Electric
SUPPLY CO.
ELECTRICAL CONTRACTORS

SAFETY MANUAL

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1. ADMINISTRATIVE PROCEDURES

A. PURPOSE AND SCOPE

The goal of this program is to provide information for this company to conduct their operations so that injuries to people, damage to property and/or the environment will be avoided. Every effort will be made to prevent accidents. The objective is to provide a clean, safe and healthy working environment for all employees. It is this company's intention to comply with all safety and health standards that are enforced by local, state or federal authorities.

The Administrative Procedures identified here more specifically address the requirements as identified in 1926.20(b) Accident prevention responsibilities to initiate and maintain such programs and 1926.21 Safety training and education to recognize, avoid and prevent unsafe conditions.

This company will provide engineering controls, administrative controls, personal protective equipment and training to abate hazards and to prevent injury and illness. This company has developed policies, rules and procedures which will contribute to the safety of all employees.

B. RESPONSIBILITIES

Safety Director

The Safety Director will:

- Monitor the implementation and enforcement of the policies and procedures established by this safety program as well as the requirements set forth by federal, state and local regulations.
    - Serve as the Chairman of the Safety Committee and ensure that the following actions are implemented:
    - Review the conditions of the workplace and jobsites.
    - Develop an effective plan to address the abatement of hazards.
    - Provide on-going safety training to workers, supervisors, safety committee members, and management.
    - Maintain of all records and documents associated with the safety program and generate all required reports.
    - Conduct accident and incident investigations and provide corresponding reports.
    - Maintain an effective system of communication between workers, supervisors and management relevant to the safety program and abatement of hazards.
    - Communicate company policies and procedures with other contractors, subcontractors and hosts, and ensure that all work is performed in a safe and compliant manner.
    - Conduct a periodic review of the safety program as a whole and make revisions as needed to address changing regulations or conditions.

Management

Management will:

- Provide the time, resources and authority needed to develop and execute the safety program.

- Monitor the progress of the safety program and take action to ensure its success. This will include the review of incident reports, accident reports, policies, procedures and written communication.

- Lead by example and follow the same policies, procedures and rules established for the workers.

Supervisors

Supervisors will:

- Ensure a "competent persons" is available as needed for each work area (jobsite). Competent persons will have the knowledge to recognize hazards and the authority to take appropriate action.

- Evaluate their assigned work areas. They will identify hazards and take action to abate the hazards in accordance with federal, state, and local regulations as well as the policies, procedures and rules established by this company.

- Inspect and monitor their assigned work areas. They will ensure that all work is performed safely and in accordance with federal, state, and local regulations as well as the policies, procedures and rules established by the company.

- Enforce the policies, procedures, and rules established in the safety program in accordance with the company disciplinary policy.

- Assist in the on-going training of workers by conducting periodic safety talks and activities. They will also bring any problems or concerns of the workers to the attention of management, the Safety Director and/or the Safety Committee.

- If requested, will serve on the Safety Committee and complete assigned tasks needed to execute the safety program.

Employees

All employees are:

- Required to work safely in accordance with state, federal and local regulations as well as the rules established by this company. This will include, but is not limited to, OSH Act 5(b) *"Each employee shall comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to this Act which are applicable to his own actions and conduct."*

- Required to notify their supervisor immediately of any unsafe acts or conditions they observe.

- Encouraged to take an active role in the safety program and make recommendations to improve any and all parts of the program.

C. SAFETY RULES

All company safety policies and procedures must be followed.

Anyone known to be under the influence of alcohol and/or drugs shall not be allowed on company property. Persons with symptoms of alcohol and/or drug abuse are encouraged to discuss personal or work-related problems with the supervisor/or employer.

No one knowingly shall be permitted or required to work while his or her ability or alertness is impaired by fatigue, illness, or other causes that might expose the individual or others to injury.

Horseplay, scuffling and other acts which tend to endanger the safety or well-being of employees are prohibited. Fighting or instigating fights will not be tolerated.

All injuries shall be reported promptly to the supervisor/employer so that arrangements can be made for medical and/or first aid treatment.

Work shall be well planned and supervised to prevent injuries when working with equipment and handling heavy materials. When lifting heavy objects; employees should bend their knees and use the muscles of the legs instead of the smaller muscles of the back.

Employees should be check to see that all guards and other protective devices are in place, and properly adjusted, and shall report deficiencies to management.

Employees shall not handle or tamper with any electrical equipment, machinery or air or water lines in a manner not within the scope of their duties unless they have received instructions from their supervisor/or employer. Only trained and authorized employees shall operate machinery, equipment, tools or company vehicles.

All tools and equipment must be inspected before and after each use. NEVER use damaged equipment. Destroy or tag defective tools and equipment out of service.

Observe all warning signs and tags. Ask your supervisor if you are not sure what they mean.

All power tools and sources of ignition that may be present shall be turned off or disconnected before working with solvent materials with a low flashpoint. Smoking is only allowed in designated areas.

Machinery shall not be repaired or adjusted while energized or in operation. All adjustments and repairs must be done in accordance with the Hazardous Energy Control Plan.

Employees shall cleanse thoroughly after handling hazardous substances, and follow special instructions from authorized sources.

Sturdy work shoes, preferably high top leather with nonskid soles, are recommended. Inappropriate footwear shall not be worn. Insulated shoes should be worn as needed. Only clothing that will not contribute to injury from electric arcing and burns shall be worn. Flame Resistant (FR) clothing may be needed per our Electrical Safety Program. Pants shall be long-legged. Hats and gloves must be worn when necessary. Loose or frayed clothing, dangling ties, finger rings, etc. must NOT be worn around moving machinery or other places where they can get caught.

Approved protective equipment shall be worn in specified work areas and in the execution of tasks that require their use.

In addition to the rules established here, employees are expected to follow all safety policies, procedures and instructions provided in training.

D. ACCIDENTS/INCIDENTS

Each company employee has the responsibility to immediately report all work-related accidents, incidents (near miss accidents) or illnesses to his/her supervisor.

Unsafe acts and conditions observed by any employee should immediately be brought to the attention of the supervisor.

Supervisory personnel are required to document all accidents, incidents, illnesses, unsafe acts and unsafe conditions reported by employees and submit a report to the Safety Director as soon as possible.

Supervisory personnel are required to immediately take the appropriate corrective action that will ensure the prevention of future accidents and/or incidents.

The Safety Director will ensure that a thorough investigation of the incident/accident is made and that additional corrective action, if required is taken.

In the case of a fatality or hospitalization of three or more employees the Safety Director will be notified as soon as possible. The Safety Director will notify the local OSHA Office or contact 1-800-321-OSHA to report the accident within 8 hours of receiving notice of it.

E. RECORDS

The Safety Director will ensure that all records and documents related to the safety program are properly maintained. This will include material safety data sheets, accident/incident reports, and the OSHA Log and Summary.

The Safety Director will ensure accidents are entered in the OSHA log within 6 days of knowledge of the accident.

Medical records, if required will be kept with the physician administering the service.

Requests for documents and records should be submitted to the Safety Director.

F. COMMUNICATION AND TRAINING

No employee will be allowed to perform a job or task unless they have received training on the hazards present and the precautions necessary to perform the job safely. The Safety Director will ensure the following training is provided:

Orientation Training

Each new and newly assigned worker will participate in a safety orientation training session. Participants will be instructed in all elements of the company safety program and will complete all safety training required by federal and local agencies.

Refresher Training

On-going safety training will be a primary component of the company safety program. This training may take the form of classroom or on-the-job instruction. The Safety Director and Safety Committee will establish a training agenda. This agenda will include all refresher training required by federal, state and local agencies. The training agenda will also be based on a recent hazard analysis and review of accident/incident reports.

Hazard Specific Training

Before beginning a new job a review of the hazards will be conducted by the supervisor. Training will be provided for any new hazards introduced to the workers. This may include the introduction of new substances, equipment, tools, processes or procedures.

Job Briefings

Job site supervisors will conduct a job briefing at the beginning of each shift. Briefings will be performed per the company protocols and the briefings checklist used. The job briefing will identify job assignments, procedures to be followed and the actions that will be taken to protect workers in the performance of their assigned tasks. Additional briefings will be conducted as tasks, assignments or conditions warrant.

Safety Talks/Meetings

The Safety Director will ensure that periodic safety talks, activities and meetings are conducted by supervisors on the job. They will provide refresher training to workers and introduce new policies, procedures, and hazard controls to be applied. The meetings will also serve as a means for workers to bring safety concerns to the attention of management.

Management/Supervisor/Safety Committee Training

Special training will be provided to management, supervisors and safety committee members. This training will address the requirements of OSHA regulations and best safety practices used in our industry. Training will be provided on an on-going basis so that our safety program is kept current and effective.

G. SAFETY EVALUATIONS AND INSPECTIONS

Each employee will perform a safety check of the work area at the beginning of the shift. They will also check equipment, tools and personal protective equipment before each use.

The supervisor will evaluate their assigned work area for hazards and ensure that a plan is established to abate hazards. They will ensure that hazards are abated in accordance with federal, state, and local regulations as well as the policies, procedures and rules established by the company.

Supervisors will inspect the work area, equipment, tools and protective equipment at the beginning of each shift. Supervisors will continue to monitor activity throughout the shift so that incidents/accidents are prevented.

The Safety Director, Safety Committee or an assigned representative will perform periodic inspections. A report of the inspections will be generated and action taken to improve the safety and health of workers.

H. MULTI-EMPLOYER WORKSITE POLICY

The Safety Director will ensure that all safety procedures are reviewed with the Host Employer, General Contractor and Affected Contractors before a job begins. Specific written policies and procedures will be shared. This review will include materials safety data sheets, emergency action plans, and the interpretation of signs and tags. All relevant information will be communicated to supervisors and workers.

I. VISITORS

No visitors will be allowed on company property or jobsites unless they have received permission from a designated company representative and completed all necessary paperwork.

Visitors entering will be escorted by designated personnel and receive a briefing on appropriate safety precautions to be observed. Required protective equipment will be provided as needed.

J. DISCIPLINARY POLICY

This company strives to create a safe and healthy workplace for all employees. To achieve this objective will require the cooperation of everyone. Supervisors must enforce all company safety policies and procedures.

In the event that any employee deliberately fails to follow the prescribed safe work procedure or deliberately fails to use the prescribed safety equipment disciplinary action may be initiated.

Incidents that involve imminent danger or in the opinion of the supervisor show a complete disregard for safety shall be immediately referred to management for appropriate action.

K. SAFETY COMMITTEE

This organization has established a joint employee-management safety committee to protect the safety and health of its employees.

Role of the Safety Committee

The Safety Committee will:

- Perform an ongoing evaluation of the safety program.
- Review the conditions of the workplace and assist in developing plans to address the hazards and comply with OSHA regulations.
- Review all documents, records and reports associated with the safety program and recommend actions to improve performance and compliance with OSHA regulations.
- Review all communication between workers, supervisors and management relevant to the safety program and recommend actions to be taken.
- Accept and complete assigned tasks needed to execute the safety program.

Organization of the Safety Committee

The Safety Committee will be comprised of supervisors and selected workers who have taken an interest in safety. The Safety Director shall serve as a representative of management and act as Chairman of the Safety Committee.

Safety Committee Procedures

The safety committee will meet once a month. The Chairman will establish an agenda to be followed.

The Chairman will ensure that minutes of each meeting are taken. The Chairman will review the results of the meeting with management and take appropriate actions.

A report of the meeting will be posted or communicated to employees at monthly safety talks.

L. RESOURCES AND REFERENCES

To effectively execute the policy and procedures identified in this section of our safety manual the following documents may be used. The documents will be filed with our company records (personnel files, OSHA Recordkeeping, etc.) as noted in the table. Copies of documents that do not include sensitive personnel information will be provided to the host employer/general contractor/construction manager upon request.

TITLE	PURPOSE	MAINTENANCE	SOURCE
Jobsite Hazard Assessment/ Analysis	Used to assess project or task specific hazards to determine controls needed (written programs, safety equipment, etc.) and associated costs	Filed with Project estimates	NECA eSafetyLine www.esafetyline.com/neca/manual
Safety Program Checklist	Used to perform an annual review of companywide and jobsite safety programs	Filed with company annual review files	NECA eSafetyLine www.esafetyline.com/neca/manual OSHA Tools for Safety & Health Program Assessment www.osha.gov/doc/outreachtraining/htmlfiles/evaltool.html
Jobsite Safety Checklist	Conducted weekly or as needed to evaluate and address jobsite hazards	Filed at jobsite with other periodic project review files	NECA eSafetyLine www.esafetyline.com/neca/manual http://www.ezosha.com/Jobsite%20Safety%20Inspection%20Checklist.pdf
Accident Investigation Forms	Used to collect data for investigation, entry into OSHA Logs and company database	Filed with company OSHA records	NECA eSafetyLine www.esafetyline.com/neca/manual
Job Briefings Protocol	Describes the procedures for and a checklist for performing Job Briefings	Filed with Jobsite safety records	NECA eSafetyLine www.esafetyline.com/neca/manual NFPA 70E Annex I Job Briefing and Planning Checklist www.nfpa.org
Safety Committee Meeting Forms	Used to maintained a record of Committee activities and recommendations	Filed with Safety Committee records	NECA eSafetyLine www.esafetyline.com/neca/manual
Electrical Construction Employee Safety Handbook	An employee pocket guide as a reference to basic safety rules and precautions	Provided to each employee upon hire	NECA Store http://necanet.org/publications/
Training Attendance Rosters	Documents used to identify training completed and employees present	Filed with company personnel records	NECA eSafetyLine www.esafetyline.com/neca/manual
Disciplinary Actions	Used to identify actions taken	Filed with company personnel records	NECA eSafetyLine www.esafetyline.com/neca/manual

2. AERIAL LIFTS, INCLUDING BOOM TRUCKS AND SCISSOR LIFTS

A. PURPOSE AND SCOPE

The goal of the following Aerial Lift Program is to eliminate or minimize accidents. Aerial lifts are used and operated by a number of Company personnel. These lifts are used in construction, inspection, and repair services to lift employees to an elevated work platform. This guidance document outlines training, inspection, maintenance and general requirements necessary for the safe use of lifts. The Safety Director and Supervisor are responsible for ensuring that all elements of this guide are followed.

Aerial lifts are considered to include but not limited to any of the following:

- Vehicle mounted aerial devices to elevate personnel to work areas not accessible from the ground
- Extendible boom platforms
- Aerial Ladders
- Scissor/Genie Lifts
- Articulation booms
- Vertical Towers

Any combination of devices listed above

B. RESPONSIBILITIES

Safety Director

The Safety Director will:

- Provide a copy of the Plan to employees free of charge and within 15 days of the request
- Maintain reports of any incident. The report will include the first-aider's name, the date, time and description of the incident.
- Ensure that employees are properly trained in operations and incident reporting procedures.

Supervisors

Supervisors will:

- Be trained on the operation requirements by or under the direction of the Safety Director.
- Report all incidents to the Safety Director as soon as possible or before the end of the work shift.
- Use appropriate Personal Protective Equipment (PPE) when operating the equipment.

Employees

All employees will:

- Abide by all engineering controls and safe work practices in place to minimize potential incidents. This includes, but is not limited to, use of the appropriate PPE.

C. ENGINEERING CONTROLS AND WORK PRACTICES

Engineering controls and work practice controls will be used to prevent incidents.

D. PERSONAL PROTECTIVE EQUIPMENT

All PPE including the personal fall arrest system must be inspected prior to each use for mildew, wear, damage and other deterioration. Defective PPE and components must be removed from service. All damaged/defective PPE must be reported to the operator's supervisor. All users of lifts are required to wear a personal fall arrest system consisting of a full body harness and a lanyard properly attached to the lift basket.

