transmitted to that rope.

Each suspension rope, including connecting hardware, used on adjustable suspension scaffolds shall be capable of supporting, without failure, at least 6 times the maximum intended load applied or transmitted to that rope with the scaffold operating at either the rated load of the hoist, or 2 (minimum) times the stall load of the hoist, whichever is greater.

The stall load of any scaffold hoist shall not exceed 3 times its rated load.

Scaffolds shall be designed by a qualified person and shall be constructed and loaded in accordance with that design.

Scaffold Platform Construction

Each platform on all working levels of scaffolds shall be fully planked or decked between the front uprights and the guardrail supports as follows:

- Each platform unit (e.g., scaffold plank, fabricated plank, fabricated deck, or fabricated platform) shall be installed so that the space between adjacent units and the space between the platform and the uprights is no more than 1 inch (2.5 cm) wide, except where the employer can demonstrate that a wider space is necessary (for example, to fit around uprights when side brackets are used to extend the width of the platform).

- Where Company makes the demonstration that the platform shall be planked or decked as fully as possible and the remaining open space between the platform and the uprights shall not exceed 9½ inches (24.1 cm). **Exception:** The requirement to provide full planking or decking does not apply to platforms used solely as walkways or solely by employees performing scaffold erection or dismantling. In these situations, only the planking that the employer establishes is necessary to provide safe working conditions is required.

- Each scaffold platform and walkway shall be at least 18 inches (46 cm) wide.

- Each ladder jack scaffold, top plate bracket scaffold, roof bracket scaffold, and pump jack scaffold shall be at least 12 inches (30 cm) wide. There is no minimum width requirement for boatswains' chairs.

- Where scaffolds must be used in areas that Company can demonstrate are so narrow that platforms and walkways cannot be at least 18 inches (46 cm) wide, such platforms and walkways

shall be as wide as feasible, and employees on those platforms and walkways shall be protected from fall hazards using guardrails and/or personal fall arrest systems.

- The front edge of all platforms shall not be more than 14 inches (36 cm) from the face of the work unless guardrail systems are erected along the front edge and/or personal fall arrest systems are used to protect employees from falling.

- The maximum distance from the face for outrigger scaffolds shall be 3 inches (8 cm);

- The maximum distance from the face for plastering and lathing operations shall be 18 inches (46 cm).

- Each end of a platform, unless cleated or otherwise restrained by hooks or equivalent means, shall extend over the centerline of its support at least 6 inches (15 cm).

- Each end of a platform 10 feet or less in length shall not extend over its support more than 12 inches (30 cm) unless the platform is designed and installed so that the cantilevered portion of the platform is able to support employees and/or materials without tipping or has guardrails which block employee access to the cantilevered end.

- Each platform greater than 10 feet in length shall not extend over its support more than 18 inches (46 cm), unless it is designed and installed so that the cantilevered portion of the platform is able to support employees without tipping or has guardrails which block employee access to the cantilevered end.

- On scaffolds where scaffold planks are abutted to create a long platform, each abutted end shall rest on a separate support surface. This provision does not preclude the use of common support members, such as "T" sections, to support abutting planks, or hook-on platforms designed to rest on common supports.

- On scaffolds where platforms are overlapped to create a long platform, the overlap shall occur only over supports, and shall not be less than 12 inches (30 cm) unless the platforms are nailed together or otherwise restrained to prevent movement.

- At all points of a scaffold where the platform changes direction, such as turning a corner, any platform that rests on a bearer at an angle other than a right angle shall be laid first, and platforms which rest at right angles over the same bearer shall be laid second, on top of the first platform.

- Wood platforms shall not be covered with opaque finishes, except that platform edges may be covered or marked for identification. Platforms may be coated periodically with wood preservatives, fire-retardant finishes, and slip-resistant finishes; however, the coating may not obscure the top or bottom wood surfaces.

- Scaffold components manufactured by different manufacturers shall not be intermixed unless the components fit together without force and the scaffold's structural integrity is maintained by the

user. Scaffold components manufactured by different manufacturers shall not be modified to intermix them unless a competent person determines the resulting scaffold is structurally sound.

- Scaffold components made of dissimilar metals shall not be used together unless a competent person has determined that galvanic action will not reduce the strength of any component to a level below that required.

Criteria for Supported Scaffolds

Supported scaffolds with a height to base width (including outrigger supports, if used) ratio of more than four to one (4:1) shall be restrained from tipping by guying, tying, bracing, or equivalent means, as follows:

- Guys, ties, and braces shall be installed at locations where horizontal members support both inner and outer legs.

- Guys, ties, and braces shall be installed according to the scaffold manufacturer's recommendations or at the closest horizontal member to the 4:1 height and be repeated vertically at locations of horizontal members every 20 feet (6.1 m) or less thereafter for scaffolds 3 feet (0.91 m) wide or less, and every 26 feet (7.9 m) or less thereafter for scaffolds greater than 3 feet (0.91 m) wide. The top guy, tie, or brace of completed scaffolds shall be placed no further than the 4:1 height from the top. Such guys, ties and braces shall be installed at each end of the scaffold and at horizontal intervals not to exceed 30 feet (9.1 m) (measured from one end [not both] towards the other).

- Ties, guys, braces, or outriggers shall be used to prevent the tipping of supported scaffolds in all circumstances where an eccentric load, such as a cantilevered work platform, is applied or is transmitted to the scaffold.

- Supported scaffold poles, legs, posts, frames, and uprights shall bear on base plates and mud sills or other adequate firm foundation.

- Footings shall be level, sound, rigid, and capable of supporting the loaded scaffold without settling or displacement.

- Unstable objects shall not be used to support scaffolds or platform units.

- Unstable objects shall not be used as working platforms.

- Front-end loaders and similar pieces of construction equipment shall not be used to support scaffold platforms unless they have been specifically designed by the manufacturer for such use.

- Fork-lifts shall not be used to support scaffold platforms unless the entire platform is attached to the fork and the fork-lift is not moved horizontally while the platform is occupied. An operator

is required to be always present in the operator's cockpit of the forklift while personnel are present on the scaffold.

- Supported scaffold poles, legs, posts, frames, and uprights shall be plumb and braced to prevent swaying and displacement.

Criteria for Suspension Scaffolds

- All suspension scaffold support devices, such as outrigger beams, cornice hooks, parapet clamps, and similar devices, shall rest on surfaces capable of supporting at least 4 times the load imposed on them by the scaffold operating at the rated load of the hoist (or at least 1.5 times the load imposed on them by the scaffold at the stall capacity of the hoist, whichever is greater).

- Suspension scaffold outrigger beams, when used, shall be made of structural metal or equivalent strength material, and shall be restrained to prevent movement.

- The inboard ends of suspension scaffold outrigger beams shall be stabilized by bolts or other direct connections to the floor or roof deck, or they shall have their inboard ends stabilized by counterweights, except masons' multi-point adjustable suspension scaffold outrigger beams shall not be stabilized by counterweights.

- Before the scaffold is used, direct connections shall be evaluated by a competent person who shall confirm, based on the evaluation, that the supporting surfaces can support the loads to be imposed. In addition, masons' multi-point adjustable suspension scaffold connections shall be designed by an engineer experienced in such scaffold design.

- Counterweights shall be made of non-flowable material. Sand, gravel and similar materials that can be easily dislocated shall not be used as counterweights.

- Only those items specifically designed as counterweights shall be used to counterweight scaffold systems. Construction materials such as, but not limited to, masonry units and rolls of roofing felt, shall not be used as counterweights.

- Counterweights shall be secured by mechanical means to the outrigger beams to prevent accidental displacement.

- Counterweights shall not be removed from an outrigger beam until the scaffold is disassembled.

- Outrigger beams which are not stabilized by bolts or other direct connections to the floor or roof deck shall be secured by tiebacks.

- Tiebacks shall be equivalent in strength to the suspension ropes.

- Outrigger beams shall be placed perpendicular to its bearing support (usually the face of the building or structure). However, where the employer can demonstrate that it is not possible to

place an outrigger beam perpendicular to the face of the building or structure because of obstructions that cannot be moved, the outrigger beam may be placed at some other angle, provided opposing angle tiebacks are used.

- Tiebacks shall be secured to a structurally sound anchorage on the building or structure. Sound anchorages include structural members, but do not include standpipes, vents, other piping systems, or electrical conduit.

- Tiebacks shall be installed perpendicular to the face of the building or structure, or opposing angle tiebacks shall be installed. Single tiebacks installed at an angle are prohibited.

- Suspension scaffold outrigger beams shall be:

    - Provided with stop bolts or shackles at both ends;

    - Securely fastened together with the flanges turned out when channel iron beams are used in place of I-beams;

    - Installed with all bearing supports perpendicular to the beam center line;

    - Set and maintained with the web in a vertical position; and

    - When an outrigger beam is used, the shackle or clevis with which the rope is attached to the outrigger beam shall be placed directly over the center line of the stirrup.

- Suspension scaffold support devices such as cornice hooks, roof hooks, roof irons, parapet clamps, or similar devices shall be:

    - Made of steel, wrought iron, or materials of equivalent strength;

    - Supported by bearing blocks; and

    - Secured against movement by tiebacks installed at right angles to the face of the building or structure, or opposing angle tiebacks shall be installed and secured to a structurally sound point of anchorage on the building or structure. Sound points of anchorage include structural members, but do not include standpipes, vents, other piping systems, or electrical conduit.

- Tiebacks shall be equivalent in strength to the hoisting rope.

- When winding drum hoists are used on a suspension scaffold, they shall contain not less than four wraps of the suspension rope at the lowest point of scaffold travel. When other types of hoists are used, the suspension ropes shall be long enough to allow the scaffold to be lowered to the level below without the rope end passing through the hoist, or the rope end shall be configured or provided with means to prevent the end from passing through the hoist.