All personnel must remain tied-off until work is finished and the basket has been safely lowered to the ground. All personnel working from an aerial lift may only tie off to the basket or boom of the lift. Tying off to an adjacent pole, structure or other equipment is strictly prohibited.

It is critical that the appropriate fall protection equipment is selected and that personnel understand how to utilize the equipment. The manufacturer's instructions included with the fall arrest systems, and positioning devices must be read prior to each use to ensure that it is appropriate for the particular situation or environment.

Personal fall arrest systems must:

- Limit maximum arresting force on an employee to 1,800 pound when used with a body harness
- Bring an employee to a complete stop and limit maximum deceleration distance an employee travels to 3.5 feet.
- Have sufficient strength to withstand twice the potential impact energy of an employee free falling a distance of six feet, or free fall distance permitted by the system, whichever is less.

Personal fall arrest system must be rigged such that an employee cannot free fall more than six feet or contact a lower level.

Personnel fall arrest systems or components subjected to impact loading must be immediately removed from service and must not be sued again for employee protection unless inspected and determined by a competent person to be undamaged and suitable for reuse.

A PPE hazard assessment must be conducted prior to conducting any work to determine if and what type of additional PPE is required. The Supervisor or Manager of the Department using the lift is responsible for ensuring that any required PPE is acquired, personnel are trained and that the PPE is properly worn.

E. EMPLOYEE INFORMATION AND TRAINING

All operators of lifts must receive specific lift familiarization and operational training specific to the make and model that they will be operating. The Supervisor or Manager of the Department using the lift is responsible for ensuring that anyone who uses an aerial lift receives the appropriate training. Training must be conducted by a certified trainer. The training must include a review of the following at a minimum:

- Location of weather resistant compartment where manual is stored
- All safety placards and warnings
- All switches, drive mechanisms, adjustments and controls (both lower and upper controls)
- The functional operation of the lift
- The use of outriggers and stabilizing equipment
- All gauges, horns and lights
- Proper fueling and/or battery charging procedures
- Inspections and the inspection process

F. TRAINING

General-Classroom

All personnel who operate and use aerial lifts must attend an appropriate safety training program prior to operating a lift or being a passenger. The Supervisor or Manager of the Department using the lift is responsible for ensuring that anyone who uses an aerial lift receives the appropriate training. Training must be conducted by a certified trainer. The training must include the following at a minimum:

- Purpose and use of manuals and where they must be located
- Pre-start inspection process
- Identification of malfunctions and problems
- Factors affecting stability
- Purpose of placards and decals
- Workplace inspections
- Safety rules and regulations
- Use, care and inspection of any required PPE and Personal fall arrest system
- Emergency action plan procedures
- Authorization to operate
- Emergency action plan procedures
- Operators warnings and instructions

Specific Lift Familiarization Training-Operational

All operators of lifts must receive specific lift familiarization and operational training specific to the make and model that they will be operating. The Supervisor or Manager of the Department using the lift is responsible for ensuring that anyone who uses an aerial lift receives the appropriate training. Training must be conducted by a certified trainer. The training must include a review of the following at a minimum:

- Location of weather resistant compartment where manual is stored
- All safety placards and warnings
- All switches, drive mechanisms, adjustments and controls (both lower and upper controls)

- The functional operation of the lift
- The use of outriggers and stabilizing equipment
- All gauges, horns and lights
- Proper fueling and/or battery charging procedures
- Inspections and the inspection process

Frequency of Training

All employees must receive an annual refresher training and performance evaluation. The annual refresher training must include the following at a minimum:

- Review of this Guide
- Review of site specific safety procedures and equipment
- Operator evaluation
- Updated information on new equipment

Refresher training is also required:

- If an operator has been observed to operate a lift in an unsafe manner
- If an operator has been involved in an accident or near-miss incident
- Is an operator has received an evaluation that reveals the operator is not operating the lift safely
- If a new lift has been introduced or the Operator has been assigned to a different type of lift
- If conditions in the workplace change in a manner that could affect the safe operation of the lift.

Training Records

All training records must be maintained by the department and be readily available for review upon request. All training records must include the minimum:

- Subject of Training
- Date of Training
- Name of individual trained
- Name of Company and Trainer

G. INSPECTIONS

Inspections

Inspections are a critical step in the prevention of aerial lift incidents or injuries. All identified issues observed during any inspection must be immediately corrected. In addition, the lift must be immediately removed from service until the necessary corrective actions have been conducted. The Supervisor of employees using the lift is responsible for ensuring that all required inspections are conducted and properly documented.

Pre-Start Inspection

A pre-start inspection (visual and functional test) must be conducted prior to using the lift each day or at the beginning of each shift. A copy of the most recent pre-start inspection must be stored on the lift. The pre-start inspection must include the following at a minimum:

- Operating and emergency controls
- Safety Devices
- Personal Protective Devices
- Air, hydraulic and fuels system leaks
- Cables and wiring harness
- Loose or missing parts
- Tires and wheels
- Placards, warnings, control markings and operating manual(s)
- Outriggers, stabilizers and other structures
- Guardrail system
- Other items specified by the manufacturer

Workplace Inspection

Workplace inspections must be conducted prior to use. The operator must visually check the workplace area where the lift is to be used to identify potential hazards. These hazards include but are not limited to:

- Drop-off or holes
- Slopes
- Bumps or floor obstructions
- Debris
- Overhead obstructions and energized power lines
- Hazardous locations and atmospheres
- Inadequate surface and support to withstand all load forces imposed by the aerial lift platforms.
- Wind and Weather Conditions

NOTE: Operation of aerial lifts outdoors is prohibited when wind speeds or gust reach 28 mph, when there is a wind or gust warnings in effect of 28 mph or more, when lightening is visible, or

when thunder storm warnings are in effect. In addition, all weather restrictions specified in the lift manual or stated on the lift must be followed.

- Presence of pedestrians or any other unauthorized people.
- Other possible unsafe conditions

Frequent Inspections

A frequent inspection shall be performed on all lifts when the device if first acquired, on a quarterly basis (or in service use for 150 hours) or more often if recommended by the manufacturer of the lift. A frequent inspection should also be completed if the lift has been out of service for more than 3 months. The inspection shall be performed by a qualified mechanic who is authorized to perform maintenance duties on the lift. The inspection must include all items specified by the manufacturer.

Annual Inspections

Annual inspection must be performed on each lift every twelve months. The inspection shall be performed by a qualified mechanic who is authorized to perform maintenance duties on the lift. The inspection must include all items specified by the manufacturer.

H. GENERAL

- Any lift not in safe operating condition must be removed from service.
- Repairs to the fuel and ignition systems of the lifts that involve fire hazards, must be conducted only in locations designated for such repairs.
- The battery must be disconnected for any repair involving the electrical system.
- All parts used in the repair and maintenance of the lift must be recommended by the manufacturer.
- Fuel tanks must not be filled while the engine is running
- Spillage of oil or fuel must be carefully cleaned up and the fuel tank replaced before restarting the engine.
- Proper Personal Protective Equipment (PPE) must be used when conducting any required maintenance

Battery Changing & Charging

- Must be conducted in an intrinsically safe environment with adequate ventilation.
- Facilities must be provided for
- Flushing and neutralizing spilled electrolyte
- Fire Protection (example-10-lbs ABC fire extinguisher within 20 feet)
- Protection of Charging apparatus

- Emergency Eyewash must be accessible in any area where electrolyte is added to the batteries
- Precautions must be taken to prevent open flames, sparks, or electric arcs in battery charging areas
- Proper PPE (protective clothing including face shields, long sleeves, boots, aprons and gloves) must be provided and worn

Safe Work Practices

- Ensure that personnel who operate or utilize lifts are authorized and trained in the safe use and operation of the lift.
- All personnel must read and understand this guide as well as any manufactures manual.
- Review previous inspections, especially the previous pre-start inspections, for any previously identified issues, comments or notes prior to operating the lift.
- All required inspections must be conducted and documented
- Never override hydraulic, mechanical or electrical safety devices.

Weather & Wind Conditions

Wind and weather conditions can have an adverse impact on the safe use of aerial lifts when used outdoors. Wind and weather conditions must be evaluated each day prior to the use of the lift. In addition, the continual evaluation of the weather and wind must be conducted throughout the entire use of the lift.

Operation of aerial lifts outdoors is prohibited when wind speeds reach 28 mph, when there is a wind warning in effect of 28 mph or more, when lightening is visible, or when thunder storm warnings are in effect.

Working Surfaces

All personnel must always stand firmly on the floor of the basket and must not sit or climb on the edge of the basket. Personnel must never attempt to climb outside of the basket or over extend the upper body beyond the railing of the basket.

Personnel may only perform work in areas which can be reached from inside the basket of the lifting device. Lifts may not be used in combination with other devices such as ladders, planks or scaffolding.

Load Limits

Load limits for the boom and basket must not be exceeded. Load limits for the boom and basket must be posted in a visible location on the lift. Boom and basket load limits must be specified by the manufacturer or by any other equivalent entity, such as a nationally recognized laboratory.

Vehicle Positioning

Prior to executing a lift, the vehicle in which the lift is mounted needs to be positioned in such a way as to allow the boom and basket a full range of motion inside the work area. With some types of lifts, once the vehicle is in the desired position, special stabilizing tools such as “outriggers” and “wheel Chocks” need to be installed in order to safely operate the lift. Other type of lifts allow vehicle movement while the boom is extended and do not require stabilizing equipment. Unless the vehicle is designed to do so an aerial lift must never be moved when the boom is elevated.

Markings & Decals

In addition to any other markings or decals that are placed on the lift by the manufacturer, the following information must be displayed on all lift s in a clearly visible, accessible area and in a durable manner:

- Make, Model, serial number and manufactures name and address
- The rated workload, including rated number of occupants
- Maximum platform height

Platforms

Platforms must have the following minimum:

- Platform width must be not less than 18 inches and must have slip resistant surface
- The platform must have a guardrail system around its periphery. It should be removable or can be lowered. The means used to secure it in the normal operating position must be readily accessible for inspection and maintenance.
- The guardrail system must include a top rail that is between 39 and 45 inches high, a mid-rail that is approximately half-way from the platform to the top rail and a toe board that is at least 4 inches high.

Outriggers

Outriggers are one type of stabilizing tool. If outriggers are used, they should be positioned on “cribbing “pad or a solid surface.

Setting up and positioning the outriggers is extremely important. The aerial lift could tip over if not done properly.

- If possible, position outriggers on solid surfaces such as concrete or asphalt.
- Position outriggers on level ground
- If positioned on soil, check the soil density to ensure that the surface is stable and not recently backfilled.
- Always use cribbing when positioning outriggers on soil.

- Always bring the outrigger straight down and never at an angle.
- Never stand behind an outrigger or between an outrigger and another object when it is being retracted because the center of gravity may have shifted during lifting activities and the sudden release of the outrigger could cause the vehicle to lunge.

Brakes

Brakes provide protection against accidental movement. Prior to operating the lift, the operator must ensure that the brakes are set.

Wheel Chocks

Wheel chocks provide additional protection against accidental movement. Chocks prevent accidental movement or slippage of vehicles by bracing the wheels on either side. This is important during boom and basket movement when shifting weight can affect wheel placement. Chocks must be utilized before operating a lift.

Power Lines

Only lift with insulated buckets and approved for use near power lines can be used for work on or near power lines. The buckets insulation must be periodically inspected for decay and damage. Lifts that are not insulated or approved for work near power lines must maintain at least 10 feet from the boom and energized or suspected energized electrical lines. Always treat power lines, wires and other conductors as being energized. Personnel that are not trained electrical workers must remain at least 10 feet from power lines.

Dangerous Obstacles

Personnel must never position themselves between overhead hazards; such as joists and beams, or the rails of the basket. Accidental movement of the lift could result in a crushing hazard.

Personnel must also be aware of other obstacles. Personnel must keep a minimum distance of 10 feet from all dangerous obstacles. These include but are not limited to:

- Other vehicles
- Tools & Equipment
- Other Lifts
- Trenches and pits
- Mechanical devices
- Pot Holes
- Cranes
- Power lines

Tip-Overs

Tip-overs can occur when lifts are operated on soft or uneven ground, if the load limit is exceeded or the lift is struck by another vehicle.

- Do not exceed the manufactures rated load capacity limits
- Avoid unnecessary travel with lift in the elevated position.
- Establish a work area perimeter
- Do not drive near leading edges or holes
- Do not raise the platform on a slope or drive onto a slop when elevated.
- Do not drive on uneven or soft surfaces when elevated
- Conduct workplace inspections
- Do not use the platform in windy conditions
- Avoid excessive horizontal forces when working in an elevated lift

Pedestrian Traffic

Personnel must be constantly aware of their surroundings. All lift operators are responsible for the safety of the people in the vicinity of the lifting equipment. In the event that aerial lift work needs to be conducted in the vicinity of people, operators must take special precautions to ensure that the work area is isolated from pedestrian traffic.

Signs, Caution Tape and Barriers

The lift boom and basket must never be positioned above pedestrians and other workers. Is a lift is going to be sued in an area near pedestrian traffic; operators are required to isolate the work area by establishing a perimeter and safely diverting the pedestrian traffic. Danger signs, caution tape and barriers must be used to create the perimeter of the work area. The operator of the lift must ensure that the lift, boom and basket remain within the perimeter at all times.

When pedestrian traffic is diverted, signs must be posted to direct the people in the appropriate direction. Campus police must be consulted prior diverting any pedestrians onto a street or location where vehicles are located. Additional signs must be posted at all entrances and around the perimeter of the work area to warn pedestrians that dangerous work is being conducted.

I. RESOURCES AND REFERENCES

To effectively execute the policy and procedures identified in this section of our safety manual the following documents may be used. The documents will be filed with our company records (personnel files, OSHA Recordkeeping, etc.) as noted in the table. Copies of documents that do not include sensitive personnel information will be provided to host employer/general contractor/construction manager upon request.

TITLE	PURPOSE	MAINTENANCE	SOURCE
Training Attendance Rosters	Documents used to identify training completed and employees present	Filed with company personnel records	NECA eSafetyLine www.esafetyline.com/neca/manual

3. BLOODBORNE PATHOGENS EXPOSURE CONTROL PROGRAM

A. PURPOSE AND SCOPE

The goal of the following Exposure Control Plan (ECP) is to eliminate or minimize occupational exposures to Bloodborne pathogens.

The basis of this Plan is the OSHA Bloodborne Pathogens Standard, 29 CFR 1910.1030. Although this is a General Industry standard, it can be applied to construction activities where exposure may occur, such as protection for first-aid responders. As required by OSHA in 1926.50 Medical services and first aid and consistent with the direction in NFPA 70E Standard for Electrical Safety in the Workplace, first-aid responders will be available on all company jobsites. This program will therefore provide protection for these individuals against bloodborne pathogens.

B. EMPLOYEE EXPOSURE DETERMINATION

Occupational exposure to blood and body fluids is limited to our designated first-aid responders or employees engaged in special duties where that potential may exist. However, any employee who in the unlikely event has been exposed to blood or body fluids should immediately report it their supervisor to determine the appropriate action as it relates to possible exposure to bloodborne pathogens.

Our facility has decided to: (check appropriate line).

____ Offer hepatitis B vaccination to the first-aid provider after an exposure has occurred.

____ Offer pre-exposure vaccination.

C. RESPONSIBILITIES

Safety Director

The Safety Director will:

- Provide a copy of the Plan to employees free of charge and within 15 days of the request
- Maintain reports of any exposure incident. The report will include the first-aider's name, the date, time and description of the exposure incident.
- Train first-aid providers on the Bloodborne Pathogen requirements including the specifics required for reporting procedures.
- Ensure that any first-aider requesting the Hepatitis B vaccine series after an exposure incident receives it as soon as possible, but no later than 24 hours after the incident.
- Review and update the ECP annually, or as needed, to include any new or modified tasks and procedures that affect occupational exposure. The update will include any new or revised employee positions with occupational exposure.

First-Aid Responders

First-Aid Responders will:

- Be trained on the Bloodborne Pathogen requirements by or under the direction of the Safety Director.

- Report all first aid incidents where blood or potentially infectious materials are present to the Safety Director before the end of the work shift.
- Use appropriate Personal Protective Equipment (PPE) when attending to an exposure incident.

Health Care Provider

The Health Care Provider (HCP) will:

- Conduct post exposure examinations and administer vaccinations as needed.

Employees

All employees will:

- Abide by all engineering controls and safe work practices in place to minimize potential exposure. This includes, but is not limited to, hand washing and use of the appropriate PPE.

D. ENGINEERING CONTROLS AND WORK PRACTICES

Engineering controls and work practice controls will be used to prevent or minimize exposure. Hand washing facilities are available at all jobsites. Employees will wash after administering first-aid. All equipment will be decontaminated or discarded in appropriate containers.

E. PERSONAL PROTECTIVE EQUIPMENT

First-aid responders will use PPE appropriate for administering the first-aid required. All jobsite first-aid kits will contain:

- Gloves
- Eye protection
- Resuscitation bags and mouthpieces
- Face shield or masks

F. HOUSEKEEPING

In the event of a first-aid incident or other exposure covered by this Plan, the first-aid responders exposed will take precautions to decontaminate work surfaces, tools and equipment. PPE will be used during cleanup.

Mechanical means such as tongs, forceps or a brush and a dust pan will be used to pick up contaminated broken glassware. The waste will be treated as regulated waste and disposed of in sealed and labeled or color-coded containers. When storing, handling, transporting or shipping regulated waste, it will be in containers that are constructed to prevent leakage. The waste will be discarded according to federal, state, and local regulations.

In the event of a first-aid incident in which the first-aid responder's clothes become contaminated, the following actions will be taken:

- Contaminated laundry will be handled as little as possible and with a minimum of agitation.
- Appropriate PPE will be worn when handling contaminated laundry.
- Contaminated laundry will be placed in color-coded bags at its location of use, and taken by a commercial launderer. The launderer will be given the appropriate warnings.

Labeling

Biohazard warning labels will be placed on all containers for wastes which may be contaminated with blood or body fluids, or red bags will be used as required.

G. TRAINING

All designated first-aid responders or other employees covered by this Plan will receive training conducted by or under the direction of the Safety Director. The training program will cover, at a minimum, the following elements:

- A copy and explanation of the standard
- Causes, control and symptoms of Bloodborne pathogens
- Modes of transmission of Bloodborne pathogens
- The ECP and a way to obtain a copy
- Methods to recognize tasks that risk exposure and other activities that may involve exposure to blood
- Use and limitations of Engineering Controls, Work Practices, and PPE
- PPE types, use, location, removal, handling, decontamination, disposal and basis for selection
- Availability procedures for the Hepatitis B Vaccine and the availability at no cost. (Training will be given prior to vaccination on its safety, effectiveness, benefits, and method of administration.)
- Emergency procedures for blood and other potentially infectious materials
- Exposure incident procedures
- Post-exposure evaluation and follow-up
- Signs, labels and/or color coding
- Question and answer session

H. POST EXPOSURE EVALUATION AND FOLLOW-UP

The Safety Director is to be contacted immediately following an exposure incident. A confidential medical evaluation and follow-up will be conducted by _____.

The follow-up will include:

- Documentation of the routes of exposure and how exposure occurred.
- Identification and documentation of the source employee, unless infeasible or prohibited by State or local law.
- Obtaining consent from the source employee and testing the blood, documenting these blood test results.
- If the source employee is known to be infected, testing need not be repeated.
- Providing the exposed employee with the source individual's test results, and information about applicable disclosure laws and regulations concerning the source individual’s identity and infectious status.
- Obtaining consent from the exposed employee, collecting blood as soon as is feasible after the exposure incident and test blood for HBV and HIV serological status.
- If the employee does not give consent for HIV serological testing during the collection of blood for baseline testing, the baseline blood sample will be preserved for at least 90 days.

The circumstances of exposure incidents will be reviewed to determine if procedures, protocols and/or training need to be revised.

I. HEALTH CARE PROFESSIONALS

Health care professionals (HCPs) responsible for employee's HB vaccination, post-exposure evaluation and follow-up will be given a copy of the OSHA Bloodborne Standard. The health care professional evaluating an employee after an exposure incident will also receive:

- A description of the exposed employee's job duties relevant to the exposure incident
- Routes and circumstances of exposure
- Results of the source employee's blood test, if available
- Relevant employee medical records, including vaccination status.

J. HEALTH CARE PROFESSIONAL'S WRITTEN OPINION

The designated Health Care Professional will provide the exposed employee with a copy of the evaluating Health Care Professional's written opinion within 15 days after completion of the evaluation.

The written opinion for post-exposure evaluation and follow-up will be limited to whether or not the exposed employee has been informed of the results of the medical evaluation and any medical conditions which may require further evaluation and treatment. For HB vaccinations, the opinion will be limited to whether the employee required or received the vaccine. All other diagnoses must remain confidential and not be included in the written report to the employer.

K. RECORDKEEPING

Medical Records

Medical records are maintained for each employee with exposure in accordance with 29 CFR 1926.33 or 1910.20. In addition to the requirements of this standard, the medical records will include:

- The name and social security number of the exposed employee
- A copy of the exposed employee's Hepatitis B vaccination records and any medical records relative to the employee's ability to receive vaccinations
- A copy of all results of examinations, medical testing, and follow-up procedures as required
- A copy of all HCP's written opinion(s) as required by the standard

Employee medical records will be kept confidential and will not be disclosed or reported without the employee's express written consent except as required by the standard or by law.

Employee medical records shall be maintained for at least the duration of employment plus 30 yrs.

Employee medical records shall be provided (within 15 working days) upon request of the employee or to anyone having written consent of the employee.

Training Records

Bloodborne pathogen training records will be maintained by the Safety Director at a designated location.

Transfer of Records

If the company ceases to do business and there is not a successive employer, the employer shall notify the Director of the National Institute for Occupational Safety and Health (NIOSH) at least 3 months prior to a scheduled records disposal, and prepare to transmit them to the Director of NIOSH.

L. CREDENTIAL INFORMATION

Designated First-Aid Providers: _____

Medical Evaluations Performed By: _____

Designated Health Care Professional: _____

M. RESOURCES AND REFERENCES

To effectively execute the policy and procedures identified in this section of our safety manual the following documents may be used. The documents will be filed with our company records (personnel files, OSHA Recordkeeping, etc.) as noted in the table. Copies of documents that do not include sensitive personnel information will be provided to host employer/general contractor/construction manager upon request.

TITLE	PURPOSE	MAINTENANCE	SOURCE
Credential Information	Used to compile the names of all those responsible in case of an exposure incident	Filed with the ECP	NECA eSafetyLine www.esafetyline.com/neca/manual
Bloodborne Pathogen Checklist	Used to ensure that appropriate PPE is provided.	Filed with company Safety Records	NECA eSafetyLine www.esafetyline.com/neca/manual
Medical Records	Documents used to maintain information on employees' medical status, vaccination status, and work readiness.	Filed with company Safety Records	NECA eSafetyLine www.esafetyline.com/neca/manual Various sources including HCP
Training Attendance Rosters	Documents used to identify training completed and employees present	Filed with company personnel records	NECA eSafetyLine www.esafetyline.com/neca/manual
Hepatitis B Vaccination Declination	Allows company to track employees that refuse vaccination	Filed with company personnel records	NECA eSafetyLine www.esafetyline.com/neca/manual Washington State Department of Labor and Industries http://www.lni.wa.gov/wisha/Rules/bbpathogens/HTML/HT5.htm

4. CONFINED SPACE ENTRY PROGRAM

A. PURPOSE AND SCOPE

It is the policy of the company that the first consideration in the performance of work shall be the protection of the safety and health of all employees. The company has developed this Confined Space Entry Program to ensure that all employees receive adequate training and information relevant to the possible hazards that may be involved when entering and working in enclosed or confined spaces. The following program outlines how we will accomplish this objective.

B. RESPONSIBILITIES

Safety Director

The Safety Director will:

- Monitor this Confined Space program. Questions regarding this program and any information associated with it should be directed to the Safety Director.

Employees

Affected employees will:

- Follow all safety procedures described in this program. All questions should be referred to the Safety Director or Supervisor.

C. DEFINITIONS

1. CONFINED SPACE:
   A working space meeting **all** of the criteria listed below:
   - Large enough for someone to enter and work
   - Limited or restricted means for entry or exit
   - Not designed for continuous occupancy.

   Examples of possible confined spaces: tanks, transformers, circuit breakers, ventilation or exhaust ducts, tunnels, and pipelines.

2. ENCLOSED SPACE:
   A working space meeting **all** of the criteria listed below:
   - Large enough for someone to enter and work
   - Limited or restricted means for entry or exit
   - Is designed for periodic employee entry under normal operating conditions.
     Note: This space under normal conditions does not contain a hazardous atmosphere, but may under abnormal conditions.

   Examples of enclosed spaces are: a manhole, vault, switching cubicle, tunnel, or shaft.

3. HAZARDOUS ATMOSPHERE:
   An environment that may expose employees to the risk of death, incapacitation, and impairment of ability to self-rescue (that is, escape unaided from an enclosed space), injury, or acute illness from one or more of the following causes:
   - Atmospheric oxygen concentration below 19.5% or above 23.5%
   - Flammable gas, vapor, or mist in excess of 10% of its lower flammable limit
   - Any other atmospheric condition that is immediately dangerous to life or health.

4. PERMIT-REQUIRED CONFINED SPACE:
   A **confined space** that has one or more of the following characteristics:

- Contains or has the potential to contain a hazardous atmosphere
- Contains material which has the potential for engulfing an entrant
- Has an internal configuration where an entrant may become entrapped or asphyxiated by inwardly converging walls or by a floor sloping downward and tapering to a smaller cross-section
- Contains any other recognized serious safety or health hazard (i.e., a safety hazard that exposes entrants to the risk of death, incapacitation, impairment of ability to self-rescue, injury.)

5. VENTED VAULT:
   A vault that has provisions for air changes using exhaust stacks and low level air intakes operating at differentials of pressure and temperature providing for air flow which precludes the development of a hazardous atmosphere.

D. HAZARD DETERMINATION

This company does not intend to perform the initial evaluation of any confined space. It has chosen to rely upon the evaluation performed by the host employer or its designee to satisfy the requirements for safe entry into the confined space. The Company's employees are not trained to enter and/or work in confined spaces that require the use of a “full permit” for entry. Our employees are trained to work in enclosed spaces or confined spaces that can utilize “Alternative Procedures” for entry and work, or one that does not require a permit (i.e. a Non Permit Required confined space.) As these spaces will be treated in the same manner to ensure safe entry the terms confined space and enclosed spaces will used interchangeably in this program.

The entering of any confined space can be very hazardous unless proper safety precautions are taken. For example, a person might work in a small area under several adverse conditions, such as poor lighting, slippery work surfaces, excessive noise levels, toxic and flammable gases, and oxygen deficient atmosphere.

Proper safety precautions shall be taken to ensure these conditions are controlled such that employees who are required to work in confined spaces are provided a safe and healthful work environment.

E. CONFINED SPACE ENTRY: NON-PERMIT

Confined spaces may be classified as non-permit spaces if all atmospheric and/or other safety hazards are eliminated. A reclassification worksheet will be used to ensure that steps are taken to identify that the hazards have been removed.

When changes occur within or to a non-permit space that may create an atmospheric hazard the following actions will be taken:

1. Evacuate the space immediately.
2. Evaluate how the hazardous atmosphere developed.
3. Eliminate condition(s) that created the problem, if possible.
4. Reentry using “alternate procedures” may be necessary.

F. CONFINED SPACE ENTRY: ALTERNATIVE PROCEDURES

1. Confined spaces that have been reclassified as non-permit spaces by removal of potentially hazardous atmospheres through the use of ventilation can be entered in the same manner as an enclosed space.
2. Safe work practices must be used during entry into and work within confined spaces, and for rescue of workers from such spaces. Be sure that employees are trained in safety-related work practices and procedures, and other safety requirements related to job assignments (e.g., general safety and welding, cutting, and electrical work safety requirements.)

3. Employees who enter confined spaces must be trained in the following:
   - Hazards of confined space entry
   - Confined space entry procedures
   - Confined space rescue procedures.

4. Appropriate rescue equipment must be available to ensure the prompt and safe rescue of employees from the confined space.

5. Before removing the entrance cover to any confined space, identify and remove all hazards:
   - Check for the presence of atmospheric pressure or temperature differences
   - Evaluate the possibility of a hazardous atmosphere; e.g., oxygen deficiency, flammable gases, Carbon Monoxide (CO), or Hydrogen Sulfide (H_2S) in the space by checking for expected conditions within the space

6. As mentioned above, employees are prohibited from entering any "permit required" confined space because they have not been trained to do so.

7. Test instruments used to monitor atmospheres in a confined space must be kept in calibration according to manufacturer's recommendations.

8. Before an employee enters a confined space, the internal atmosphere must be tested from outside the space for oxygen deficiency (and flammable gases and vapors, as appropriate) with a direct-reading meter or similar instrument capable of collection and immediate analysis of data samples without the need for off-site evaluation.

   NOTES:
   - If oxygen levels are below "normal" the flammability test will not be accurate.
   - If it is not anticipated that a "hazardous atmosphere" could develop, the atmosphere within the confined space must be periodically or continuously monitored (e.g., area monitors, personal monitors, etc.), to ensure that the accumulation of a hazardous atmosphere does not occur.
   - If it is reasonably anticipated that a "hazardous atmosphere" could develop, continuous forced-air ventilation shall be used, and the atmosphere within the confined space shall be continuously monitored (e.g., area monitors, personal monitors, etc.), to ensure that the continuous forced-air ventilation is preventing the accumulation of a hazardous atmosphere.
   - Be sure a hazardous atmosphere (Immediate Danger to Life and Health or IDLH) does not exist within the confined space when an individual is inside.

9. When it has been determined that the space is safe for entry, a written certification will be made available to each employee entering the confined space. The "Confined Space Checklist" at the end of this program can be used for this purpose.

10. If a hazardous atmosphere is detected upon entry or while working the following actions will be taken:
    - Evaluate the confined space entry immediately
    - Evaluate how the hazardous atmosphere developed
    - Take actions to ensure the hazardous atmosphere is controlled or perform pre-entry testing just prior to re-entry to ensure the atmosphere is safe for re-entry.

11. If flammable gases or vapors are detected, or an oxygen deficiency is found, forced air ventilation will be used to maintain oxygen at a safe level and to prevent a hazardous concentration of gases or vapors from accumulating. It is permissible to use a continuous monitoring program in place of ventilation to ensure that there is no increase in flammable gas or vapors, once safe levels of these substances have been detected.

12. If continuous forced air ventilation is used, it will begin before any entry occurs into the confined space or enclosed space, and must be maintained until a safe atmosphere is confirmed, before employees are allowed to enter the work area. The ventilation will be directed so that it ventilates the immediate area where employees are present within the confined space. Forced ventilation will continue until all employees have left the space unless continuous monitoring is used.

13. The air supply for continuous forced ventilation must be from a clean source, and must not increase the hazards in the confined space. If open flames are used in the confined space, perform a test for flammable gases and vapors **immediately before** the open flame device is used, and at least once per

hour while the device is in use. Conduct testing more often if conditions within the confined space indicate that once per hour is insufficient to detect hazardous accumulations of flammable gases or vapors.