- The use of repaired wire rope as suspension rope is prohibited.

- Wire suspension ropes shall not be joined together except by eye splice thimbles connected with shackles or cover-plates and bolts.

- The load end of wire suspension ropes shall be equipped with proper size thimbles and secured by eye-splicing or equivalent means.

- Ropes shall be inspected for defects by a competent person prior to each work shift and after every occurrence which could affect a rope's integrity. Ropes shall be replaced if any of the following conditions exist:

    - Any physical damage which impairs the function and strength of the rope.

    - Kinks that might impair the tracking or wrapping of rope around the drum(s) or sheave(s).

    - Six randomly distributed broken wires in one rope lay or three broken wires in one strand in one rope lay.

    - Abrasion, corrosion, scrubbing, flattening, or peening causing loss of more than one-third of the original diameter of the outside wires.

    - Heat damage caused by a torch, or any damage caused by contact with electrical wires.

    - Evidence that the secondary brake has been activated during an overspeed condition and has engaged the suspension rope.

    - Swaged attachments or spliced eyes on wire suspension ropes shall not be used unless they are made by the wire rope manufacturer or a qualified person.

- When wire rope clips are used on suspension scaffolds:

    - There shall be a minimum of 3 wire rope clips installed, with the clips a minimum of 6 rope diameters apart;

    - Clips shall be installed according to the manufacturer's recommendations;

    - Clips shall be retightened to the manufacturer's recommendations after the initial loading;

    - Clips shall be inspected and retightened to the manufacturer's recommendations at the start of each work shift thereafter;

    - U-bolt clips shall not be used at the point of suspension for any scaffold hoist; and

  - When U-bolt clips are used, the U-bolt shall be placed over the dead end of the rope, and the saddle shall be placed over the live end of the rope.

- Suspension scaffold power-operated hoists and manual hoists shall be tested by a qualified testing laboratory.

- Gasoline-powered equipment and hoists shall not be used on suspension scaffolds.

- Gears and brakes of power-operated hoists used on suspension scaffolds shall be enclosed.

- In addition to the normal operating brake, suspension scaffold power-operated hoists and manually operated hoists shall have a braking device or locking pawl which engages automatically when a hoist makes either of the following uncontrolled movements: an instantaneous change in momentum or an accelerated overspeed.

- Manually operated hoists shall require a positive crank force to descend.

- Two-point and multi-point suspension scaffolds shall be tied or otherwise secured to prevent them from swaying, as determined to be necessary based on an evaluation by a competent person. Window cleaners' anchors shall not be used for this purpose.

- Devices whose sole function is to provide emergency escape and rescue shall not be used as working platforms. This provision does not preclude the use of systems which are designed to function both as suspension scaffolds and emergency systems.

Scaffold Access – When scaffold platforms are more than 2 feet (0.6 m) above or below a point of access, portable ladders, hook-on ladders, attachable ladders, stair towers (scaffold stairways/towers), stairway-type ladders (such as ladder stands), ramps, walkways, integral prefabricated scaffold access, or direct access from another scaffold, structure, personnel hoist, or similar surface shall be used. Cross braces shall not be used as a means of access.

Portable, Hook-On, and Attachable Ladders

- Portable, hook-on, and attachable ladders shall be positioned so as not to tip the scaffold;

- Hook-on and attachable ladders shall be positioned so that their bottom rung is not more than 24 inches (61 cm) above the scaffold supporting level;

- When hook-on and attachable ladders are used on a supported scaffold more than 35 feet (10.7 m) high, they shall have rest platforms at 35-foot (10.7 m) maximum vertical intervals.

- Hook-on and attachable ladders shall be specifically designed for use with the type of scaffold used;

- Hook-on and attachable ladders shall have a minimum rung length of 11½ inches (29 cm); and

- Hook-on and attachable ladders shall have uniformly spaced rungs with a maximum spacing between rungs of 16¾ inches.

Stairway-type ladders shall:

- Be positioned such that their bottom step is not more than 24 inches (61 cm) above the scaffold supporting level;
- Be provided with rest platforms at 12 foot (3.7 m) maximum vertical intervals;
- Have a minimum step width of 16 inches (41 cm), except that mobile scaffold stairway-type ladders shall have a minimum step width of 11½ inches (30 cm); and
- Have slip-resistant treads on all steps and landings.
- Stair Towers (scaffold stairway/towers) shall be positioned such that their bottom step is not more than 24 inches (61 cm.) above the scaffold supporting level.
- A stair-rail consisting of a top-rail and a mid-rail shall be provided on each side of each scaffold stairway.
- The top-rail of each stair-rail system shall also be capable of serving as a handrail unless a separate handrail is provided.
- Handrails, and top rails that serve as handrails, shall provide an adequate handhold for employees grasping them to avoid falling.
- Stair rail systems and handrails shall be surfaced to prevent injury to employees from punctures or lacerations, and to prevent snagging of clothing.
- The ends of stair rail systems and handrails shall be constructed so that they do not constitute a projection hazard.
- Handrails, and top rails that are used as handrails, shall be at least 3 inches (7.6 cm) from other objects.
- Stair rails shall be not less than 28 inches (71 cm) nor more than 37 inches (94 cm) from the upper surface of the stair rail to the surface of the tread, in line with the face of the riser at the forward edge of the tread.
- A landing platform at least 18 inches (45.7 cm) wide by at least 18 inches (45.7 cm) long shall be provided at each level.
- Each scaffold stairway shall be at least 18 inches (45.7 cm) wide between stair rails.

- Treads and landings shall have slip-resistant surfaces.
- Stairways shall be installed between 40 degrees and 60 degrees from the horizontal.
- Guardrails shall be provided on the open sides and ends of each landing.
- Riser height shall be uniform, within ¼ inch, (0.6 cm) for each flight of stairs. Greater variations in riser height are allowed for the top and bottom steps of the entire system, not for each flight of stairs.
- Tread depth shall be uniform, within ¼ inch, for each flight of stairs.

Ramps and Walkways

- Ramps and walkways 6 feet (1.8 m) or more above lower levels shall have guardrail systems.
- No ramp or walkway shall be inclined more than a slope of one (1) vertical to three (3) horizontal (20 degrees above the horizontal).
- If the slope of a ramp or a walkway is steeper than one (1) vertical in eight (8) horizontal, the ramp or walkway shall have cleats not more than fourteen (14) inches (35 cm) apart which are securely fastened to the planks to provide footing.

Integral prefabricated scaffold access frames shall:

- Be specifically designed and constructed for use as ladder rungs;
- Have a rung length of at least 8 inches (20 cm);
- Not be used as work platforms when rungs are less than 11½ inches in length, unless each affected employee uses fall protection, or a positioning device;
- Be uniformly spaced within each frame section;
- Be provided with rest platforms at 35-foot (10.7 m) maximum vertical intervals on all supported scaffolds more than 35 feet (10.7 m) high; and
- Have a maximum spacing between rungs of 16¾ inches (43 cm). Non-uniform rung spacing caused by joining end frames together is allowed, provided the resulting spacing does not exceed 16¾ inches (43 cm).
- Steps and rungs of ladder and stairway type access shall line up vertically with each other between rest platforms.

- Direct access to or from another surface shall be used only when the scaffold is not more than 14 inches (36 cm) horizontally and not more than 24 inches (61 cm) vertically from the other surface.

Access for employees erecting or dismantling supported scaffolds shall be in accordance with the following:

- Company shall provide safe means of access for each employee erecting or dismantling a scaffold where the provision of safe access is feasible and does not create a greater hazard. Company shall have a competent person determine whether it is feasible or would pose a greater hazard to provide, and have employees use a safe means of access. This determination shall be based on site conditions and the type of scaffold being erected or dismantled.

- Hook-on or attachable ladders shall be installed as soon as scaffold erection has progressed to a point that permits safe installation and use.

- When erecting or dismantling tubular welded frame scaffolds, (end) frames, with horizontal members that are parallel, level and are not more than 22 inches apart vertically may be used as climbing devices for access, provided they are erected in a manner that creates a usable ladder and provides good hand hold and foot space.

- Cross braces on tubular welded frame scaffolds shall not be used as a means of access or egress.

Scaffold Use

- Scaffolds and scaffold components shall not be loaded more than their maximum intended loads or rated capacities, whichever is less.

- The use of shore or lean-to scaffolds is prohibited.

- Scaffolds and scaffold components shall be inspected for visible defects by a competent person before each work shift, and after any occurrence which could affect a scaffold's structural integrity.

- Any part of a scaffold damaged or weakened shall be immediately repaired or replaced, braced to meet those provisions, or removed from service until repaired.

- Scaffolds shall not be moved horizontally while employees are on them unless they have been designed by a registered professional engineer specifically for such movement.

- The clearance between scaffolds and power lines shall be as follows:

- Scaffolds shall not be erected, used, dismantled, altered, or moved such that they or any conductive material handled on them might come closer to exposed and energized power lines than as follows:

Insulated Line Voltage	Minimum Distance	Alternatives
Less than 300 Volts	3 Feet	
300 Volts to 50 kv	10 Feet	
More than 50 kv	10 Feet plus 0.4 inches for each 1 kv over 50 kv	2 Times the length of the line insulator, but never less than 10 Feet

Uninsulated Line Voltage	Minimum Distance	Alternatives
Less than 50 kv	10 Feet	
More than 50 kv	10 Feet plus 0.4 inches for each 1 kv over 50 kv	2 Times the length of the line insulator, but never less than 10 Feet

- **Exception:** Scaffolds and materials may be closer to power lines than specified above where such clearance is necessary for performance of work, and only after the utility company, or electrical system operator, has been notified of the need to work closer and the utility company, or electrical system operator, has deenergized the lines, relocated the lines, or installed protective coverings to prevent accidental contact with the lines.

- Scaffolds shall be erected, moved, dismantled, or altered only under the supervision and direction of a competent person qualified in scaffold erection, moving, dismantling or alteration. Such activities shall be performed only by experienced and trained employees selected for such work by the competent person.

- Employees shall be prohibited from working on scaffolds covered with snow, ice, or other slippery material except as necessary for removal of such materials.

- Where swinging loads are being hoisted onto or near scaffolds such that the loads might contact the scaffold, tag lines or equivalent measures to control the loads shall be used.

- Suspension ropes supporting adjustable suspension scaffolds shall be of a diameter large enough to provide sufficient surface area for the functioning of brake and hoist mechanisms.

- Suspension ropes shall be shielded from heat-producing processes. When acids or other corrosive substances are used on a scaffold, the ropes shall be shielded, treated to protect against the corrosive substances, or shall be of a material that will not be damaged by the substance being used.

- Work on or from scaffolds is prohibited during storms or high winds unless a competent person has determined that it is safe for employees to be on the scaffold and those employees are protected by a personal fall arrest system or wind screens. Wind screens shall not be used unless the scaffold is secured against the anticipated wind forces imposed.

- Debris shall not be allowed to accumulate on platforms.

- Makeshift devices, such as but not limited to boxes and barrels, shall not be used on top of scaffold platforms to increase the working level height of employees.

- Ladders shall not be used on scaffolds to increase the working level height of employees, except on large area scaffolds where employers have satisfied the following criteria:

- When the ladder is placed against a structure which is not a part of the scaffold, the scaffold shall be secured against the sideways thrust exerted by the ladder;

- The platform units shall be secured to the scaffold to prevent their movement;

- The ladder legs shall be on the same platform or other means shall be provided to stabilize the ladder against unequal platform deflection, and

- The ladder legs shall be secured to prevent them from slipping or being pushed off the platform.

- Platforms shall not deflect more than 1⁄60 of the span when loaded.

- To reduce the possibility of welding current arcing through the suspension wire rope when performing welding from suspended scaffolds, the following precautions shall be taken, as applicable:

- An insulated thimble shall be used to attach each suspension wire rope to its hanging support (such as cornice hook or outrigger). Excess suspension wire rope and any additional independent lines from grounding shall be insulated;

- The suspension wire rope shall be covered with insulating material extending at least 4 feet (1.2 m) above the hoist. If there is a tail line below the hoist, it shall be insulated to prevent contact with the platform. The portion of the tail line that hangs free below the scaffold shall be guided or retained, or both, so that it does not become grounded;

- Each hoist shall be covered with insulated protective covers;

- In addition to a work lead attachment required by the welding process, a grounding conductor shall be connected from the scaffold to the structure. The size of this conductor shall be at least the size of the welding process work lead, and this conductor shall not be in series with the welding process or the work piece;

- If the scaffold grounding lead is disconnected at any time, the welding machine shall be shut off; and

- An active welding rod or uninsulated welding lead shall not be allowed to contact the scaffold or its suspension system.

Scaffold Fall Protection

- Each employee on a scaffold more than 10 feet (3.1 m) above a lower level shall be protected from falling to that lower level.

- **Note:** The fall protection requirements for employees installing suspension scaffold support systems on floors, roofs, and other elevated surfaces are set forth in the Fall Protection Section of this Safety Program.

- Each employee on a boatswains' chair, catenary scaffold, float scaffold, needle beam scaffold, or ladder jack scaffold shall be protected by a personal fall arrest system;

- Each employee on a single-point or two-point adjustable suspension scaffold shall be protected by both a personal fall arrest system and guardrail system;

- Each employee on a crawling board (chicken ladder) shall be protected by a personal fall arrest system, a guardrail system (with minimum 200-pound top rail capacity), or by a three-fourth inch (1.9 cm) diameter grabline or equivalent handhold securely fastened beside each crawling board;

- Each employee on a self-contained adjustable scaffold shall be protected by a guardrail system (with minimum 200-pound top rail capacity) when the platform is supported by the frame structure, and by both a personal fall arrest system and a guardrail system (with minimum 200-pound top rail capacity) when the platform is supported by ropes;

- Each employee on a walkway located within a scaffold shall be protected by a guardrail system (with minimum 200-pound top rail capacity) installed within 9½ inches (24.1 cm) of and along at least one side of the walkway.

- Each employee performing overhand bricklaying operations from a supported scaffold shall be protected from falling from all open sides and ends of the scaffold (except at the side next to the wall being laid) using a personal fall arrest system or guardrail system (with minimum 200-pound top rail capacity).

- For all scaffolds each employee shall be protected by using the use of personal fall arrest systems or guardrail systems or both.

- Company shall have a competent person determine the feasibility and safety of providing fall protection for employees erecting or dismantling supported scaffolds. Company is required to provide fall protection for employees erecting or dismantling supported scaffolds where the installation and use of such protection is feasible and does not create a greater hazard.

- Personal fall arrest systems used on scaffolds shall be attached by lanyard to a vertical lifeline, horizontal lifeline, or scaffold structural member. Vertical lifelines shall not be used when overhead components, such as overhead protection or additional platform levels, are part of a single-point or two-point adjustable suspension scaffold.

- When vertical lifelines are used, they shall be fastened to a fixed safe point of anchorage, shall be independent of the scaffold, and shall be protected from sharp edges and abrasion. Safe points of anchorage include structural members of buildings, but do not include standpipes, vents, other piping systems, electrical conduit, outrigger beams, or counterweights.

- When horizontal lifelines are used, they shall be secured to two or more structural members of the scaffold, or they may be looped around both suspension and independent suspension lines (on scaffolds so equipped) above the hoist and brake attached to the end of the scaffold. Horizontal lifelines shall not be attached only to the suspension ropes.

- When lanyards are connected to horizontal lifelines or structural members on a single-point or two-point adjustable suspension scaffold, the scaffold shall be equipped with additional independent support lines and automatic locking devices capable of stopping the fall of the scaffold in the event one or both suspension ropes fail. The independent support lines shall be equal in number and strength to the suspension ropes.

- Vertical lifelines, independent support lines, and suspension ropes shall not be attached to each other, nor shall they be attached to or use the same point of anchorage, nor shall they be attached to the same point on the scaffold or personal fall arrest system.

- Guardrail systems installed shall comply with the following provisions:

    - Guardrail systems shall be installed along all open sides and ends of platforms. Guardrail systems shall be installed before the scaffold is released for use by employees other than erection/dismantling crews.
    - The top edge height of top rails or equivalent member on supported scaffolds shall be installed between 38 inches (0.97 m) and 45 inches (1.2 m) above the platform surface. The top edge height on supported scaffolds on all suspended scaffolds where both a guardrail and a personal fall arrest system are required shall be between 36 inches (0.9 m) and 45 inches (1.2 m). When conditions warrant, the height of the top edge may exceed the 45-inch height, provided the guardrail system meets all other criteria.
    - When mid-rails, screens, mesh, intermediate vertical members, solid panels, or equivalent structural members are used, they shall be installed between the top edge of the guardrail system and the scaffold platform.
    - When mid-rails are used, they shall be installed at a height approximately midway between the top edge of the guardrail system and the platform surface.
    - When screens and mesh are used, they shall extend from the top edge of the guardrail system to the scaffold platform, and along the entire opening between the supports.
    - When intermediate members (such as balusters or additional rails) are used, they shall not be more than 19 inches (48 cm) apart.
    - Each top rail or equivalent member of a guardrail system shall be capable of withstanding, without failure, a force applied in any downward or horizontal direction at any point along its top edge of at least 100 pounds (445 n) for guardrail systems installed on single-point adjustable suspension scaffolds or two-point adjustable suspension scaffolds, and at least 200 pounds (890 n) for guardrail systems installed on all other scaffolds.

- Mid-rails, screens, mesh, intermediate vertical members, solid panels, and equivalent structural members of a guardrail system shall be capable of withstanding, without failure, a force applied in any downward or horizontal direction at any point along the mid-rail or other member of at least 75 pounds (333 n) for guardrail systems with a minimum 100 pound top rail capacity, and at least 150 pounds (666 n) for guardrail systems with a minimum 200 pound top rail capacity.
- Suspension scaffold hoists and non-walk-through stirrups may be used as end guardrails, if the space between the hoist or stirrup and the side guardrail or structure does not allow passage of an employee to the end of the scaffold.
- Guardrails shall be surfaced to prevent injury to an employee from punctures or lacerations, and to prevent snagging of clothing.
- The ends of all rails shall not overhang the terminal posts except when such overhang does not constitute a projection hazard to employees.
- Steel or plastic banding shall not be used as a top rail or mid-rail.
- Manila or plastic (or other synthetic) rope being used for top rails or mid-rails shall be inspected by a competent person as frequently as necessary to ensure that it continues to meet the strength requirements.
- Cross bracing is acceptable in place of a mid-rail when the crossing point of two braces is between 20 inches (0.5 m) and 30 inches (0.8 m) above the work platform or as a top rail when the crossing point of two braces is between 38 inches (0.97 m) and 48 inches (1.3 m) above the work platform. The end points at each upright shall be no more than 48 inches (1.3 m) apart.

Scaffold Falling Object Protection

In addition to wearing hardhats each employee on a scaffold shall be provided with additional protection from falling hand tools, debris, and other small objects through the installation of toe boards, screens, or guardrail systems, or through the erection of debris nets, catch platforms, or canopy structures that contain or deflect the falling objects. When the falling objects are too large, heavy, or massive to be contained or deflected by any of the above-listed measures, Company shall place such potential falling objects away from the edge of the surface from which they could fall and shall secure those materials as necessary to prevent their falling.