G. RESOURCES AND REFERENCES

To effectively execute the policy and procedures identified in this section of our safety manual the following documents may be used. The documents will be filed with our company records (personnel files, OSHA Recordkeeping, etc.) as noted in the table. Copies of documents that do not include sensitive personnel information will be provided to host employer/general contractor/construction manager upon request.

TITLE	PURPOSE	MAINTENANCE	SOURCE
Permit-required Confined Space Written Program	A written program required when the space contains a hazard and the host employer does not provide a program for their facility	Added to this jobsite program as needed	NECA eSafetyLine www.esafetyline.com/neca/manual
Confined Space Entry Checklist	Used to determine that all requirements are met	File with jobsite safety specifications	NECA eSafetyLine www.esafetyline.com/neca/manual
Confined Space Entry Permit	Used to control entry into the permit space when work is to be performed in a Permit-required Confined Space.	Post at confined space and file when entry complete	NECA eSafetyLine www.esafetyline.com/neca/manual http://www.complianceregs.com/checklists/confined_space.pdf
Reclassification Worksheet	Used to reclassify the space as a non-permit entry space	File with jobsite safety assessment documents	NECA eSafetyLine www.esafetyline.com/neca/manual http://www-esh.fnal.gov/FESHM/5000/5063_Form3.pdf
Recognition Form	Used to determine if a space is a confined space and a permit or non-permit space	File with jobsite safety assessment documents	NECA eSafetyLine www.esafetyline.com/neca/manual
Host Employer Worksheet	Given to the Host employer to determine permit required confined spaces, associated hazards and if they have a procedure to be used in lieu of the contractor's program	File with jobsite safety assessment documents	NECA eSafetyLine www.esafetyline.com/neca/manual
Training Attendance Rosters	Documents used to identify training completed and employees present	Filed with company personnel records	NECA eSafetyLine www.esafetyline.com/neca/manual

CONFINED SPACE ENTRY: CHECK- LIST

LOCATION:

TYPE OF WORK:

(1)	ATMOSPHERIC TEST	ACCEPTANCE LIMITS
	OXYGEN _____%	BETWEEN: 19.5% - 23.5%
	COMBUSTIBLES: _____	LEL: LESS THAN 10%
	CARBON MONOXIDE	UNDER 35 PPM
	HYDROGEN SULFIDE	UNDER 10 PPM

		YES	NO
(2)	VENTILATING SPACE	_____	_____
(3)	GUARD RAIL AROUND OPENING	_____	_____
(4)	ATMOSPHERE MONITORED INITIAL (must be done) _____ CONTINUOUS _____PERIODIC _____	_____	_____
(5)	DOES THIS JOB REQUIRE AN OPEN FLAME?	_____	_____

(6) LIST ANY SPECIAL EQUIPMENT THAT IS REQUIRED FOR THIS JOB:

(7) DESCRIBE ANY SPECIAL PRECAUTIONS THAT MUST BE FOLLOWED DURING THIS ENTRY:

CHECK LIST COMPLETED AND IS SAFE FOR ENTRY

SIGN: _____ DATE:_____

5. ELECTRICAL SAFETY PROGRAM

5.0 ELECTRICAL SAFETY

A. PURPOSE AND SCOPE

A universal safety concept is to control all forms of hazardous energy. This applies to all forms of energy including, mechanical, pneumatic, hydraulic and electric. This Electrical Safety Program will focus on safely working with electrical hazardous energy.

This company normally does work covered by OSHA's 29 CFR 1910.147, Subpart S Electrical of the General Industry Standards & Subpart K Electrical of the Construction Industry Standards and the National Electrical Code (NEC). In some instances work is done that is covered by OSHA's 29 CFR 1910.269 & 1926 Subpart V and the National Electrical Safety Code (NESC). It also recognizes that NFPA 70E the Standard for Electrical Safety in the Workplace offers guidance on certain electrical safety procedures.

OSHA and the NFPA 70E:

OSHA requirements are not recommendations. There are a number of OSHA requirements that address the hazards of working on or near exposed energized parts for construction and maintenance work. These requirements are often written in performance language, requiring compliance without necessarily stating how to comply.

The NFPA 70E, Standard for Electrical Safety in the Workplace, is written in prescriptive language and is an important national consensus standard that defines the requirements for an overall electrical safety program.

As such, the procedures found within this policy are taken directly from the NFPA 70E - 2009 edition and will cover the majority of the work locations and tasks our electricians and contractors face. It is NOT all encompassing.

Certain tasks performed on very high hazard electrical systems and equipment, those with high level available fault currents and / or long fault clearing times, or exposures exceeding 600 volts, will require the direct use of the NFPA 70E standard to determine proper PPE and work procedures.

B. RESPONSIBILITIES

General Contractor/Host

The General Contractor/Host will:

- Review the letter provided by our company on Customer or General Contractor electrical related hazards and responsibilities.
- inform our Safety Director of known hazards associated with electrical installation, maintenance or repair that is related to the work our company will be performing and might not be recognized by our employees
- inform our Safety Director about the installation that the contract employer needs to make the assessments
- report any safety violations by our employees that are observed to our Safety Director

Safety Director

The Safety Director will:

- Monitor this Electrical Safety Program. Questions regarding this program and any information associated with it should be directed to the Safety Director.

- Ensure that all employees are properly trained for the tasks they will perform. Only persons specifically approved by the Safety Director may install, modify, repair, or work on electrical conductors and equipment.
- Participate in the approval of all energized work and preparation of the Energized Electrical Work Permit required for work to begin.
- With the assistance of the supervisor and/or their designees, perform periodic assessments of employees to ensure their abilities are appropriate for the tasks performed.
- Perform an audit annual of the electrical safety principles identified in this program.

Supervisors

Supervisors will:

- Ensure that safe work methods and procedures are being utilized.
- Ensure that the right tools are available and used for the jobs performed.
- Ensure required inspections, testing and maintenance are performed. Where tools or equipment are found to be defective, they shall be tagged, removed from service, and reported to Safety Director as soon as possible.

Employees

All employees:

- Must continuously remain alert to his or her surroundings and the work activities being performed.
- Will follow all safety procedures described in this program.
- Will perform inspections on all equipment and tools before each use. Where tools or equipment are found to be defective, they shall be tagged, removed from service, and reported to supervision as soon as possible.
- Shall report any conditions or activities which pose a risk to themselves or others. Remember, when you see that a safety rule is being violated, that **silence is consent**!
- Will refer all questions to the Safety Director or Supervisor

C. ELECTRICAL SAFETY PRINCIPLES AND CONTROLS

The following basic principles are the foundation upon which this electrical safety program has been established. All company employees including management, the Safety Director, Supervisors and employees shall apply these principles to the all tasks.

- The inspection and evaluation of electrical equipment shall be part of all procedures.
- All electrical conductors and circuit parts shall be considered energized until tested and proven otherwise.
- The integrity of equipment enclosures and insulation shall be maintained unless exposure is absolutely necessary and actions have been taken to provide the appropriate protection (e.g. work cannot be performed with the enclosure in place and equipment and conductors have been placed in an electrically safe work condition or an Energized Electrical Work Permit has been completed in accordance with this program.)
- Work will not begin on a job unless a written plan is in place identifying the procedures to be used. Jobs which have not been performed and for which no plan exists will require the development of a new plan.
- The primary method for ensuring safety shall be to de-energize (create an electrically safe work condition) in accordance with the company Lockout/Tagout (LOTO) program in section 4.1.
- Work that must be performed energized shall be justified as follows and requires completion and approval of an Energized Electrical Work Permit.
    - Energized work shall only be justified when it can be demonstrated that de-energizing introduces additional or increased hazards or is infeasible due to equipment design or operational limitations. Energized parts that operate at less than 50 volts to ground shall

not be required to be de-energized if there will be no increased exposure to electrical burns or to explosion due to electric arcs.

- *Examples of increased or additional hazards include, but are not limited to, interruption of life support equipment, deactivation of emergency alarm systems, and shutdown of hazardous location ventilation equipment.*
- *Examples of work that might be performed on or near exposed energized electrical conductors or circuit parts because of infeasibility due to equipment design or operational limitations include performing diagnostics and testing (e.g., start-up or troubleshooting) of electric circuits that can only be performed with the circuit energized and work on circuits that form an integral part of a continuous process that would otherwise need to be completely shut down in order to permit work on one circuit or piece of equipment.*

- In preparing for a job, an effort will be made to anticipate unexpected events through a hazard/risk evaluation, completion of a planning checklist, and job briefing.
- Based on the hazard/risk evaluation, actions will be taken to minimize or eliminate hazards and protect employees from shock, burn, blast, and other hazards due to the working environment.
- Employees shall not knowingly be permitted to work on electrical circuits, parts or equipment:
  - When their alertness is recognizably impaired due to illness, fatigue, or other reasons.
  - Where obstructions or the lack of illumination prevent a clear view of the work to be performed.

D. EMPLOYEE INFORMATION AND TRAINING

All employees are trained in and familiar with:

- Safety related work practices
- Safety related work procedures
- Safety related protective equipment
- Safety related personal protective equipment.

Qualified employees are knowledgeable, trained and have demonstrated proficiency in:

- Skills and techniques necessary to distinguish exposed live parts from other parts
- Skills and techniques to determine nominal voltage of exposed live parts
- Minimum approach distances corresponding to those that the employee may be exposed,
- The proper use of special precautionary techniques, personal protective equipment (PPE), insulating and shielding materials, and insulated tools as required to perform the assigned work.

Refresher training will be conducted prior to performing those tasks which have not been performed within the past year, or when observation of the employee's work performance demonstrates the need for refresher training.

A Job Briefing shall be conducted as described in the Administrative section of this manual.

E. RESOURCES AND REFERENCES

To effectively execute this program and procedures identified in this section of our safety manual here the following documents may be used. The documents will be filed with company records as noted in the table. Copies of documents that do not include sensitive personnel information will be provided to the host employer/general contractor/ construction manager upon request.

TITLE	PURPOSE	MAINTENANCE	SOURCE
Electrical Safety Checklist	Used to identify common workplace electrical hazards	Filed with jobsite inspection records	NECA eSafetyLine www.esafetyline.com/neca/manual
Assured Equipment Grounding Program	Used to ensure the safety of electrical cords (i.e. tool power cords and extension cords) when GFCI protection is not used	Filed with company jobsite records	NECA eSafetyLine www.esafetyline.com/neca/manual
Recognizing Live Parts and Voltage	Guide used to recognize live parts and voltage at a jobsite	Filed with jobsite inspection records	NECA eSafetyLine www.esafetyline.com/neca/manual
Training Attendance Rosters	Used to identify training completed and employees present	Filed with company personnel records	NECA eSafetyLine www.esafetyline.com/neca/manual

Electric SUPPLY CO.
ELECTRICAL CONTRACTORS

ENERGIZED ELECTRICAL WORK PERMIT

PART I: TO BE COMPLETED BY THE REQUESTER:		
DATE:	JOB NUMBER:	
DESCRIPTION OF CIRCUIT/EQUIPMENT/JOB LOCATION:		
DESCRIPTION OF WORK TO BE DONE:		
JUSTIFICATION OF WHY THE CIRCUIT/EQUIPMENT CANNOT BE DE-ENERGIZED OR THE WORK DEFERRED UNTIL THE NEXT SCHEDULED OUTAGE:		
REQUESTOR/TITLE:		

PART II: TO BE COMPLETED BY THE ELECTRICALLY QUALIFIED PERSONS *DOING* THE WORK:	*PLEASE CHECK BOX ON THE RIGHT UPON COMPLETION:*
DETAILED JOB DESCRIPTION PROCEDURE TO BE USED IN PERFORMING THE ABOVE DETAILED WORK:	☐
DESCRIPTION OF THE SAFE WORK PRACTICES TO BE EMPLOYED:	☐
RESULTS OF THE SHOCK RISK ASSESSMENT:	
A. VOLTAGE TO WHICH PERSONNEL WILL BE EXPOSED	☐
B. LIMITED APPROACH BOUNDARY	☐
C. RESTRICTED APPROACH BOUNDARY	☐
D. NECESSARY SHOCK, PERSONAL, AND OTHER PROTECTIVE EQUIPMENT TO SAFELY PERFORM ASSIGNED TASK	☐
RESULTS OF THE ARC FLASH RISK ASSESSMENT:	
A. AVAILABLE INCIDENT ENERGY AT THE WORKING DISTANCE OF ARC FLASH PPE CATEGORY	☐
B. NECESSARY ARC FLASH PERSONAL AND OTHER PROTECTIVE EQUIPMENT TO SAFELY PERFORM ASSIGNED TASK	☐
C. ARC FLASH BOUNDARY	☐
MEANS EMPLOYED TO RESTRICT THE ACCESS OF UNQUALIFIED PERSONS FROM THE WORK AREA:	☐
EVIDENCE OF COMPLETION OF A JOB BRIEFING, INCLUDING DISCUSSION OF ANY JOB-RELATED HAZARDS:	☐
DO YOU AGREE THE ABOVE-DESCRIBED WORK CAN BE DONE SAFELY? (IF *NO*, RETURN TO REQUESTOR)	☐

ELECTRICALLY QUALIFIED PERSON:	
ELECTRICALLY QUALIFIED PERSON:	
MAINTENANCE/ENGINEERING MANAGER:	
MAINTENANCE/ENGINEERING MANAGER:	

PART III: SIGNATURE APPROVAL(S) TO PERFORM THE WORK WHILE ELECTRICALLY ENERGIZED:	
QUALIFIED PERSON	MAINTENANCE/ENGINEERING MANAGER
SAFETY MANAGER	ELECETRICALLY KNOWLEDGEABLE PERSON/JOB FOREMAN
PROJECT MANAGER	DATE

NOTE: ONCE THE WORK IS COMPLETE, FORWARD THIS FORM TO THE SAFETY ADMINISTRATOR FOR REVIEW AND RETENTION

FORM PRODUCED UNDER GUIDELINES PROVIDED BY THE 2015 NFPA 70E HANDBOOK FOR ELECTRICAL SAFETY IN THE WORKPLACE
INFORMATIVE ANNEX J – FIGURE J.1 SAMPLE PERMIT FOR ENERGIZED ELECTRICAL WORK (PG 286)

Electric SUPPLY CO.
ELECTRICAL CONTRACTORS

ADDITIONAL NOTES:

NOTE: ONCE THE WORK IS COMPLETE, FORWARD THIS FORM TO THE SAFETY ADMINISTRATOR FOR REVIEW AND RETENTION

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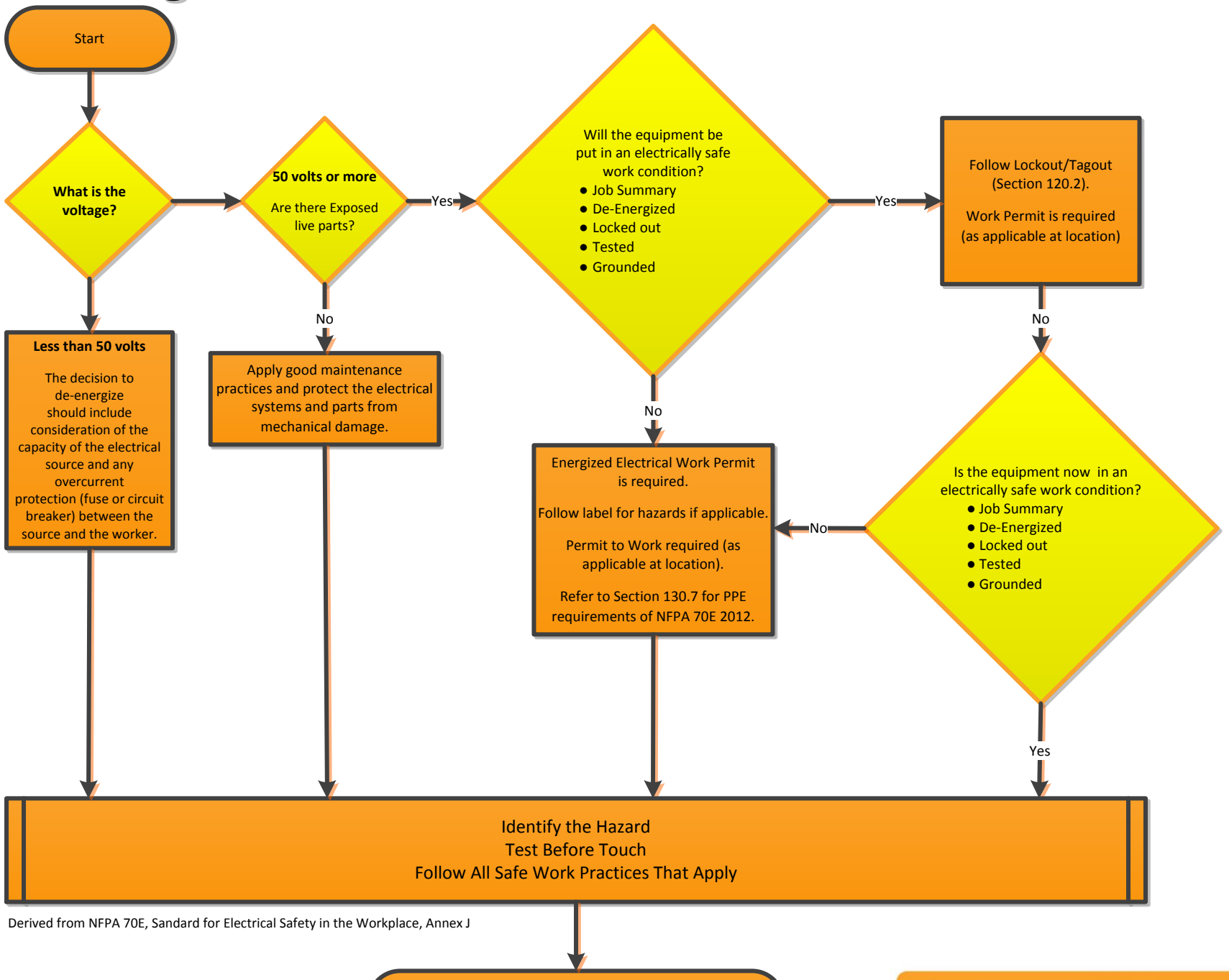
INFORMATIVE ANNEX J – FIGURE J.1 SAMPLE PERMIT FOR ENERGIZED ELECTRICAL WORK (PG 286)

Energized Electrical Work Permit Flow Chart



Derived from NFPA 70E, Sandard for Electrical Safety in the Workplace, Annex J

For more information:
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Electrical System Reliability & Safety Solutions

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ENERGIZED ELECTRICAL WORK PERMIT

PART I: TO BE COMPLETED BY THE REQUESTER:	
DATE: 6-1-17	**JOB NUMBER:** 100899
DESCRIPTION OF CIRCUIT/EQUIPMENT/JOB LOCATION: Pulling circuits to main panel while energized	
DESCRIPTION OF WORK TO BE DONE: Pull home runs from main panel to first junction box	
JUSTIFICATION OF WHY THE CIRCUIT/EQUIPMENT CANNOT BE DE-ENERGIZED OR THE WORK DEFERRED UNTIL THE NEXT SCHEDULED OUTAGE: The job cannot be shut down in order to accomplish work.	
REQUESTOR/TITLE:	Dusty Sutherland - Job Foreman

PART II: TO BE COMPLETED BY THE ELECTRICALLY QUALIFIED PERSONS *DOING* THE WORK:	*PLEASE CHECK BOX ON THE RIGHT UPON COMPLETION:*
DETAILED JOB DESCRIPTION PROCEDURE TO BE USED IN PERFORMING THE ABOVE DETAILED WORK: Must wear proper PPE, including but not limited to: arc flash gloves, flash suit, insulating blankets, mats	x
DESCRIPTION OF THE SAFE WORK PRACTICES TO BE EMPLOYED: Will wear PPE, as well as establishing a safe perimeter of the work area.	x
RESULTS OF THE SHOCK RISK ASSESSMENT:	
A. VOLTAGE TO WHICH PERSONNEL WILL BE EXPOSED 277/480	x
B. LIMITED APPROACH BOUNDARY 5ft - as per NFPA70E table 130.04(C)(a)	x
C. RESTRICTED APPROACH BOUNDARY 2'7"	x
D. NECESSARY SHOCK, PERSONAL, AND OTHER PROTECTIVE EQUIPMENT TO SAFELY PERFORM ASSIGNED TASK Proper PPE, insulating blanket, mat	x
RESULTS OF THE ARC FLASH RISK ASSESSMENT:	
A. AVAILABLE INCIDENT ENERGY AT THE WORKING DISTANCE OF ARC FLASH PPE CATEGORY unknown - refer to label on panel	x
B. NECESSARY ARC FLASH PERSONAL AND OTHER PROTECTIVE EQUIPMENT TO SAFELY PERFORM ASSIGNED TASK Proper PPE - arc flash gloves, insulating blanket, mat	x
C. ARC FLASH BOUNDARY As per NFPA70E table 130.7(c)(15)(a) and table 130.7(c)(15)(b). See back of page.	x
MEANS EMPLOYED TO RESTRICT THE ACCESS OF UNQUALIFIED PERSONS FROM THE WORK AREA: Caution tape and sign informing of work done.	x
EVIDENCE OF COMPLETION OF A JOB BRIEFING, INCLUDING DISCUSSION OF ANY JOB-RELATED HAZARDS: water leaking through roof, risk of getting shocked	x
DO YOU AGREE THE ABOVE-DESCRIBED WORK CAN BE DONE SAFELY? (IF *NO*, RETURN TO REQUESTOR) yes	x

ELECTRICALLY QUALIFIED PERSON:	Curt Courtney
ELECTRICALLY QUALIFIED PERSON:	
MAINTENANCE/ENGINEERING MANAGER:	
MAINTENANCE/ENGINEERING MANAGER:	

PART III: SIGNATURE APPROVAL(S) TO PERFORM THE WORK WHILE ELECTRICALLY ENERGIZED:

Curt Courtney	
QUALIFIED PERSON	**MAINTENANCE/ENGINEERING MANAGER**
Thomas Smithback	Dusty Sutherland
SAFETY MANAGER	**ELECETRICALLY KNOWLEDGEABLE PERSON/JOB FOREMAN**
Thomas Smithback	6-1-17
PROJECT MANAGER	**DATE**

NOTE: ONCE THE WORK IS COMPLETE, FORWARD THIS FORM TO THE SAFETY ADMINISTRATOR FOR REVIEW AND RETENTION

FORM PRODUCED UNDER GUIDELINES PROVIDED BY THE 2015 NFPA 70E HANDBOOK FOR ELECTRICAL SAFETY IN THE WORKPLACE
INFORMATIVE ANNEX J – FIGURE J.1 SAMPLE PERMIT FOR ENERGIZED ELECTRICAL WORK (PG 286)

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ADDITIONAL NOTES:

C. Arc Flash Boundary: Please refer to the PPE Selector Guide, located on the Electric Supply
Dropbox.
Dropbox>Electrician shared Folder>Safety>PPE Selector Guide
Cordon off the room if possible, please refer to PPE selector guide
X
X
X
X
X
X
X
X
X
X

NOTE: ONCE THE WORK IS COMPLETE, FORWARD THIS FORM TO THE SAFETY ADMINISTRATOR FOR REVIEW AND RETENTION

FORM PRODUCED UNDER GUIDELINES PROVIDED BY THE 2015 NFPA 70E HANDBOOK FOR ELECTRICAL SAFETY IN THE WORKPLACE
INFORMATIVE ANNEX J – FIGURE J.1 SAMPLE PERMIT FOR ENERGIZED ELECTRICAL WORK (PG 286)

5.1 LOCKOUT/TAGOUT (LOTO) PROGRAM

A. PURPOSE AND SCOPE

This procedure shall be used to prevent employee exposure to hazardous electrical energy. It establishes the minimum requirements for lockout (tagout) of electrical energy sources. It provides procedures for ensuring conductors and circuit parts are disconnected from electrical energy sources and that stored energy sources are controlled. Control includes release of the stored energy as well as the prevention of re-accumulation of energy.

An individual employee control procedure will be used and no lockout tagout will be required under the following circumstances:

- Equipment with exposed conductors and circuit parts are de-energized for minor maintenance, servicing, adjusting, cleaning, inspection, or similar operation
- Disconnecting means are adjacent to the conductor, circuit parts, and equipment on which the work is performed,
- The disconnecting means is clearly visible to all employees involved in the work,
- The work does not extend beyond the work shift.

However, all steps in Section C shall be completed to ensure individual employee control is appropriate and all energy sources are identified and controlled.

B. TRAINING AND RESPONSIBILITIES

All employees shall receive training as prescribed in Section B(2) of this program. All new or transferred employees and all other persons whose work operations are or might be in the area shall be instructed in the purpose and use of this procedure. A list of these employees (or job titles of employees with responsibility) is attached here. Where needed a separate list will be included in the procedures for a given operation where LOTO is used. All persons installing a LOTO device shall sign their names and the date on the tag. For a complex LOTO the name of the individual or person in charge will be identified in the plan along with procedures for maintaining contact with that individual.

Training

All employees engaged in LOTO shall receive the following training:

- The importance of LOTO and its impact on safety
- The purpose and procedures set forth in this program as well as any individual LOTO plans developed for a specific operation
- Recognizing LOTO devices
- Installing LOTO devices
- Duty of employer in writing procedures
- Duty of employee in executing procedures
- Duty of person-in-charge
- Authorized and unauthorized removal of locks/tags
- Enforcing execution of LOTO procedures
- Individual employee control of energy
- Simple LOTO
- Complex LOTO
- Using single line and diagrammatic drawings to identify sources of energy
- Use of tags and warning signs
- Release of stored energy
- Personnel accounting methods
- Grounding needs/requirements
- Safe use of voltage detecting instruments
- Additional training as needed to address specific hazards associated with a given operation

C. PREPARATION FOR LOCKOUT (TAGOUT)

All disconnecting means shall be identified and located to ensure that energy is interrupted by a physical break and not de-energized by a circuit interlock. This shall be accomplished by reviewing current diagrammatic drawings or other means, tags, labels, and signs. A list of disconnecting means to be locked (tagged) will be developed and attached to the plan for each LOTO operation.

Each disconnecting means shall be evaluated to determine adequacy of their interrupting ability. Based on the evaluation, it will be determined if verification of a visible open point is possible, or if other precautions are needed.

Work activity where any personnel might be exposed to sources of electrical energy hazards will be identified. It will be determined if there are any other energy sources in the area where employees may be exposed to other types of energy. Energy control methods will be established for all hazardous energy sources.

A voltage detector rated for voltage to which employees may be exposed will be selected for the operation. A procedure will be established for each operation to determine that the voltage detector is operating properly.

The possibility of induced voltages or stored electrical energy will be identified. Grounds will be applied as needed before touching conductors or circuit parts.

D. LOCKOUT (TAGOUT) STEPS

The following identifies the basic steps for LOTO. In addition to these steps, it shall be determined whether a Simple or Complex LOTO can be performed. The Complex LOTO plan shall address any additional steps required. A Complex LOTO will be performed when any of the following exist:

- Multiple energy sources (more than one)
- Multiple crews
- Multiple crafts
- Multiple locations
- Multiple employers
- Unique disconnecting means
- Complex or particular switching sequences
- Continues for more than one shift, that is, new workers

1. Notify employees a lockout (tagout) is going to be implemented and the reason. A qualified employee knowledgeable of hazards associated with electrical energy shall implement the lockout (tagout). He/She shall know the location of disconnecting means for all sources of electrical energy and stored energy.

2. The qualified person shall de-energize and disconnect the electric supply and relieve all stored energy.

3. All disconnecting means will be locked/ tagged out with lockout (tagout) devices. Refer to Section H for appropriate devices.

   Where only a tag is used, one of the following additional safety measures will be used to prevent re-energization

   □ Opening the circuit at _____

   □ Blocking the circuit at _____

   □ Removal of the following circuit element _____

4. To determine that operation is prohibited, the person applying the LOTO shall attempt to operate the disconnecting means.

5. A voltage-detecting instrument shall be used. Refer to Section H for appropriate devices. Inspect the device and do not proceed if it is damaged. Secure an undamaged device and proceed.

6. Verify proper operation of the device and test for absence of voltage.

7. Repeat verification of device after testing for absence of voltage.

8. Where needed, install grounds on the phase conductors or circuit parts, to eliminate induced voltage or stored energy. Where it has been determined that contact with other exposed energized conductors or circuit parts is possible, apply ground connecting devices rated for the available fault duty.

9. LOTO Complete

E. REMOVAL OF LOTO

1. Visually verifies work is complete.

2. Clean up and remove all tools, equipment, and unused materials.

3. Remove all grounds.

4. Notify all personnel involved that the lockout (tagout) is complete, electrical energy will be restored, and to remain clear of equipment and electrical energy.

5. Perform quality control checks.

6. Remove lockout (tagout) devices (This must be done by the person(s) who installed them.

7. Notify the owner that the equipment and/or electrical supply is ready to be returned to normal operation.

8. Return the disconnecting means to their normal condition.

F. SPECIAL PROCEDURES

Each person shall install his/her own personal lockout (tagout) device for all simple LOTO operations where more than one person is involved.

When the lockout (tagout) extends for more than one day, the lockout (tagout) shall be verified to be still in place at the beginning of the next day. Where the lockout (tagout) is continued on successive shifts, the lockout (tagout) is considered to be a complex lockout (tagout).

G. DISCIPLINE

Any violation of the procedures in this program will result in:
_____

Anyone who knowingly operates a disconnecting means that has been locked out or tagged out device will be: _____

H. EQUIPMENT

Only the following type of locks shall be used for LOTO:

- Type: _____

- Model: _____

Only the following type of tags shall be used for LOTO:

- Type: _____
- Model:_____

3 The following voltage detecting device(s) shall be used depending on the applicable voltage

- Voltage Range: _____
- Type: _____
- Model: _____

- Voltage Range: _____
- Type: _____
- Model: _____

I. AUDIT

An audit of this program and procedures shall be conducted annually. The annual audit shall be dated and filed at _____.

J. RESOURCES AND REFERENCES

To effectively execute this program and procedures identified in this section of our safety manual here the following documents may be used. The documents will be filed with company records as noted in the table. Copies of documents that do not include sensitive personnel information will be provided to the host employer/general contractor/ construction manager upon request.

TITLE	PURPOSE	MAINTENANCE	SOURCE
Complex LOTO Program	Written Program needed for LOTO involving multiple crews, circuits, etc.	Added to Jobsite Safety Program where needed	NECA eSafetyLine www.esafetyline.com/neca/manual Lockout/Tagout Guide and the NECA PPE Selector for required precautions when working live circuits.
List of Employees Responsible or Electrical Tasks	Used to identify those individuals trained in and responsible for electrical tasks	Filed with jobsite records	NECA eSafetyLine www.esafetyline.com/neca/manual
Training Guide and Attendance Rosters	Safety Talks, Activities, Tests, and Attendance Rosters used to identify training completed and employees present	Filed with company personnel records	NECA eSafetyLine www.esafetyline.com/neca/manual

5.2 ENERGIZED ELECTRICAL WORK

A. PURPOSE AND SCOPE

This program has been established to keep our electrical workers safe from hazards associated with energized electrical work tasks. Using this policy will help keep our NECA and IBEW electrical contractors compliant with state and federal requirements for employee safety in the workplace.