Where there is a danger of tools, materials, or equipment falling from a scaffold and striking employees below, the following provisions apply:

- The area below the scaffold to which objects can fall shall be barricaded, and employees shall not be permitted to enter the hazard area; or

- A toe board shall be erected along the edge of platforms more than 10 feet (3.1 m) above lower levels for a distance sufficient to protect employees below, except on float (ship) scaffolds where an edging of ¾ × 1½ inch (2 × 4 cm) wood or equivalent may be used in lieu of toe boards;

- Where tools, materials, or equipment are piled to a height higher than the top edge of the toe board, paneling or screening extending from the toe board or platform to the top of the guardrail shall be erected for a distance sufficient to protect employees below; or

- A guardrail system shall be installed with openings small enough to prevent passage of potential falling objects; or

- A canopy structure, debris net, or catch platform strong enough to withstand the impact forces of the potential falling objects shall be erected over the employees below.

Canopies, when used for falling object protection, shall comply with the following criteria:

- Canopies shall be installed between the falling object hazard and the employees.

- When canopies are used on suspension scaffolds for falling object protection, the scaffold shall be equipped with additional independent support lines equal in number to the number of points supported, and equivalent in strength to the strength of the suspension ropes.

- Independent support lines and suspension ropes shall not be attached to the same points of anchorage.

Where used, toe boards shall be:

- Capable of withstanding, without failure, a force of at least 50 pounds (222 n) applied in any downward or horizontal direction at any point along the toe board; and

- At least three and one-half inches (9 cm) high from the top edge of the toe board to the level of the walking/working surface. Toe boards shall be securely fastened in place at the outermost edge of the platform and have not more than ¼ inch (0.7 cm) clearance above the walking/working surface. Toe boards shall be solid or with openings not over one inch (2.5 cm) in the greatest dimension.

Scaffold Training Requirements

Company shall have each employee who performs work while on a scaffold trained by a person qualified in the subject matter to recognize the hazards associated with the type of scaffold being used and to understand the procedures to control or minimize those hazards. The training shall include the following areas, as applicable:

- The nature of any electrical hazards, fall hazards and falling object hazards in the work area;

- The correct procedures for dealing with electrical hazards and for erecting, maintaining, and disassembling the fall protection systems and falling object protection systems being used;

- The proper use of the scaffold, and the proper handling of materials on the scaffold;

- The maximum intended load and the load-carrying capacities of the scaffolds used; and

- Any other pertinent requirements of this subpart.

Company shall have each employee who is involved in erecting, disassembling, moving, operating, repairing, maintaining, or inspecting a scaffold trained by a competent person to recognize any hazards associated with the work in question. The training shall include the following topics, as applicable:

- The nature of scaffold hazards;
- The correct procedures for erecting, disassembling, moving, operating, repairing, inspecting, and maintaining the type of scaffold in question;
- The design criteria, maximum intended load-carrying capacity and intended use of the scaffold;
- Any other pertinent requirements of this subpart.

Company has reason to believe that an employee lacks the skill or understanding needed for safe work involving the erection, use or dismantling of scaffolds, Company shall retrain each such employee so that the requisite proficiency is regained. Retraining is required in at least the following situations:

- Where changes at the worksite present a hazard about which an employee has not been previously trained; or

- Where changes in the types of scaffolds, fall protection, falling object protection, or other equipment present a hazard about which an employee has not been previously trained; or

- Where inadequacies in an affected employee's work involving scaffolds indicate that the employee has not retained the requisite proficiency.

Stairway Safety

- A stairway or ladder shall be provided at all personnel points of access where there is a break in elevation of 19 inches (48 cm) or more, and no ramp, runway, sloped embankment, or personnel hoist is provided.

- Employees shall not use any spiral stairways that will not be a permanent part of the structure on which construction work is being performed.

- A double-cleated ladder or two or more separate ladders shall be provided when ladders are the only mean of access or exit from a working area for 25 or more employees, or when a ladder is to serve simultaneous two-way traffic.

- When a building or structure has only one point of access between levels, that point of access shall be kept clear to permit free passage of employees. When work must be performed or equipment must be used such that free passage at that point of access is restricted, a second point of access shall be provided and used.

- When a building or structure has two or more points of access between levels, at least one point of access shall be kept clear to permit free passage of employees.

- Company shall provide and install all stairway and ladder fall protection systems as required and before employees begin the work that necessitates the installation and use of stairways, ladders, and their respective fall protection systems.

The following requirements apply to all jobsite stairways:

- Stairways that will not be a permanent part of the structure on which construction work is being performed shall have landings of not less than 30 inches (76 cm) in the direction of travel and extend at least 22 inches (56 cm) in width at every 12 feet (3.7 m) or less of vertical rise.

- Stairs shall be installed between 30° and 50° from horizontal.

- Riser height and tread depth shall be uniform within each flight of stairs, including any foundation structure used as one or more treads of the stairs. Variations in riser height or tread depth shall not be over ¼-inch (0.6 cm) in any stairway system.

- Where doors or gates open directly on a stairway, a platform shall be provided, and the swing of the door shall not reduce the effective width of the platform to less than 20 inches (51 cm).

- Metal pan landings and metal pan treads, when used, shall be secured in place before filling with concrete or other material.

- All parts of stairways shall be free of hazardous projections, such as protruding nails.

- Slippery conditions on stairways shall be eliminated before the stairways are used to reach other levels.

Temporary Service – The following requirements apply to all stairways as indicated:

- Except during stairway construction, foot traffic is prohibited on stairways with pan stairs where the treads and/or landings are to be filled in with concrete or other material later, unless the stairs are temporarily fitted with wood or other solid material at least to the top edge of each pan. Such temporary treads and landings shall be replaced when worn below the level of the top edge of the pan.

- Except during stairway construction, foot traffic is prohibited on skeleton metal stairs where permanent treads and/or landings are to be installed later, unless the stairs are fitted with secured temporary treads and landings long enough to cover the entire tread and/or landing area.

- Treads for temporary service shall be made of wood or other solid material and shall be installed the full width and depth of the stair.

Stair-Rails and Handrails – The following requirements apply to all stairways as indicated:

- Stairways having four or more risers or rising more than 30 inches (76 cm), whichever is less, shall be equipped with:
  - At least one handrail; and
  - One stair-rail system along each unprotected side or edge.

- Winding and spiral stairways shall be equipped with a handrail offset sufficiently to prevent walking on those portions of the stairways where the tread width is less than 6 inches (15 cm).

- The height of stair-rails shall be as follows:
  - Stair-rails shall be not less than 36 inches (91.5 cm) from the upper surface of the stair-rail system to the surface of the tread, in line with the face of the riser at the forward edge of the tread.

  - Stair-rails installed before March 15, 1991, shall be not less than 30 inches (76 cm) nor more than 34 inches (86 cm) from the upper surface of the stair-rail system to the surface of the tread, in line with the face of the riser at the forward edge of the tread.

  - Mid-rails, screens, mesh, intermediate vertical members, or equivalent intermediate structural members shall be provided between the top rail of the stair-rail system and the stairway steps.
    - Mid-rails, when used, shall be located at a height midway between the top edge of the stair-rail system and the stairway steps.

- Screens or mesh, when used, shall extend from the top rail to the stairway step, and along the entire opening between top rail supports.

- When intermediate vertical members, such as balusters, are used between posts, they shall be not more than 19 inches (48 cm) apart.

- Other structural members, when used, shall be installed such that there are no openings in the stair-rail system that are more than 19 inches (48 cm) wide.

- Handrails and the top rails of stair-rail systems shall be capable of withstanding, without failure, a force of at least 200 pounds (890 n) applied within 2 inches (5 cm) of the top edge, in any downward or outward direction, at any point along the top edge.

- The height of handrails shall be not more than 37 inches (94 cm) nor less than 30 inches (76 cm) from the upper surface of the handrail to the surface of the tread, in line with the face of the riser at the forward edge of the tread.

- When the top edge of a stair-rail system also serves as a handrail, the height of the top edge shall be not more than 37 inches (94 cm) nor less than 36 inches (91.5 cm) from the upper surface of the stair-rail system to the surface of the tread, in line with the face of the riser at the forward edge of the tread.

- Stair-rail systems and handrails shall be so surfaced as to prevent injury to employees from punctures or lacerations, and to prevent snagging of clothing.

- Handrails shall provide an adequate handhold for employees grasping them to avoid falling.

- The ends of stair-rail systems and handrails shall be constructed so as not to constitute a projection hazard.

- Handrails that will not be a permanent part of the structure being built shall have a minimum clearance of 3 inches (8 cm) between the handrail and walls, stair-rail systems, and other objects.

- Unprotected sides and edges of stairway landings shall be provided with guardrail systems. Guardrail system criteria are contained in the Fall Protection Section of this Safety Program.

Spill Response and Reporting

The Company has a spill prevention control and countermeasures program. This program requires that if storage of any chemicals or petroleum products are performed on site, that:

1. Secondary containment is provided to prevent migration of any leak away from the storage area;
2. Storage is located away from any stream or body of water;
3. Spill control equipment is stored in job site trailer ;
4. One spill kit for each tank will be supplied; and
5. All products are properly labeled with original manufacturer's label or HMIS label.

Any accidental or spill caused by other condition will be reported to the supervisor/Safety Manager and will be managed in accordance with the jobsite spill management requirements under its NPDES Storm Water Permit and procedures along with the Company site-specific requirements and procedures.

Subcontractor Requirements

The purpose of this program is to ensure that the Company continues to improve subcontractor health, safety, and environmental performance and to establish a standard for pre-qualification, evaluation/selection and development of our subcontractors. This program applies to all subcontractors and all Company locations and job sites. Subcontractors must be safe at all times and must immediately stop work and notify a supervisor if any unsafe work is observed.

General Requirements

All Company subcontractors are to be managed in accordance with this program.

The use of subcontractors must be pre-approved by the Company. Approval requirements include:

- A formal safety review of the subcontractor being performed by Company safety department.
- The scope of the review was commensurate with the hazards and risk exposure.
- Subcontractor has been/will be oriented to the safety policies, expectations and requirements of Company.
- The subcontractor agrees to abide by our Drug and Alcohol policy and onsite safety rules throughout the duration of the work.

Any subcontractor that has a “Non-Approved” safety status will not be used on any Company site.

Procedure

Pre-Qualification of Subcontractors

Subcontractors will be pre-qualified by reviewing their safety programs, safety training documents and safety statistics.

Evaluation Safety Metrics

Acceptable safety metrics will be used as criteria for pre-qualifying and selecting subcontractors. The safety metrics and scoring will consider:

- Company Subcontractor Safety Pre-Qualification Form responses and subcontractor safety program documents review 60% (Rated from 0-60 total points)
- Subcontractor safety training documents review 20% (Rated from 0-20 total points)
- Subcontractor safety statistics review 20% (Rated from 0-20 total points)

Evaluation Rating and Acceptance

The subcontractor rating system will have five designations:

- **Equal to or Greater than 90 points = A** – no restrictions.
- **Between 85 and 89 points = B** – Mitigation plan must be documented and approved by Company Safety Team.
- **Between 81 and 84 points = C** – Mitigation plan must be documented and approved by the Company Safety Director; management approval in writing.

- **Between 71 and 80 points = D** – Mandatory commitment meeting with senior subcontractor management present; mitigation plan documented and approved by the Company Safety Team; management approval in writing; trained subcontractor safety personnel on site during work regardless of number of workers.
- **Less than 70 points = F** – not to be used.

Once each subcontractor has been evaluated and scored, the Company the Safety Team will provide management the scores/ranking.

The Company reserves the right to change a subcontractor's status to "Non-Approved" if the subcontractor shows insufficient progress towards accepted mitigation plan or other agreed upon criteria.

Subcontractor Involvement

Contractors are required to follow or implement the work practices and systems described below while performing work at Company worksites:

- Attend an safety orientation, pre-job meeting or kick-off meeting provided by Company prior to any work beginning
- Monitor employees for substance abuse and report nonconformities to Company
- Ensure personnel have the required training and competency for their work
- Participate in Company tailgate safety meetings, job safety analysis or hazard assessments and on the job safety inspections.
- Perform a pre-job safety inspection that includes equipment
- Report all injuries, spills, property damage incidents and near misses
- Comply with onsite and Owner Client safety rules
- Implement Company safety practices and processes as applicable
- Clean up and restore the worksite after the job is over
- Ensure compliance with regulations at all times
- Post job safety performance reviews shall be conducted for subcontractors.

Training

Company has long maintained that training is one of the keys to managing an effective safety system. Accordingly, Company uses and field staff training requirement that requires that all crews be properly trained in construction safety. The supervisor of the site will have completed the OSHA 10 Hour or 30 Hour Construction Safety & Health Training and first aid/CPR training. Additionally, crewmembers have also been provided the following training:

- Permit-Required Confined Space Entry
- Rigging and Material Handling
- A – 92 Aerial Lift Operator Training – both snorkel boom and scissors lift
- Fall Protection Training
- Forklift Operator Training – Class VII – Rough Terrain Forklift
- Crane operator will be through the subcontracted crane rental company and will posses NCCO license or equivalent and will provide copy of the license upon arrival on project.

Additional safety training will be provided to the crew by Site Safety Manager, Company Safety Manager and Manager Name during the project.

Meetings

- Daily safety meetings shall be conducted to review the applicable to the tasks for that day, as well as any other pertinent Environmental, Health, and Safety information.
- Weekly toolbox safety meetings shall be properly conducted and recorded. Additionally, staff meetings shall have a portion of the agenda devoted to Environmental, Health, and Safety and accident prevention.

Hazard Awareness/Compliance Training

Hazard awareness and compliance training (the OSHA 10-Hour Construction Outreach Safety Training Course) is required for all contractor employees, including those who manage or supervise construction workers or sub-/lower-tier contractors (includes supervisors, foremen, general foremen, Superintendents, construction managers, construction engineers/buyers, technical representatives, and project managers as well as those in similar positions) and HSE representatives. Hazard awareness and compliance training shall be completed within 1 week of the employee's start-of-work at the project site.

Specific Instructions

Regulations often require employees performing specific tasks/activities or operating specific equipment to receive training specific and appropriate to the task/activity or equipment; this training shall be completed prior to the employee(s) beginning the task/activity.

Vehicle Operations and Safety – Company Owned

To reduce vehicle and property damage, and enhance personal safety and applies to all Company personnel operating any commercial vehicle or mobile equipment owned, leased, rented, or otherwise under control of the Company.

Policy

- Only those employees specifically authorized and who possess a valid license or permit for the equipment being used shall operate motor vehicles on Company business.
- Drivers must obtain and maintain proper classification of license for operation of the assigned vehicle. This may include CDL license if required.
- CDL license holders must comply with all Federal Motor Carrier Safety Regulations
- CDL license holders must ensure that they follow the DOT physical requirements
- CDL license holders must ensure that they comply with DOT drug & alcohol requirements.
- Drivers shall know and obey all state and local motor vehicle laws applicable to the operation of the vehicle.
- The driver shall drive at safe speeds no greater than that permitted by law. Traffic, road, and weather conditions shall be given consideration in determining the safe speed within the legal limit at which the vehicle shall be operated.
- A driver shall not permit unauthorized persons to drive, operate or ride in or on a Company vehicle.
- Where seat belts are provided, they shall be used.
- Employees shall not permit anyone to ride on the running boards, fenders or any part of the vehicle except on the seats. Passengers shall not stand in moving vehicles.
- Employees shall not ride on trailers.
- Employees shall not jump on or off vehicles in motion.
- No alcoholic beverages and/or drugs shall be allowed in a Company vehicle or work area.
- No Company vehicle shall be operated by anyone having consumed any alcoholic beverages and/or drugs within the previous twelve hours.

Inspection

- The driver shall determine that brakes are in a safe operating condition before operating equipment. If brakes are not working properly, they must be corrected before vehicle issued.
- The driver shall inspect windshield wipers frequently and see that they are in good operating condition and that the windows and windshield give sufficient visibility for safe operation of vehicles.
- All lights and reflectors of vehicle shall be inspected by the driver doing any night driving, and if found defective, they shall be repaired immediately.
- The driver shall report any defects that may have developed during the day. If the brakes are not working properly, they shall be adjusted or repaired before the vehicle is put in operation.
- Other items that affect safety shall be repaired prior to continued vehicle operation.

Operation

- The operator of a motor vehicle shall clearly signal his intention of turning, passing or stopping.
- Upon a signal from a vehicle approaching from the rear, the driver of a Company vehicle shall yield the right of way.

- Drivers shall be prepared at stop and the right of way shall be yielded in all instances where necessary to avoid an accident.
- The driver of a vehicle shall be courteous toward other operators and pedestrians. He shall operate his vehicle in a safe manner and shall yield the right of way to pedestrians and other vehicles' when failure to do so might endanger any person or another vehicle.
- The driver shall stay a sufficient distance behind when following another vehicle so that he can safely stop the vehicle in the clear distance ahead. See Figure 3 at the end of this Manual.
- Drivers shall exercise added caution when driving through residential and school zones.
- When entering or leaving any building, enclosed, alley or street where vision is obstructed, a complete stop shall be made and the driver then shall proceed with caution.
- Before a radio equipped vehicle is driven under or adjacent to energized equipment, especially in substation areas, the radio antenna shall be lowered and clearance checked in order to insure that proper clearances will be maintained between the vehicle and energized equipment.
- Ignition systems and radio transmitters shall be turned off and no smoking permitted during refueling.
- When proceeding down grade, the clutch shall not be disengaged. Trucks, particularly it heavily loaded, shall be in a lower gear on steep grades.
- The driver shall not operate the motor in any garage except when driving in or out and then the motor shall be operated as little as practicable. The motor shall not be warmed up inside a garage nor shall the driver test motor operation in a garage unless the exhaust gas is carried directly to atmosphere or doors and windows are open so that adequate ventilation exists.

Parking

- When vehicles must be parked on the roadway, they shall be parked on the right hand side facing in the direction of traffic flow, whenever possible.
- When parking on a roadway, vehicles shall park off the traveled road surface, whenever possible. When vehicles must park closer than 10 feet to the traveled road surface, appropriate warning devices shall be used.
- Proper warning lights, reflectors or red flags in accordance with state or local requirements shall protect trucks or trailers stopped on any public roadway.
- Vehicles shall not be parked on bridges or over culverts except when necessary for work.
- When a truck (other than a pickup) is parked, the driver shall make sure the vehicle is left in a safe position. The engine shall be turned off, the transmission shall be placed in the lowest gear, and the vehicle securely chocked when parked on an incline, the front wheels shall be cut into the curb. Parking on level surfaces is preferred and recommended.

Backing

- Whenever possible, the vehicle shall be positioned to avoid the necessity of backing later.
- Extreme caution shall be exercised when backing a vehicle, to avoid injury to persons and to prevent property damage.
- If another employee is present, he shall be stationed at the rear of the vehicle to assist the driver in backing the vehicle safely when backing a vehicle, which has an obstructed view to the rear.
- A reverse signal (back-up alarm) audible above the surrounding noise level shall be used. Or an observer shall signal that it is safe to back.
- During all backing operations, the vehicle operator shall: Keep a constant lookout during the entire time, Carefully check any blind areas, Back slowly, Watch both sides. Do not depend entirely on mirrors.

- Enlist the aid of another person if such aid is necessary.

Stopping on Highway

- Stopping on the highway shall be avoided.
- When it is absolutely necessary to stop on the highway, extreme caution shall be used.
- Warning signals and lights shall be used.
- Tail lights/emergency flashers shall be used.
- Flares or reflectors shall be placed to give adequate advance warning.
- If work is in progress, traffic control devices (together with flagmen, where necessary) shall be used.