OSHA and NFPA 70E standards require that all energized circuit parts and equipment be DE-ENERGIZED before any employee works on or near them. De-energizing must be used as the primary method of worker protection from electrical hazards.

Exemptions to Work Permit. There are very few exceptions to this rule. *Work performed on or near live parts by qualified persons related to tasks such as testing, troubleshooting, voltage measuring, etc., shall be permitted to be performed without an energized electrical work permit, provided appropriate safe work practices and personal protective equipment in accordance with this procedure are provided and used.*

B. DEFINITIONS

1. ARC FLASH HAZARD ANALYSIS:
   A study investigating a worker's potential exposure to arc-flash energy, conducted for the purpose of injury prevention and the determination of safe work practices, arc flash protection boundary, and the appropriate levels of PPE.

2. ARC FLASH PROTECTION BOUNDARY:
   An approach limit at a distance from exposed live parts within which a person could receive a second-degree burn if an electrical arc flash were to occur. Refer to NFPA 70E Article 130.3 (A) (1)

3. ARC RATING:
   The maximum incident energy resistance demonstrated by a material (or a layered system of materials) prior to break open or at the onset of a second-degree skin burn. Arc rating is normally expressed in calories per centimeter squared.

4. CALORIE PER CENTIMETER SQUARED (cal/cm^2):
   The unit of measurement used to express the amount of thermal energy released during an arc flash event.

5. ELECTRICAL HAZARD:
   A dangerous condition such that contact or equipment failure can result in electrical shock, arc flash burn, thermal burn, or blast.

6. ELECTRICAL HAZARD ANALYSIS:
   Appropriate safety-related work practices shall be determined before any person is exposed to the electrical hazards involved by using both shock hazard analysis and arc flash hazard analysis. NFPA 70E (110.8 (B) 1)

7. ELECTRICALLY SAFE WORK CONDITION:
   A state in which an electrical conductor or circuit part has been disconnected from energized parts, locked and tagged in accordance with established standards, tested to ensure the absence of voltage and grounded if determined necessary.

8. EMERGENCY PROCEDURES:
   Employees exposed to shock hazards shall be trained and regularly instructed in methods of release and resuscitation of victims from contact with exposed energized electrical conductors or circuit parts.

9. ENERGIZED ELECTRICAL WORK:
   Working on or near exposed energized parts 50 volts or greater and / or within the flash protection boundary.

10. ENERGIZED ELECTRICAL WORK PERMIT:
    If live parts are not placed in an electrically safe work condition, work by a qualified person shall be performed by written permit only.
    Exception: Diagnostics, testing, troubleshooting, voltage measuring shall be permitted to be performed without an EEW permit, provided appropriate safe work practices PPE is provided and used.

11. EQUIPMENT LABELING:
    Equipment shall be field marked with a label containing the available incident energy or required level of PPE.

12. EXPOSED:
    (As applied to energized electrical conductors or circuit parts) Capable of being inadvertently touched or approached nearer than a safe distance by a person. It applies to energized parts that are not suitably guarded, isolated or insulated.

13. FLAME-RESISTANT (FR):
    The property of a material whereby combustion is prevented, terminated, or inhibited following the application of a flaming or non-flaming source of ignition. FR Personal Protective Equipment in rated in cal / cm^2.

14. HAZARD/RISK EVALUATION PROCEDURE:
    An electrical safety program shall identify a hazard/risk evaluation procedure to be used before work is started within the Limited Approach Boundary of energized electrical conductors and circuit parts operating at 50 volts or more or where any electrical hazards exists.

15. HOST AND CONTRACT EMPLOYER RESPONSIBILITIES:
    The host employer (general contractor, customer or owner) and the contract employer(s) shall inform each other of existing hazards, personal protective equipment, FR clothing requirements, safe work practice procedures, and emergency & evacuation procedures applicable to the work to be performed. NFPA 70E (110.5 A & B)

16. INCIDENT ENERGY:
    The amount of energy impressed on a surface, a certain distance from the source, generated during an electrical arc event. One of the units used to measure incident energy is cal / cm^2.

17. JOB BRIEFING:
    Before starting each job, the employee in charge shall conduct a job briefing with the employees involved. The briefing shall cover subjects identified on the Energized Electrical Work Permit such as hazards associated with the job, work procedures involved, special precautions, energy source controls, and PPE requirements.

18. LESS THAN 50 VOLTS:
    For voltages of less than 50 volts, the decision to de-energize should include consideration of the capacity of the source and any overcurrent protection between the energy source and the worker.

19. PERSONAL PROTECTIVE EQUIPMENT (PPE):
    Employees working in areas where electrical hazards are present shall be provided with, and shall use, protective equipment that is designed and constructed for the specific part of the body and for the work to be performed. The equipment shall be maintained in a safe, reliable condition and shall be visually inspected before each use.

20. QUALIFIED PERSON:
    A person who is trained and knowledgeable of the construction and operation of equipment or a specific work method and is trained to recognize and avoid the electrical hazards that might be present with respect to that equipment or work method.

    Such persons shall also be familiar with the proper use of special precautionary techniques, personal protective equipment, including arc-flash, insulating and shielding materials, and insulated tools and test

equipment. A person can be considered qualified with respect to certain equipment and methods, but still be unqualified for others.

21. RATING:
    Test instruments, equipment, and their accessories shall be rated for circuits and equipment to which they will be connected. They shall be inspected and correct operation verified before and after an absence of voltage test is performed.

22. SAFETY TRAINING:
    Employees shall be trained in safety-related work practices and procedural requirements as necessary to provide protection from the electrical hazards associated with their respective job or task assignments. NFPA 70E (110.6 A & B) (110.6 D & E)

23. SHOCK HAZARD ANALYSIS:
    A shock hazard analysis shall determine the voltage to which personnel will be exposed, boundary requirements, and the PPE necessary in order to minimize the possibility of electric shock to personnel.

24. SHOCK HAZARD BOUNDARIES:
    The shock protection boundaries, identified as Limited, Restricted, and Prohibited approach boundaries, are applicable to the situation in which approaching personnel are exposed to energized electrical conductors and circuit parts.

    Limited – An approach limit at a distance from an exposed energized electrical conductor or circuit part within which a shock hazard exists. For the purpose of this document (< 600V) the Limited Approach Boundary is 42 inches.

    Restricted - An approach limit at a distance from an exposed energized electrical conductor or circuit part within which there is an increased risk of shock, due to electrical arc over combined with inadvertent movement, for personnel working in close proximity to an energized electrical conductor or circuit part. For the purpose of this document (< 600V) the Limited Approach Boundary is 12 inches.

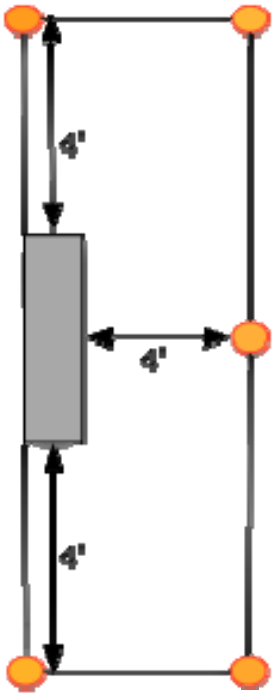
    Prohibited – An approach limit at a distance from an exposed energized electrical conductor or circuit part within which work is considered the same as making contact with the electrical conductor or circuit part. For the purpose of this document (< 600V) the Limited Approach Boundary is 1inch.

25. WORK DE-ENERGIZED:
    Live parts shall be put into an electrically safe work condition (by de-energizing and using lockout/tagout) before an employee is exposed to electrical hazards. (See Lockout / Tagout Procedures)

    When the employer can demonstrate that de-energizing introduces additional or increased hazards or is infeasible due to equipment design or operation limitations, energized work may be allowed.

    Examples of increased or additional hazards:
    - Interruption of life support equipment.
    - Deactivation of emergency alarm systems.
    - Shutdown of hazardous location ventilation equipment.

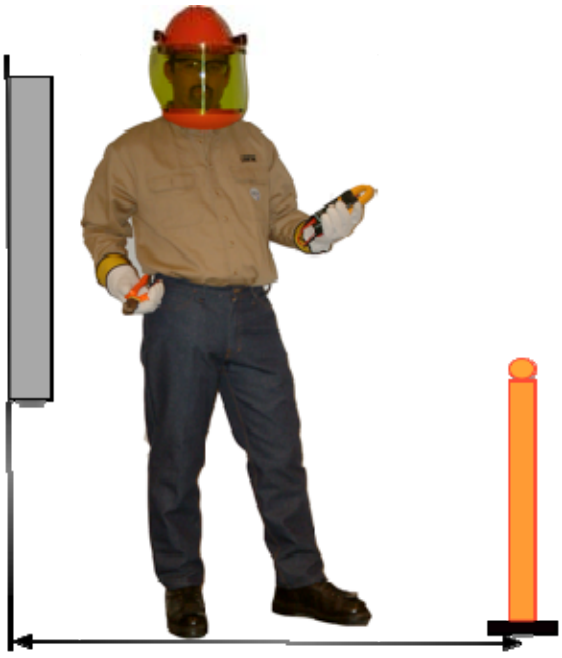
    Examples of infeasibility due to equipment design or operational limitations:
    - Diagnostics and testing/troubleshooting.
    - Circuits that form an integral part of a continuous process that would otherwise need to be completely shut down in order to permit work on one circuit or piece of equipment.



PERFORM SHOCK & ARC FLASH HAZARD ANALYSIS TO DETERMINE ARC FLASH PROTECTION AND SHOCK PROTECTION BOUNDARIES, PREDICT POTENTIAL INCIDENT ENERGIES AND SELECT APPROPRIATE PPE.

Keep in mind that Arc Flash Protection Boundary distances vary based on the amount of available fault current and the clearing times of overcurrent protection devices. Shock Protection Boundaries vary based on the nominal voltage and fixed electrical parts (buss) vs. moveable conductors (overhead lines = 10" clearance).

DEFAULT DISTANCES FOR THIS DOCUMENT ARE:
Shock - exposed fixed parts = 42" minimum
Arc Flash = 4' minimum *
*for systems not exceeding maximum 100KA cycles
(product of clearing time multiplied by available fault current)



Shock Boundaries
Prohibited Approach = 1"
Restricted Approach = 12"
Limited Approach = 42"
Arc Flash Boundary = 48"

Once boundaries have been established, determine the level of potential arc flash hazard from the Table 130.7 (C)(9) located in NFPA 70E or use the NECA PPE Selector Guide.

When using Table 130.7 (C)(9) of NFPA 70E:

Locate the specific electrical task and equipment to be worked upon, select the HAZARD RISK CATEGORY # from the task matrix. This number will identify what PPE is required for arc flash related hazards.

For protection from shock, locate the 2 columns that specify if voltage rated tools or insulating gloves are required. (Yes or No)

Document selections on your Energized Electrical Work Permit.

Remember! Energized electrical work must be justified and only then shall qualified and protected persons be allowed to cross these boundaries.

C. RESPONSIBILITIES

Safety Director

The Safety Director:

- Will receive all requests to work energized.
- Will coordinate the completion and approval of the Energized Electrical Work Permit and Hazard/Risk Assessment.
- Or designee shall ensure that all employees are qualified and have receive specific training needed to work energized on the project.
- Shall compile and maintain a list of authorized individuals who have received training that qualifies them to perform specific tasks energized.

Supervisor

The Supervisor will:

- Ensure that an Energized Electrical Work Permit is revised before allowing work to begin on an energized circuit.
- Confirm the individuals assigned to work energized on the jobsite are authorized.
- Ensure PPE is provided and worn in accordance with the Hazard Assessment and Energized Electrical Work Permit.
- Ensure all boundaries are maintained

Employee

Employees will:

- Not perform any energized work for which they have not been authorized.
- Comply with the Energized Electrical Work Permit and all company safety principles including the electrical safety principles.

D. ACTIONS

Where planning has determined a phase of a project requires work to be performed energized those involved will consult with the Safety Director.

Any employee assigned to a task that feels that it must be performed energized will submit a request to the Safety Director.

An Electrical Hazard Analysis will be performed. This involves conducting both a shock hazard and arc flash hazard analysis. The Host Company shall be consulted for any information needed to complete the analysis.

The following will be documented on the company Hazard/Risk Assessment Sheet for that project:

- Shock Hazard Analysis Results
  Limited, Restricted, and Prohibited Approach Boundary requirements
- Flash Hazard Analysis
  Flash Protection Boundary (FPB)
  PPE when inside the FPB.

The Energized Electrical Work Permit shall be completed and approved for each task before work can begin. The Permit must include:

- A description of the circuit and equipment to be worked on and the location
- Justification for why the work must be performed in an energized condition
- A description of the safe work practices to be employed
- Results of the shock hazard analysis
- Determination of shock protection boundaries
- Results of the flash hazard analysis

- The Flash Protection Boundary
- The necessary PPE to safely perform the assigned task
- Means employed to restrict access of unqualified persons from the work area
- Evidence of completion of a job briefing, including a discussion of any job-specific hazards
- Energized work approval signatures

Exemptions to Work Permit.

1. *Work performed on or near live parts by qualified persons related to tasks such as testing, troubleshooting, voltage measuring, etc., shall be permitted to be performed without an energized electrical work permit, provided appropriate safe work practices and personal protective equipment in accordance with this procedure are provided and used.*
2. *A single Energized Electrical Work Permit may be allowed for work that is routine and/or repetitive in nature, such as trouble shooting on a construction project. This permit must be on file with the Safety Director and a list of the specific tasks to which it applies identified. Employees must notify the Safety Director of any conditions that change or if new hazards are introduced and a new permit is created.*

The Energized Electrical Work Permit shall be reviewed by each employee performing the work and will be maintained in the immediate work area.

Employees working in areas where electrical hazards are present shall be provided with, and shall use, protective equipment that is designed and constructed for the specific part of the body to be protected and for the work to be performed. Clothing and equipment shall comply with the specification set forth by NFPA 70E for the task to be performed and the incident energy level to which they may be exposed.

No employees shall be allowed to work within the FPB where the incident energy level exceeds 167.36 J/cm2 (40 cal/cm2).

Protective equipment shall be maintained in a safe, reliable condition. The protective equipment shall be visually inspected before each use. The requirements for periodic testing of electrical protective equipment found in the ANSI and ASTM standards referenced in sections 130.7(C)(8) and 130.7(F) of NFPA 70E shall be used for this purpose.

Protective clothing (i.e. FR apparel) shall be inspected before each use. The garment manufacturer's instructions for care and maintenance of FR apparel shall be followed.

Clothing shall cover potentially exposed areas as completely as possible. Shirt sleeves shall be fastened at the wrists, and shirts and jackets shall be closed at the neck.

Work clothing or flash suits that are contaminated, or damaged to the extent their protective qualities are impaired, shall not be used. Protective items that become contaminated with grease, oil, or flammable liquids or combustible materials shall not be used.

Conductive articles of jewelry and clothing (such as watchbands, bracelets, rings, key chains, necklaces, metalized aprons, cloth with conductive thread, metal headgear, or metal frame glasses) shall not be worn where they present an electrical contact hazard with exposed live parts.

Employees shall use insulated tools and/or handling equipment when working inside the Limited Approach Boundary of exposed live parts where tools or handling equipment might make accidental contact. Insulated tools shall be protected from damage to the insulating material.

Insulated tools shall be rated for the voltages on which they are used.
Insulated tools shall be designed and constructed for the environment to which they are exposed and the manner in which they are used.

Fuse or fuse holder handling equipment, insulated for the circuit voltage, shall be used to remove or install a fuse if the fuse terminals are energized.

Ropes and handlines used shall be nonconductive.

Fiberglass reinforced plastic rod and tube used for live line tools shall meet the requirements of ASTM F 711, *Standard Specification for Fiberglass-Reinforced Plastic (FRP) Rod and Tube Used; in Live Line Tools*, 1989 (R1997).

Portable Nonconductive ladders shall meet the requirements of ANSI standards for ladders listed in NFPA 70E, Table 130.7(F).

Protective shields, protective barriers, or insulating materials shall be used to protect each employee from shock, burns, or other electrically related injuries while that employee is working near live parts that might be accidentally contacted or where dangerous electric heating or arcing might occur.

Normally enclosed live parts that are exposed for maintenance or repair shall be guarded to protect unqualified persons from contact with the live parts.

Rubber insulating equipment used for protection from accidental contact with live parts shall meet the requirements of the ASTM standards listed in NFPA 70E, Table 130.7(F).

Plastic guard equipment for protection of employees from accidental contact with live parts, or for protection of employees or energized equipment or material from contact with ground, shall meet the requirements of the ASTM standards listed in NFPA 70E, Table 130.7(F).

Conductive materials, tools, and equipment that are in contact with any part of an employee's body shall be handled in a manner that prevents accidental contact with live parts. Such materials and equipment include, but are not limited to, long conductive objects, such as ducts, pipes and tubes, conductive hose and rope, metal-lined rules and scales, steel tapes, pulling lines, metal scaffold parts, structural members, bull floats, and chains.

When an employee works in a confined or enclosed space (such as a manhole or vault) protective shields, protective barriers, or insulating materials shall be used as needed to prevent inadvertent contact with these parts. Doors, hinged panels, and the like shall be secured to prevent their swinging into an employee and causing the employee to contact exposed live parts.

Employees shall not perform housekeeping duties inside the Limited Approach Boundary where there is a possibility of contact, unless adequate safeguards (such as insulating equipment or barriers) are provided to prevent contact.

Barricades, signs and warning tape shall be used to identify and maintain boundaries as determined by the Electrical Hazard Analysis.

E. EMPLOYEE INFORMATION AND TRAINING

Qualified Personnel (i.e. authorized to work energized) shall be trained in:

- The applicable procedures associated with securing and implementing an Energized Electrical Work Permit
- NFPA 70E
- OSHA Electrical Safety Work Practices
- Electrical safety work practices as need for the tasks to be performed.

Non-Qualified Personnel (workers who will assist, such as an electrical apprentice) shall be trained in:

- The applicable procedures associated with securing and implementing an Energized Electrical Work Permit
- NFPA 70E
- OSHA Electrical Safety Work Practices

Qualified and Non-Qualified personnel shall

- Receive re-training as needed.
- Participate in the job debriefing and understand all safety precautions determined by the applicable Energized Electrical Work Permit

F. RESOURCES AND REFERENCES

To effectively execute this program and procedures identified in this section of our safety manual here the following documents may be used. The documents will be filed with company records as noted in the table. Copies of documents that do not include sensitive personnel information will be provided to the host employer/general contractor/ construction manager upon request.

TITLE	PURPOSE	MAINTENANCE	SOURCE
Energized Electrical Work Permit	Completed for approval to work on energized parts and circuits	Filed with jobsite records as needed Tip – Complete a basic form for routine tasks that can be used on most jobs, review, edit and issue.	NECA eSafetyLine www.esafetyline.com/neca/manual (provided by Oregon Pacific-Cascade Chapter NECA) NFPA 70E Annex J Energized Electrical Work Permit www.nfpa.org
Needs and Benefits of Energized Electrical Safety Program	Used to reinforce the basis of the program with employees and customers	Copies provided on request or as needed to fulfill the purpose of the document	NECA eSafetyLine www.esafetyline.com/neca/manual (provided by Oregon Pacific-Cascade Chapter NECA)
Letter Informing Customer or GC of Electrical Related Hazards and Responsibilities	Provided to customer or GC to inform them of responsibilities	Mailed or handed to Customer / GC in pre-job meeting and filed with project files	NECA eSafetyLine www.esafetyline.com/neca/manual (provided by Oregon Pacific-Cascade Chapter NECA)
Hazard/Risk Assessment	Completed to determine hazard controls including the appropriate PPE and clothing needed	Filed with jobsite records as needed	NECA eSafetyLine www.esafetyline.com/neca/manual NFPA70E Annex F Hazard/Risk Evaluation Procedure

5.3 ELECTRIC TRANSMISSION AND DISTRIBUTION SYSTEMS

A. PURPOSE AND SCOPE

This procedure shall be used to provide a safer workplace with respect to the electrical hazards associated with electric transmission and distribution. It addresses the electrical safety requirements found in 1926 Subpart V Power Transmission and Distribution and 1910.269 Electric Power Generation, Transmission, and Distribution.

B. MINIMUM APPROACH DISTANCES (MADs)

No employee may approach or take any conductive object closer to exposed energized parts as identified by OSHA in the Minimum Approach Distances (MAD) tables unless:

- The employee is insulated from the energized part through the use of proper class rubber insulating gloves with protectors,
- The energized part is insulated from the employee and any other conductive object at a different potential.

C. POSITIONING OF EQUIPMENT AND WORKERS

Aerial equipment shall be placed such that the employee can select and maintain a work position that will provide the best protection from potential hazards. When working outside aerial lifts, the employee shall select and maintain a work position that will provide the best protection from potential hazards. Before attempting to do any work on or around energized lines or equipment (e.g., busses, transformers, switch gear, and switching cubicles) the layout shall be studied carefully so that a position can be taken that will provide the greatest amount of clearance. It is especially important that inadvertent movement be anticipated and where practical a position taken that will avoid contact with energized lines or equipment.

When working on overhead conductors or busses from the pole, structure or aerial device, the worker should take a position below the energized part being worked, whenever practical. No employee may be immediately under the work area while work is in progress unless it is necessary to assist employees working above.

Where public safety is an issue, equipment shall be positioned at a location that provides the least hazard to the public while still being able to perform the work safely. Special precautions shall be taken when booms, cranes, poles, etc., are maneuvered in close proximity to energized conductors or exposed to traffic and other hazards.

D. APPAREL

Any employee that is potentially exposed to hazards from flames or an electrical arc shall wear clothing that will not ignite and continue to burn.

When work is performed within reach of exposed energized lines or equipment, all exposed conductive articles (e.g., key or watch chains, rings, wrist watches or bands) shall be removed or rendered nonconductive.

Loose-fitting clothing, key or watch chains, rings, and wrist watches or bands present a hazard when climbing, working around rotating equipment, mobile equipment; therefore, they should not be worn when performing these tasks.

Note: Long hair also presents a hazard when working around rotating and reciprocating equipment; thus, a hair net should be worn when working in these areas.

E. PROTECTIVE COVER-UP

Once workers reach a position within reach of energized circuits, they shall immediately cover with electrical protective equipment all live parts (e.g., adjacent wires, cables, neutrals and associated parts) and any paths-to-ground with which a worker could make accidental or incidental contact. This shall include the covering of the conductor, cable, or associated parts being worked on, in so as far as practical, while still leaving room to perform the work. The reason for covering conductors, neutrals, and associated parts, and paths-to-ground is to limit the likelihood of incidental contact with phase wires and paths-to-ground in case a worker should slip or in some manner make an unanticipated move that could result in the accidental or incidental contact with live parts or a path-to-ground. Therefore, the electrical protective cover-up installed around the work area shall be arranged to limit the likelihood of any contact with live parts or paths-to-ground.

When all work is completed, the protective equipment shall be removed in a manner that provides the worker with maximum protection at all times while removing the electrical protective equipment, and moving out of the energized area.

F. OVERHEAD WORK

The appropriate Class II or III rubber insulating gloves with glove protectors, shall be worn on both hands at all times when working on or when working within reach or extended reach of 25 kV or less, phase-to-phase, or 15 kV or less phase-to-ground. A hardhat, safety glasses, and FR clothing are also required to be worn. These requirements exist regardless of the type of work being performed, and even when protective equipment is in place or is being installed.

Note: For voltages from 0 - 600 volts, Class "0" gloves with protectors may be worn provided all MADs are maintained at all times.

When installing or removing insulated protective equipment without the use of a live-line tool and when working directly on energized conductors above 5 kV phase-to-phase, the following additional rules shall be complied with:

1. Workers shall isolate themselves from ground contact by use of an insulated aerial device. Approved insulated platforms may be utilized on voltages less than 15 kV phase-to-phase. Any equipment used for this purpose shall be specifically approved and maintained for this work. Workers shall maintain MADs, or provide insulation from all paths-to-ground, including poles, and from other phase conductors.
2. Work shall not be performed during rain, snow, mist or heavy fog. If such conditions develop when work is in progress, common sense and good judgment should be used to determine the proper course of action. This action could include:
    - leaving the job as is,
    - making the job temporarily safe with live-line tools or other methods, or
    - finishing the task or job with live-line tools.

    Note: When line hoses, blankets and hoods are wet, they do not provide adequate protection for the worker.

G. LIVE-LINE TOOL WORK

Live-line tool work is a work method which provides the worker with adequate clearance from surfaces at different potential by use of tools and equipment of sufficient length and dielectric strength to maintain clearance and insulation from these surfaces.

Energized distribution lines of voltages 25 kV volts or below, phase-to-phase, or 15 kV volts or below, phase-to-ground, shall be worked using approved methods, either directly with rubber insulating gloves with protectors or with live-line tools with the worker isolated from the energized conductors.

All energized lines above 25 kV volts, phase-to-phase or 15 kV volts phase-to-ground shall not be handled except with approved live-line tools or equipment and methods designated for the voltage of the line being worked. MADs shall be maintained while using live-line tools.

Tools and equipment for doing live-line work shall be used in the manner for which they were designed. While handling live parts with live-line equipment, positive control shall be maintained at all times. With the exception of handling short jumpers, workers shall not depend upon their physical ability alone to maintain positive position or control of energized conductors. Collar ropes, rope blocks, tong saddles, clamps, lever lifts or other approved equipment, shall be used regardless of how light the weight or strain of the conductor might appear to be.

Lines used to hold out energized conductors, if practical, should not be depended upon alone to hold energized conductors away from workers. Auxiliary live-line arms, hand poles, lift poles, etc., should be used to maintain more positive control of the energized conductors.

Approved synthetic rope may be allowed to contact energized conductors. All ropes allowed to contact energized conductors shall be kept clean and dry to ensure adequate dielectric strength.

When tying in or untying conductors on insulators, extreme care shall be taken to prevent tie wires and the metal part of tie sticks from contacting arm, pole or hardware.

Protective equipment with insulated handles is considered a live-line tool and may be installed from the pole or structure provided proper clearances are maintained.

All live-line tools shall be electrically tested according to OSHA requirements. Only live-line tools made of fiberglass and rated at 100 kV per foot are approved for use on energized conductors.

Appropriate containers (e.g., canvas, hot stick boxes or canisters on trucks) shall be used to keep live-line tools, including jibs, clean, dry and protected from scars and abrasions.

Live-line tools shall be visually inspected for defects and compliance with the test date before use each day.

All live-line equipment shall be kept clean and waxed to preserve its insulating qualities. If a live-line tool is refinished or repaired, it shall be electrically tested before being returned to service.

Fiberglass beams, liners and baskets on insulated aerial devices shall be kept clean, dry and maintained as a live-line tool using approved methods to preserve their insulating qualities when such equipment is used to insulate the worker.

Cable and chain hoists shall not be used on or in close proximity of energized conductors.

Hot line hoists shall be insulated from any path to ground when used on energized conductors above 600 volts. These hoists shall be kept clean and dry. Handles of these hoists shall be maintained as a live-line tool.

Insulated mechanical jumpers shall be given a thorough periodic inspection. Prior to each use, they shall be given a visual inspection to check for physical damage to the insulation.

H. DENERGIZING LINES AND EQUIPMENT FOR EMPLOYEE PROTECTION

Clearances

The employee in charge of job is responsible for obtaining and releasing clearances. The employee in charge must have a thorough understanding of the Host Company's clearance procedure. Request from the Host Company any procedure(s) that contain the general instructions for obtaining and releasing clearances and handling of electric equipment, lines, and loads. The instructions shall be studied and adhered to in all instances.

Clearances should not be given or accepted on lines or equipment without an open-air break between all sources of supply and the line or equipment on which work is being done. Under certain circumstances, it may be impractical to obtain an open-air break. Under these circumstances specific methods and equipment, approved by the Host Employer or Management, may be used to obtain clearances. These shall be documented on the Job Briefing form and thoroughly discussed during the job briefing.

Hot line tags are important and shall be obtained according to the Host Company's policy.

Hold Tags shall be attached to all components listed on the clearance instructions.

Hold Tags shall not be removed without proper authorization!

I. GROUNDING FOR PROTECTION OF EMPLOYEES

Grounding of Lines and Equipment – "If it **isn't grounded**, it **isn't dead**!"

All equipment and/or lines that are not properly cleared, tagged, tested for voltage (voltmeter or fuzzing – only above 13.2Y / 7.62 kV) and grounded are energized and shall be worked accordingly.

Note: On secondary lines operating at less than 600 volts, if it becomes impractical to begin or continue work with temporary grounds in place, the grounds may be removed, and the secondary worked without PPE provided that:

- The secondary is isolated from all source voltages
- There is no possibility of induced voltages.

Grounds may be temporarily removed only as necessary for test purposes. Extreme caution shall be exercised during this procedure.

The best protection is obtained when all points in the work area are at the same potential (i.e., within an equipotential zone.) Common sense and good judgment are required in the application of system safety grounds to maintain maximum protection for workers.

A temporary ground is used to help establish an equipotential zone (i.e., work zone of protection.) Protective grounding equipment shall be capable of handling the maximum available fault current that could flow for the time necessary to clear the fault.

When applying a temporary ground, the ground-end connection shall be applied first, and the other end attached to the line or equipment with an approved live-line tool. When the ground is to be removed, it shall be removed from the conductor using an approved live-line tool before the ground-end connection is removed.

Note: for lines or equipment operating at 600 volts or less, insulating equipment other than live-line tools may be used if the following procedure is used.

- Before the grounds are applied to the lines or equipment, prior to de-energizing test for voltage using a voltmeter.
- After de-energizing the lines or equipment, check for the absence of voltage with the same voltmeter used above.
- Properly install grounds.
- Before the grounds are removed ensure that the lines or equipment are not energized at the time a ground is removed.
- Properly remove grounds.

On jobs where conductors or switches are to be opened, or openings are to be closed, additional system safety grounds shall be installed in the immediate work area to bridge the opening and keep the work area at the same potential for the worker. This practice will limit the likelihood the worker will contact ungrounded points, or points at different potentials.

The system neutral is a current carrying conductor, therefore, if the neutral is to be cut, or a broken neutral is to be spliced together, additional system safety grounds shall be installed in the immediate work area to bridge the opening and keep the work area at the same potential for the worker.

Open wire high-line telephone lines and insulated overhead ground wires may have high-induced voltage on them and shall be worked with approved live-line tools or be properly grounded.

If the possibility of step potential exists, workers on the ground shall wear approved rubber overshoes.

The ground connection shall be made to one or more of the following in order of preference.

For Distribution Systems this may be:

- Common neutral,
- Permanent ground, such as driven ground or counter-poise system,
- Temporary driven grounds outside the normal work area around the pole.

The Host Employer may state a preference here.