Hauling Poles or Ladders

- Poles, ladders, pipe, etc. shall be loaded parallel with the truck length.
- Such material Materials shall be securely fastened to prevent ahead due to shifting,
- Material, which extends more than 4 feet beyond the front or back of the truck or trailer, shall have warning devices attached. During the day, red flags shall be used; at night and during periods of poor visibility, red lights shall be used.
- When hauling long poles and the vehicle must enter congested area or heavy traffic conditions, escort vehicles displaying suitable warning signs should be used.

Employee Reporting of Company Vehicle Accidents

- The driver shall report accurately and immediately every accident to a vehicle in his possession. Additional reports shall be made to the police or state authority as required
- The driver shall not discuss or argue the causes or results of an accident with other parties but shall secure all pertinent facts and information. He shall answer questions when asked by proper authority but under no circumstances shall he admit fault or negligence or sign any statement for anyone except proper representatives of the Company.
- Should the other driver demand immediate action, he shall be referred to the employee's supervisor.
- The driver, when involved in an accident, shall stop and give his name and address, and the employer's name and address. He shall also secure the name and address of others involved in the accident and of witnesses to the accident (this is very important).
- The driver shall also note position of vehicle after the collision in reference to edge of road sidewalk line, center of intersection, etc.
- If any person is injured as the result of a vehicle accident, employees shall see that necessary emergency aid is provided and notify the Safety Team.
- Any accident involving Company personnel or equipment regardless of fault, must be reported to the Safety Team.
- The supervisor's report shall be made on the same day the accident occurs and should be made as soon as possible.
- The supervisor shall be prepared to report required information to complete an accident report
- The report shall be given to the person to a member of the Safety Team responsible for insurance claims or the Safety Director.
- The supervisor shall report minor accidents.
- A written accident report shall be completed and turned in to the Company with the weekly time sheet immediately after the accident.

- Any resulting police report must be obtained by the Safety Team.

Equipment Inspection

Vehicles that transport personnel shall be inspected as follows:

1. A new vehicle shall receive an initial inspection prior to being placed in service.
2. State safety inspections shall be conducted per any applicable state requirements.

Operator Qualifications

Vehicles used to transport personnel shall be operated only by a qualified operator. The operator of a vehicle used to transport personnel must be familiar with the contents of this procedure, possess the appropriate class vehicle operator's license valid for use on public roadways, and meet any additional site or governmental requirements.

Equipment Requirements

Equipment used to transport personnel must have the following safety features as a minimum:

1. All appropriate safety features shall be operational including, but not limited to brakes, horns, headlights, tail lights, brake lights, turn signal lights, and windshield wipers. In addition, the vehicle shall have an undamaged windshield.
2. Vehicles that have an obstructed view to the rear shall have an adequate audible warning device when backing.
3. The vehicle must have a safe means of access and egress. Methods include, but are not limited to, steps and ladders.

Operating Requirements

1. When operating vehicles onsite or on public roadways, the vehicle operator shall obey all site rules and all applicable laws.
2. Before operating any equipment on public roadways, the vehicle operator shall make sure it meets the requirements of local governing body.
3. The vehicle operator shall always observe posted speed limits.
4. When seat belts or shoulder harnesses are provided, the vehicle operator shall limit the number of occupants (operator plus passengers) to the number of seat belts or shoulder harnesses available in the vehicle. The operator shall ensure that all vehicle occupants use the seat belts or shoulder harnesses.

Passenger Requirements

When riding in vehicles, passengers and drivers must observe the following safety precautions:

1. Vehicles shall not be loaded in excess of capacity as designed by the manufacturer.
2. Use the proper method of access and egress.
3. Always keep torsos and extremities within the confines of vehicles or transporters.

Transporting Personnel with Materials or Equipment

1. When purchasing, designing, and using vehicles, ensure personnel are not transported in the same compartment with materials or equipment whenever possible.

2. When it is necessary to transport personnel and materials or equipment in the same compartment, the Safety Team or designee must develop a written procedure that details the rules for preventing injury to personnel.
3. Transporting personnel in truck beds offsite is strictly prohibited.
4. Personnel being transported to or from locations within the confines of projects may be permitted to ride in the bed of pickup trucks, provided that the following conditions are met:

a. Trucks shall be equipped with benches and properly constructed side guardrails.
b. Personnel shall remain seated with all body parts inside the bed at all times.
c. The tailgate of the vehicle shall be closed.
d. Transport speed shall not exceed 15 mi/h.
e. The vehicles shall be completely stopped while loading and unloading.
f. Personnel and material shall not be transported together.
g. No more than 8 persons shall be transported in the bed of a long (8 ft) bed pickup; n o more than 6 in the bed of a short (6 ft) bed pickup.
h. The operator shall ensure the truck is not overloaded.

2. The preferred method of transporting personnel to and from locations on projects shall require that employees be seated inside a vehicle that has been designed to carry passengers (such as a school bus).

Alternate Means of Transportation

Other special forms of transporting personnel (for example, bicycles, golf carts, gators, mules, and four-wheelers) require site/facility procedures that address safe operation, inspection, and maintenance.

Waste Disposal and Inert Waste Program

All construction waste created by Company will be properly accumulated at the direction of the controlling contractor or customer and stored at the site under the direction of the controlling contractor or customer. Waste disposal, if any, will be the responsibility of both controlling contractor or customer and Company.

No construction waste will be removed from the site with the express written consent and direction of the Contractor with all necessary permits completed.

Hazardous Waste

The Company does not contemplate the creation of any hazardous waste as a product of our portion of the project.

Welding-Cutting-Hot Work Program

The purpose of this program is to assure a safe work environment during welding, cutting, and hot work operations. This program is applicable to all employees directly involved or assisting in the welding, cutting and hot work operations. Operators of equipment should report any equipment defect or safety hazards and discontinue use of equipment until its safety has been assured. Only qualified personnel shall make repairs. If welding and cutting cannot be conducted safely the welding and cutting operation shall not be performed.

Definitions

Welding/Hot Work Procedures – any activity which results in sparks, fire, molten slag, or hot material which has the potential to cause fires or explosions.

Examples of Hot Work – cutting, brazing, soldering, thawing pipes, grinding, using an electric tool in a hazardous area and Welding.

Special Hazard Occupancies – any area containing flammable liquids, dust accumulation, gases, plastics, rubber and paper products.

Hot Work Permit – a document that authorizes temporary work that involves sparks, fire, molten slag, or hot material which has the potential to cause fires or explosions.

Hazards – includes, but not limited to the following: fires and explosions, skin burns, welding "blindness", and respiratory hazards from fumes and smoke.

Key Responsibilities

Superintendents and Supervisors

- Determine if its property is safe for welding and cutting operations.
- Establish safe areas for welding and cutting operations.
- Provide training for all employees whose task includes heat, spark or flame producing operations such as welding, brazing, or grinding.
- Develop and monitor effective hot work procedures.
- Provide safe equipment for hot work.
- Provide proper and effective PPE for all hot work.
- Monitor all hot work operations.
- Ensure all hot work equipment and PPE are in safe working order.
- Allow only trained and authorized employees to conduct hot work and conduct inspections of the hot work area before operations begin.
- Ensure permits are used for all hot work authorized areas.

General

Before cutting or welding is permitted the area shall be inspected by a Company supervisor responsible for inspection and granting authorized welding and cutting operations. Precautions that are to be taken shall be in the form of a written Hot Work permit. Where practicable all combustibles shall be relocated at least 35 feet from the work site. Where relocation is impractical, combustibles shall be protected with

flameproof covers, shielded with metal, guards, curtains, or wet down the material to help prevent ignition of material.

Ducts, conveyor systems, and augers that might carry sparks to distant combustibles shall be protected or shut down. Where cutting or welding is done near walls, partitions, ceilings, or openings in the floor (grating, manholes, etc.), fire-resistant shields or guards shall be provided to prevent ignition.

If welding is to be done on a metal wall, partition, ceiling, or solid decking/flooring, precautions shall be taken to prevent ignition of combustibles on the other side, due to conduction or radiation of heat. Where combustibles cannot be relocated on the opposite side of the work, a fire watch person shall be provided on the opposite side of the work. Welding shall not be attempted on a metal partition, wall, and ceiling or decking/flooring constructed of combustible sandwich panels.

Cutting or welding on pipes or other metal in contact with combustible walls, partitions, floors, ceilings, or roofs shall not be undertaken if the work is close enough to cause ignition by combustion. Cutting or welding shall not be permitted in the following situations:

- In areas not authorized by management.
- In sprinkled buildings while such protection is impaired.
- In the presence of potentially explosive atmospheres, e.g., flammables.
- In areas near the storage of large quantities of exposed, readily ignitable materials.
- In areas where there is dust accumulation of greater than 1/16 inch within 35 feet of the area where welding/hot work will be conducted.
- All dust accumulation shall be cleaned up before welding or hot work is permitted.

Whenever welding or cutting is performed in locations where other than a minor fire might develop or any of the conditions mentioned above cannot be met, a fire watch shall be provided.

- The fire watch shall be provided during and for a minimum of 1/2 hour past the completion of the welding project.
- The fire watch shall be trained in the use of fire extinguishers and the facility's alarm system.
- During this time the fire watch will have appropriate fire extinguishers readily available.
- Suitable extinguishers shall be provided and maintained ready for instant use.
- A hot-work permit will be issued on all welding or cutting of the designated welding area

Fire Prevention Measures

A designated welding area shall be established to meet the following requirements:

- Floors swept and cleaned of combustibles within 35 feet of work area.
- Flammable and combustible liquids and material will be kept 35 feet from work area.
- Adequate ventilation providing 20 air changes per hour.
- At least one 10-pound dry chemical fire extinguisher shall be within access of 35 feet of the work area.
- Protective dividers such as welding curtains or noncombustible walls will be provided to contain sparks and slag to the combustible free area.

Requirements for Welding Conducted In The Designated Welding Area

- Portable welding curtains or shields must be used to protect other workers in the welding area.

- A hot-work permit must be completed and complied with prior to initiating welding operations.
- Respiratory protection is mandatory unless an adequate monitored airflow away from the welder and others present can be established and maintained.
- Plastic materials must be covered with welding tarps during welding procedures.
- Fire Watch must be provided for all hot-work operations.
- After welding operations are completed, the welder shall mark the hot metal or provide some other means of warning other workers.

Confined Space Hot Work

Refer to Company's Confined Space Program before commencing any welding, cutting, and/or brazing operations in an area meeting the requirements of a confined space.

Ventilation is a prerequisite to work in confined spaces.

When welding or cutting is being performed in any confined spaces, the gas cylinders and welding machines shall be positioned on the exterior of the confined space.

When a welder must enter a confined space through a manhole or other small opening, means shall be provided for quickly removing him in case of an emergency.

- When safety belts and lifelines are used for this purpose, they shall be so attached to the welder's body that it cannot be jammed in a small exit opening.
- An attendant with a preplanned rescue procedure shall be stationed to observe the welder at all times and be capable of putting rescue operations into effect.

When arc welding is to be suspended for any substantial period of time, such as during lunch or overnight, all electrodes shall be removed from the holders and the holders carefully located so that accidental contact cannot occur, and the machine shall be disconnected from the power source.

In order to eliminate the possibility of gas escaping through leaks of improperly closed valves, when gas welding or cuffing, the torch valves shall be closed and the fuel-gas and oxygen supply to the torch positively shut off at some point the confined area whenever the torch is not to be used for a substantial period of time, such as during lunch hour or overnight. If practical, the torch and hose shall also be removed from the confined space.

When welding must be performed in a space entirely screened on all sides, the screens shall be so arranged that no serious restriction of ventilation exists. It is desirable to have the screens so mounted that they are about 2 feet (0.61 m) above the floor unless the work is performed at so low a level that the screen must be extended nearer to the floor to protect nearby workers from the glare of welding.

A fixed enclosure shall have a top and not less than two sides which surround the welding or cutting operations, and a rate of airflow sufficient to maintain a velocity away from the welder of not less than 100 linear feet (30 m) per minute.

All welding and cutting operations carried on in confined spaces shall be adequately ventilated to prevent the accumulation of toxic materials or possible oxygen deficiency. This applies not only to the welder, but also to helpers and other personnel in the immediate vicinity. All air withdrawn will be replaced with air that is clean.

In circumstances for which it is impossible to provide such ventilation, airline respirators or hose masks approved for this purpose by the National Institute for Occupational Safety and Health (NIOSH) will be provided. In areas immediately hazardous to life, a full-face piece, positive pressure, self-contained breathing apparatus or a combination full-face piece, positive pressure supplied-air respirator with an auxiliary, self-contained air supply approved by NIOSH must be used.

Where welding operations are carried on in confined spaces and where welders and helpers are provided with hose masks, hose masks with blowers or self-contained breathing equipment, a worker shall be stationed on the outside of the confined space to ensure the safety of those working within.

Fumes, Gases and Dust

Fumes produced by some welding processes can be toxic and may require source extraction. An assessment of the work to be performed must be completed before each job is undertaken. Fumes generally contain particles from the material being welded. Welding fumes can have an acute effect on the respiratory system.

Any welding, cutting, or burning of lead base metals, zinc, cadmium, mercury, beryllium or exotic metals or paints that could produce dangerous fumes shall have proper ventilation or respiratory protection.

Welders and helpers will refer to Company's Respiratory Protection Program to determine the appropriate respiratory protection to be used during welding operations.

All welding and cutting operations shall be adequately ventilated to prevent the accumulation of toxic materials. This applies not only to the welder, but also to helpers and other personnel in the immediate vicinity.

Personal Protection

Helmets and hand shields shall be made of a material, which is an insulator for heat and electricity. Helmets, shields, and goggles shall not be readily flammable and shall be capable of withstanding sterilization.

Helmets and hand shields shall be arranged to protect the face, neck, and ears from direct radiant energy from the arc.

Helmets shall be provided with filter plates and cover plates designed for easy removal.

All parts shall be constructed of a material, which will not readily corrode or discolor the skin.

Goggles shall be ventilated to prevent fogging of the lenses as much as practicable.

All glass for lenses shall be tempered, substantially free from scratches, air bubbles, waves, and other flaws. Except when a lens is ground to provide proper optical vision correction, the front and rear surfaces of lenses and windows shall be smooth and parallel.

Lenses shall bear some permanent distinctive marking which may readily identify the source and shade.

Procedure

The following is a guide for the selection of the proper shade numbers. These recommendations may be varied to suit the individual's needs.

Welding Operation		Shade Number
Shielded metal — arc welding 1/16, 3/32, 1/8-5/32-inch electrodes		10
Gas-shielded arc welding (nonferrous) 1/16, 3/32, 5/32-inch electrodes		11
Gas-shielded arc welding (ferrous) 1/16, 3/32, 1/8, 5/32 electrodes		12
Shielded metal arc welding: 3/16	7/32,1/4-inch electrodes	12
	5/16, 3/8-inch electrodes	14
Atomic hydrogen welding		10 – 14
Carbon arc welding		14
Soldering		2
Torch brazing		3 or 4
Light cutting, hp to 1 inch		3 or 4
Medium cutting, 1 inch to 6 inches		4 or 5
Healy cutting, 6 inches or over		5 or 6
Gas welding (light) up to 1/8 inch		4 or 5
Gas welding (medium) 1/8 - 1/2 inch		5 or 6
Gas welding (heavy) 1/2 inch or over		6 or 8

Note – In gas welding or oxygen cutting where the torch produces a high yellow light, it is desirable to use a filter or lens that absorbs the yellow or sodium line in the visible light of the operation. All filter lenses and plates shall meet the test for transmission of radiant energy prescribed in ANSI Z87.1 — 1968 — American National standard Practice for Occupational and Educational Eye and face Protection. Where the work permits the welder to be enclosed in an individual booth painted with a finish of low reflectivity such as zinc oxide (an important factor for absorbing ultraviolet radiation) and lamp black or shall be enclosed with noncombustible screens similarly painted. Booths and screens shall permit circulation of air at floor level. Workers or other persons adjacent to the welding areas shall be protected from the rays by noncombustible or flameproof screens or shields or shall be required to wear appropriate goggles.

Adequate hand protection and clothing must be used to protect the body from welding hazards.

Cleaning Compounds

In the use of cleaning materials, because of their possible toxicity or flammability, appropriate precautions such as manufacturer instructions shall be followed.

- Degreasing and other cleaning operations involving chlorinated hydrocarbons shall be so located that no vapors from these operations will reach or be drawn into the atmosphere surrounding any welding operation.
- In addition, trichloroethylene and perchloroethylene shall be kept out of atmospheres penetrated by the ultraviolet radiation of gas-shielded welding operations.

Oxygen cutting, using a chemical flux, iron powder or gas shielded arc cutting for stainless steel shall be performed using mechanical ventilation adequate to remove the fumes generated.

Cylinders

Compressed gas cylinders shall be DOT-approved and legibly marked near the shoulder of the cylinder for the purpose of identifying the gas content with either the chemical or trade name of the gas.

- All compressed gas cylinder connections must comply with ANSI B57. 1-1965 Standards.
- Compressed gas cylinders shall be always secured in an upright position.
    - All cylinders shall be kept away from sources of heat and from radiators and piping systems that may be used for grounding purposes. Cylinders and cylinder valves including couplings and regulators shall be kept free from oily or greasy substances and must not be handled with gloves or rags in the same condition.
    - Stored oxygen cylinders shall be kept at least 20 feet from the fuel gas cylinders or combustible materials, especially oil or grease, or separated by a non-combustible barrier at least 5 feet high with a fire rating of at least one-half hour. All empty cylinders shall have closed valves. Valve protection caps shall always be in place and hand-tight except when cylinders are in use or connected for use.
    - Cylinders shall not be kept in unventilated enclosures such as lockers and cupboards.
    - Fuel gas cylinders stored inside buildings shall be limited to a total capacity of 2000 cubic feet (300 pounds) of liquefied petroleum gas, except for those in actual use or attached ready for use.
    - All acetylene cylinders shall be stored valve-end up.

Assigned storage spaces shall be located where cylinders cannot be knocked over or damaged by falling objects or subject to tampering by unauthorized persons.

- Back flow protection shall be provided by an approved device that will prevent oxygen from flowing into the fuel-gas system or fuel from flowing into the oxygen system.
- An approved device that will prevent flame from passing into the fuel-gas system shall provide flashback protection.
- An approved pressure-relief device set at the appropriate pressure shall provide back pressure protection.

Special care must be taken when transporting gas cylinders:

- Cylinders must be secured with valve cap installed.
- Cylinders shall not be lifted by the valve protection caps, the regulators must be removed and cylinders shall not be dropped or permitted to strike each other.
- Removed regulators must be carried in the cab of the vehicle.
- Cylinders shall not be tampered with nor should any attempt be made to repair them.

- They shall be handled carefully – rough handling, knocks, or falls are liable to damage the cylinder, valve or safety device and cause leakage.

Safety devices shall not be tampered with.

Arc Welding and Cutting

All personnel operating, installing, and maintaining welding equipment shall be qualified or trained to operate and maintain such equipment.

- All workmen assigned to operate or maintain equipment shall be familiar with and electrical welding equipment shall be chosen for safe operation and comply with applicable Requirements for Electric Arc Welding Standards to include: 29 CFR 1910.254, 29 CFR 1910.252 (a)(b) (c) and if gas shielded arc welding is done the must be familiar with the American Welding Society Standard A6-1-1966.
- Arc welding equipment must be designed to meet conditions such as exposure to corrosive fumes, excessive humidity, excessive oil vapor, flammable gasses, abnormal vibration or shock, excessive dust and seacoast or shipboard conditions.
- It shall be operated at recommended voltage in accordance to the manufacturer recommendations.
- All leads shall be periodically inspected and replaced if insulation is broken or splices are unprotected.
- Leads shall not be repaired with electrical tape.
- All ground connections shall be checked to determine that they are mechanically strong and electrically adequate for the required current.

A disconnecting switch or controller shall be provided at or near each welding machine along with over current protection.

All direct current machines shall be connected with the same polarity and all alternating current machines connected to the same phase of the supply circuit and with the same polarity.

- To prevent electrical contact with personnel, all electrode holders shall be placed where they do not contact persons, conducting objects or the fuel of compressed gas tanks.
- All cables with splices within 10 feet of the holder shall not be used.

    - If the object to be welded or cut cannot readily be moved, all moveable fire hazards should be removed.
    - If an object to be welded or cut cannot be moved and if all the hire hazards cannot be removed, then guards shall be used to confine the heat sparks and slag and to protect the immovable fire hazards.

Resistance Welding

All personnel operating, installing, and maintaining welding equipment shall be qualified or trained to operate and maintain such equipment.

- Voltage, interlocks, guarding, grounding, and shields shall be in accordance with manufacturer recommendations.
- Precautions such as flash guarding, ventilation and shields shall be provided to control flashes, toxic elements, and metal fumes.

If the object to be welded or cut cannot readily be moved, all moveable fire hazards should be removed.

Transmission Pipeline

When arc welding is performed in wet conditions, or under conditions of high humidity, special protection against electric shock shall be supplied.

Pressure testing:

- In pressure testing of pipelines, the workers and the public shall be protected against injury by the blowing out of closures or other pressure restraining devices.

- Protection shall be provided against expulsion of loose dirt that may have become trapped in the pipe.

The welded construction of transmission pipelines shall be conducted in accordance with the Standard for Welding Pipelines and Related Facilities, API Std. 1104-1998.

Oxygen Fuel Gas Welding and Cutting:

Only approved apparatuses such as torches, regulators, or pressure-reducing valves, setting generators and manifolds shall be used:

- Mixtures of fuel gases and air or oxygen may be explosive and must be guarded against.
- All hoses and hose connections shall comply with the Compressed Gas Association and Rubber Manufacturers' Associations' applicable standards.
- Workers in charge of the oxygen or fuel-gas supply equipment, including generators, shall be instructed, and judged competent by the Company before being left in charge.

If the object to be welded or cut cannot readily be moved, all moveable fire hazards should be removed.

Fire Watch Requirements

A fire watch shall be under these conditions as a minimum:

- Locations where other than a minor fire might develop.
- Combustible materials are closer than 35 feet to the point of operation.
- Combustibles that are 35 feet or more away but are easily ignited.
- Wall or floor openings within a 35 feet radius of exposed combustible materials.
- Combustible materials are adjacent to the opposite side of metal partitions, ceilings, or roofs.

Fire watch personnel MUST be maintained at least a half an hour after welding or cutting operations have been completed.

First Aid Equipment

First aid equipment shall be always available during hot work operations. All injuries shall be reported as soon as possible for medical attention. First aid shall be rendered until medical attention can be provided.

Training

Training shall include:

- Position Responsibilities
- Cutters, welders and their supervisor must be suitably trained in the safe operations of their equipment and the safe use of the process.
- Fire Watch Responsibilities – specifically, the fire watch must know:
  - That their ONLY duty is Fire Watch.
  - When they can terminate the watch.
  - How to use the provided fire extinguisher(s).
  - Be familiar with facilities and how to activate fire alarm if fire is beyond the incipient stage.
  - Operator Responsibilities
  - Contractor Responsibilities
  - Documentation requirements
  - Respirator Usage requirements
  - Fire Extinguisher training.

Spark Containment

The Company will use fire blankets draped at weld sites to contain welding and grinding sparks at the weld sites when Company deems this procedure necessary. Additionally, strategically located fire extinguishers and fire watches may be utilized during high fire exposure conditions. This level of spark containment applies solely to the weld sites and protects sparks from migrating outside our barricade areas but allows sparks to strike the ground within our barricaded work zone.

Any other spark containment requirements requested by the customer must be cleared in advance through Company Safety Team.

Weld Flash Protection

The Company will comply with the requirements as stated within OSHA 29 CFR 1926.351(e), which states “Shielding. Whenever practical, all arc welding and cutting operations shall be shielded by noncombustible or fireproof screens which will protect employees and other persons working in the vicinity from the direct ray of the arc.” Company will comply with the intent of this requirement in the following manner.

Company will barricade our erection and welding zones in compliance with our controlled access to prevent other trades’ employees from entering our work and welding zones. This barricade tape will be placed to maintain at least a 35 ft. buffer between other trades.

The controlling contractor and THE CUSTOMER must prevent their workers from entering this barricaded work zone.

Additional Written Programs

The following written programs may not be applicable to all jobsites, but can be accessed by clicking here.

DOT Written Vehicle Safety Program

Hexavalent Chromium (Chromium (VI)) Exposure Control Program

Respiratory Protection Program

Confined Space Program OSHA 29 CFR 1910.147

Site Specific Emergency Action Plan Program (EAP)

The Company has developed the following Emergency Action Plan Program to ensure the safety of its employees and to comply with health and safety regulations in accordance with the Occupational Safety & Health Administration, 29 CFR 1910.38 Subpart E.

The Company shall ensure this plan is available for employees to review. The competent person for this program will be designated by The Company prior to each offsite job assignment at a host employer location. The competent persons for this program at The Company facilities are the Corporate Regulatory Compliance Directors indicated in the Program Administrator section of this policy.

Training

Training will be provided by The Company for employees, contract workers and subcontractors on the procedures of the Emergency Action Plan. Training for employees working offsite at a host employer location shall be trained prior to performing work at each facility by designated personnel. Employees working at The Company facilities shall be trained upon hire, annually and as often as needed. Training for designated personnel with specific Roles and Responsibilities shall be trained upon assignment, annually, when responsibilities change and as often as needed.

Program Elements

1. Emergency evacuation plan,
2. Critical Operations,
3. Methods to account for The Company employees
4. Rescue and medical duties
5. Means of reporting emergencies
6. Company representative (s) responsible for plan,
7. The Company will designate and train employees to assist in a safe and orderly evacuation of other employees.

Emergency Evacuation Plan

The Company will prepare an emergency evacuation plan for two areas the roof and ground for all offsite projects preformed at a Host Employer location.

1.1 Roof evacuation procedures are as follows:

1.2. Ground Evacuation Procedures are as follows:

The Company authorized employee:

Name: _____ **Signature** _____

Date: _____

Location: _____

Project Name:_____

Project Location: _____

Project Superintendent:_____

Description of Project:_____

2. Critical Operations

In the event an emergency occurs on a project involving propane, combustion engine equipment or electrical tools, The Company designated employee(s) will shut off propane sources at the cylinders and turn off all equipment before evacuating, provided the employee(s) safety is not jeopardized by doing so.

Does this project involve the use of propane?

Does this project involve the use of combustion engine equipment?

Does this project involve the use of electrical tools or other ignition sources?

Does this project involve the use of other critical operations not listed?

Explain:

If employees are unable to shut off propane supplies, the fire department or other responding emergency agency will be notified of the presence and locations of the propane tanks.

List locations of propane tanks onsite:

Phone Number of Fire Department:

Name and Phone Number of designated employee(s) authorized by The Company for shutting down critical operations in the event of an emergency.

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3. Methods to Account for Employees Offsite

Employees have been instructed to meet at a designated location to be accounted for in the event of an emergency at a Host Employer Location. If an employee(s) is unaccounted for, emergency personnel shall be notified immediately. The emergency agency shall be informed of the employee(s) last known whereabouts.

Person(s) designated to account for employees shall be determined prior to each project being performed at an offsite location. Designated person(s) names shall be documented and indicated on site specific emergency action plans and made available to all employees working at the offsite location. Meeting locations shall be determined by designated person(s) and shall be chosen based on the type of emergency and potential hazards.

3.1. Methods to Account for Employees at The Company Facilities

Person(s) designated to account for employees shall be determined by The Company management. Designated employees shall be trained on emergency action procedures, exit routes, meeting locations,

names of first responders and information on contacting emergency agencies. If an employee(s) is unaccounted for, emergency personnel shall be notified immediately. The emergency agency shall be informed of the employee(s) last known whereabouts.

4. Rescue and Medical Duties

Rescue and medical duties shall be assigned prior to beginning work at an offsite location. Person(s) designated shall be trained in CPR/SFA/AED in addition to task specific rescue operations. Designated person(s) either onsite or offsite shall be made known to all affected employees and maintained in The Company Emergency Action Plan and made available to all employees.

5. Means of Reporting Emergencies

In the event a fire or emergency occurs, it is The Company's intention to notify all employees, affected contractors and Host Employer personnel immediately. The local fire department shall be called by dialing 911. If the host employer has a fire brigade, they shall be notified in addition to the local fire department.

6. Company Representatives Responsible for this plan are as follows:

Name _____ **Title** _____

Name _____ **Title** _____

Name _____ **Title** _____

Emergency Contacts List

Host Employer Address:	
Host Employer Telephone:	
Home Office Telephone:	
Local Police Telephone:	
Local Fire Telephone:	
Local Paramedics Telephone:	
Local Hospital Address:	
Local Hospital Telephone:	

Nearest Hospital Directions:

Evacuation Routes & Exits

Program Review

The emergency action plan will be reviewed following the circumstances: upon implementation, initial job assignment, the employee's responsibilities under the plan change and when the plan is changed.

Company Inspection Forms and Checklists

Excavation Checklist

Permit Required Confined Space

Equipment Inspection

JSA