J. UNDERGROUND ELECTRICAL (UD) INSTALLATIONS

On Underground Distribution (UD) systems the appropriate Class 0 (only for direct buried cables operating a ≤ 600 V), Class II or III rubber insulating gloves with protectors, a hardhat, safety glasses, FR clothing, and approved rubber overshoes shall be worn when:

- Opening or closing padmounted or above ground enclosures housing direct buried cables
- Spiking cables
- Performing switching.

Notes:

- For the sole purpose of opening or closing for inspection of underground enclosures, Class II gloves are permitted up to 25 kV phase-to-phase, and Class III gloves are permitted up to 45 kV phase-to-phase.
- Caution must be exercised to determine if any abnormal condition exists, such as, a single phasing condition before opening any pad-mounted enclosure.

The appropriate Class II or III rubber insulating gloves with protectors, shall be worn on both hands at all times when working on or when working within reach or extended reach of MADs of the direct buried cables and associated parts such as elbows and bushings energized at 25 kV or less, phase-to-phase, or 15 kV volts or less phase-to-ground, regardless of the type work being performed. A hardhat, safety glasses, FR clothing, and approved rubber overshoes are also required to be worn.

Note: For voltages from 0 - 600 volts, Class "0" gloves may be worn provided all MADs are maintained at all times.

Unprotected parts of the employee's body may encroach within the MADs of such cables and associated parts. If there is likelihood that any unprotected part of the body can come into incidental contact with exposed energized parts, protective cover-up shall be installed over such cables and associated parts to prevent any incidental contact. This work may be performed only when absolutely necessary during rain, snow, mist or heavy fog.

The neutral of a direct buried cable is part of the system neutral; thus, cannot be cut or separated without first jumping out the neutral conductor. The semi-conducting covering is a grounded sheath and is a path-to-ground.

Exposed live parts such as live-front terminations operating above 5 kV phase-to-phase or 3 kV phase-to-ground must be worked with live-line tools.

All previously energized primary UD cables, regardless of its condition, must be spiked with an approved spiking tool before cutting the cable.

The energized conductor of an insulated direct buried cable shall be considered within reach or out of reach as follows:

- With the concentric neutral and a semi-conducting covering in place, the conductor is considered out of reach.
- With the concentric neutral removed, and the semi-conducting covering is in place, the conductor is considered within reach. With proper protective equipment in place over the semi-conducting covering, the conductor is considered out of reach.
- With both the concentric neutral and the semi-conducting covering removed, the conductor is considered within reach.
- Even when adequately covered with proper protective covering and/or physical barriers, any exposed energized terminations shall be considered within reach.
- **Note:** When making terminations to UD cables in place, exposed energized parts from 0 - 600 volts may be considered out of reach when covered with properly installed protective equipment or isolated with physical barriers.

K. DIRECT BURIED CABLES

Uncovering Cables

Common sense and good judgment should be used when removing the dirt from energized direct buried cables. After the dirt has been removed, a visual inspection shall be made before working on these cables. Rough handling of energized direct buried cables shall be avoided. Before uncovering direct buried Underground Distribution secondary cables by hand digging, these cables shall be de-energized and grounded. Energized Underground Distribution secondary cables operating from 0 - 600 volts may be uncovered by hand digging provided that:

- The cable route and depth are generally known,
- The hand tool has a non-conductive handle such as fiberglass, and
- The workers wear, FR clothing, hardhat, protective eyewear, and approved rubber footwear. When the energized secondary cables are exposed and become within reach, Class "0" gloves with protectors may be utilized unless primary cables are also within reach – which would then require Class II or III rubber insulating gloves with protectors.

Splicing and tapping UD secondary cables

Only trained and qualified workers at the jobsite may splice or tap up UD secondary cables, operating from 0 - 600 volts, energized or de-energized.

L. SUBSTATIONS

Any employee entering an attended substation, who does not regularly work in the station, shall report his or her presence to the employee in charge in order to receive information on special system conditions affecting employee safety.

M. RESOURCES AND REFERENCES

To effectively execute this program and procedures identified in this section of our safety manual here the following documents may be used. The documents will be filed with company records as noted in the table. Copies of documents that do not include sensitive personnel information will be provided to the host employer/general contractor/ construction manager upon request.

TITLE	PURPOSE	MAINTENANCE	SOURCE
Electric Transmission & Distribution Partnership Best Practices • Rubber Insulating Gloves and Sleeves • Administrative Controls • Best Practices Together • Cradle to Cradle • Insulate & Isolate • Job Briefings • Lock to lock • Pre-Use of Rubber protective Equipment • Qualified Observer	Procedures agreed upon that will improve safety	Filed with safety program as needed	NECA eSafetyLine www.esafetyline.com/neca/manual http://www.powerlinesafety.org/

6. EMERGENCY ACTION PLAN

A. PURPOSE AND SCOPE

The potential exists at every workplace that natural or manmade disasters can threaten the safety of individuals working at or occupying a facility or jobsite. The goal of this program is to provide an Emergency Action Plan to effectively respond to any threat and provide protection in the event of an incident. This plan describes the basic management procedures that are to be followed during emergencies. It also addresses the requirements for Emergency action plans as identified in General Industry 1910.38 and Construction 1926.35 as well as offers specific actions that are to be taken in response to various emergencies.

B. RESPONSIBILITIES

The response to an incident is both event and location specific. The responsibilities that follow are fundamental to the success of any Emergency Response Plan. Our company may have several representative individuals for each of the following titles are for a location. Depending on the size of the jobsite or location multiple individuals for each title may share responsibility. These individuals will be identified to the host and/or general contractor at the pre-job meeting and to employees before the job begins.

Safety Director

The Safety Director will:

- Contact Emergency Medical Services (EMS), internal and/or external Emergency Response Units, and/or law enforcement agencies, as needed and if they have not already been contacted.
- Provide communication between the Company, Host Employer General Contractor or Construction Manager and EMS, internal or external Emergency Response Units, and/or law enforcement agencies, as needed.
- Notify the Management of the emergency, and of any actions taken.
- Respond to an incident as instructed by Management
- Provide information to others affected by the emergency (property owners, contractors, etc.) regarding emergency and evacuation procedures, evacuation routes, and assembly area(s).
- Interface with all contractors to ensure coordination of their emergency response procedures with this Emergency Response Plan.

Management

The Management will:

- Authorize the Safety Director to serve as the Emergency Response Coordinator. Provide a list of back-up coordinators if the emergency will impact evening and night operations.
- Assess the situation(s) and determine the level(s) of response necessary.
- Consult with the Safety Director and site supervisor, as needed, to assist in the assessment.
- Evaluate the data provided by the Safety Director regarding the situation.
- Provide authorization to respond, including, but not limited to, evacuation of additional areas, buildings, etc. in the vicinity, as needed.
- Establish an Emergency Operations Center (EOC) or determine if one has been established for the jobsite.
- Appoint an Incident Commander to manage the EOC or assign a company representative to the EOC if it has been established by others.
- Designate a Public Relations Officer or spokesperson for the company and inform him/her of the emergency and any of actions taken.

Public Relations (or Designated Spokesperson)

The Public Relations Spokesperson will:

- Serves as the contact and provide communication to the media and other public agencies regarding the emergency.

Supervisor

The Supervisor will:

- Provide instructions to employees on actions to take when an emergency occurs, notification to emergency responders, evacuation procedures and routes, and assembly area(s).
- Coordinate emergency and evacuation procedures, evacuation routes, and assembly area(s) with others on site.
- Make sure employees and visitors exit the site/building, and meet at the prearranged assembly area(s) during an evacuation
- Be responsible for conducting head-counts to account for all employees, contractors, and visitors.
- Assist Management, the Safety Director and Public Relations with communications, as requested.
- Provide technical support on site based on the emergency to handle jobsite or building systems controls, as necessary.
- Assist with crowd control during evacuation.

Employees (As designated by the Safety Director)

Designated employees will:

- Assist in the evacuation of buildings (i.e., assist the handicapped, check rooms to ensure all have exited as long as it is safe to do so.)
- In the event of a bomb threat, assist in conducting a sweep of the jobsite, building areas or buildings, as directed by the Safety Director and response teams. **Note:** Employees familiar with the search area may often provide the best assistance to Safety Director and/or search teams in identifying unusual objects that do not belong in the search area.

Visitors/Contractors

In an emergency, individual employees are responsible for the safety of their visitors. If an individual is visiting you, you are to provide assistance to the visitor regarding emergency procedures and evacuation routes. The Safety Director will work with all contractors to ensure coordination of their emergency procedures with this Emergency Action Plan.

C. EMERGENCY REPORTING AND NOTIFICATION PROCEDURES

Emergency (life safety, fire, and other disasters) reporting for all jobsites shall be the 911 system unless other emergency services have been designated for your specific location, as indicated below. When using 911, details if the incident will be provided to the dispatcher. They will ensure appropriate services such as Emergency Medical Services, Fire and Police, respond. Each location/jobsite will have an emergency notification system to make all employees aware of any incidents. At some locations a public address (PA) system is installed to provide information and emergency broadcast announcements.

Location Specific Reporting Instructions

Safety Coordinator: _____

Phone Number: 911 or _____

Employee Emergency
Notification Procedures: _____

Other: _____

_____

Individuals calling in an emergency will:

State the location (e.g., jobsite address or descriptors, building and floor and location on the jobsite,

floor and/or room.)

Identify the type of situation requiring emergency assistance.

Employees are directed to address personal safety first. Calls should be made only when it is safe to do so. Procedures for specific threats are contained in this program.

Emergency Alarm/Employee Notification

The following system(s) are available at the jobsite/workplace to notify personnel of an emergency situation:

- Alarm Bell/Siren
- Voce Broadcast/Bullhorn
- Other: _____

D. ESCAPE ROUTES

When evacuation is necessary individuals will leave by means of the nearest exit using escape routes as designated by the supervisor and assemble at the pre-designated meeting areas.

E. SHELTER-IN-PLACE

Depending on the emergency (tornado, biological or chemical attack, or civil disturbance), evacuation or in-place sheltering may be necessary. The supervisor shall identify “shelter in place” locations for employees to respond accordingly to alarms/emergency notifications based on the emergency procedures in this plan.

F. TRAINING

General

The Safety Director reviews the Emergency Response Plan with management. Supervisors train their employees to ensure they have a thorough understanding of the Emergency Response Plan. New employees receive training during their first day of employment.

Special

Personnel assigned to special tasks associated with a given emergency receive training regarding the hazards, control measures, and their responsibilities in emergency response. Only employees who are trained in the use of fire extinguishers are directed to use them. All other personnel must evacuate buildings or follow the instructions of emergency response personnel.

Practice

The Safety Director will coordinate with appropriate outside emergency services, and the local Fire Department to schedule evacuation exercises and fire drills.

G. MEDICAL EMERGENCY

If someone requires emergency medical attention, EMS is contacted per the Emergency Reporting and Notification Procedures. The Safety Director is notified as soon as possible once the immediate needs of the victim are managed. Training on the availability and location of defibrillators as well trained operators is provided as part of the emergency response plan training. Individuals will not attempt to move an individual in need unless trained in First Aid/CPR training and/or the victim is in greater danger if not moved.

H. ELEVATOR ENTRAPMENT

Various types of elevators may be found on any jobsite. The following provides our company procedures in the event employees are trapped in one.

- Where available a button next to the telephone symbol/icon located on the call plate may be used to automatically call building operations or security personnel.
- Where available a telephone receiver, or a panel marked with a telephone will providing access to a receiver, may be used to automatically call building operations or security personnel.

Callers will provide the responder with the elevator and floor it has stopped. Callers will stay on the phone and await further instructions. Procedures for elevators that do not have a communication devices are as follows; remain calm and be patient for someone to notice the elevator is malfunctioning, call aloud for help in a loud voice to alert passers-by and/or responders. In all cases qualified persons shall respond and assist. Trapped individuals should remain in the elevator **unless specifically directed to attempt escape.**

I. FLOODING

The Safety Directed shall be notified of any flooding on the jobsite. The Safety Director will arrange to have the water supply shut off and to send qualified personnel to respond and provide assistance.

If possible, and if it can be done safely, disconnect all electrical equipment. If the source of water is overhead and time will allow, the affected area will be cleared to minimize water damage.

J. POWER OUTAGE

Where work is performed in areas where power is normally provided and a power outage occurs, the Safety Director shall be notified due to the threat of fire. A visual inspection of the area will be conducted to rule out fire (electrical or otherwise) as the cause of the outage. Where emergency lighting allows and/or flashlights are available an evacuation of the building or area shall occur.

K. FIRE & EXPLOSION

On jobsites where a fire alarms stem is in place notification of a fire shall be provided through activation of the system by smoke, fire or a pulled alarm.

When an alarm is activated, everyone shall exit the buildings immediately via the appropriate exit-way.

Where a fire has been observed and the alarms system has not been activated, employees shall exit the immediate area. As soon as it is safe, they will pull an alarm or follow the instructions in the Emergency Reporting and Notification Procedures.

Where they exist doors shall be closed behind exiting employees to delay the spread of the fire.

Employees shall move to the safe area 200 feet from the building as identified by the supervisor before the job began.

A headcount will be taken by managers and supervisors to ensure everyone has exited.

Employees shall remain in the safe area until further instructions are provided by the Supervisor, Safety Director or other authority assigned to the area.

L. BOMB THREAT

Employees shall immediately report suspicious object or parcel or bomb threats to their Supervisor or the Safety Director. Suspicious packages shall be identified as having some of the following characteristics:

- protruding wires, aluminum foil, oil stains and/or emit a peculiar odor
- address labels that display restricted endorsements (PERSONAL or PRIVATE)
- address labels that are: handmade, written with distorted handwriting, or made with cut & paste lettering
- address labels that contain inaccuracies in the addressee's name and/or title
- display a return address or the return address may be fictitious
- having excessive postage
- wrapped unprofessionally and irregular shapes, bulges or soft spots in the form of a letter bomb, usually feel rigid and appear uneven or lopsided

Suspicious Parcel or Object

When a suspicious parcel or object is identified, it shall:

- not be touched or moved
- be isolated and, if possible the area evacuated
- kept from away others

Information about the package who handled it, when/where it was discovered, etc. shall be noted and provided to the safety director or responding agency. Information about the package shall not be shared with any other individuals.

Verbal Telephone Threats

When a verbal telephone threat is received, the following actions are taken:

- The caller shall be kept on the line as long as possible so that you can gather more information. A record of words spoken by the caller should be kept. If caller identification is available, the caller's phone number shall be recorded.
- If the caller does not indicate the location of the bomb or the time of possible detonation, the employee on the line shall request this information.
- Attention shall be given to background noises such as motors running, music or any other nose, which may give an indication as to the location of the caller.
- the voice (male/female), voice quality (calm/excited), accents or speech impediments, and approximate age (young or old) shall be noted.

The Safety Director shall be notified immediately of any bomb threats. The person who received the call, he/she shall remain available until the Safety Director arrives. In some instances, the individual who received the call may be asked to meet with Safety Director at another location. Evacuation of the area shall be determined by the Safety Director or law enforcement.

Written Threats

Employees shall respond to written bomb threats as follows:

- Immediately notify Safety Director upon receipt of a threat.
- Promptly write down everything about the threat (i.e., location, room, area, wall, floor, etc.)
- Remain calm and do not discuss the threat with others.
- Save all materials, including envelopes or containers. Once the message is recognized as a bomb threat, further unnecessary handling should be avoided.

The Safety Director will notify appropriate law enforcement and management.

M. CHEMICAL EMERGENCIES

There are two types of chemical emergencies that can occur; a chemical leak or chemical attack. A chemical attack is the deliberate release of a toxic or unknown gas, liquid or solid that can possibly poison people and/or the environment. This can be associated with a terrorist act. A chemical leak is associated with a

malfunction of a system or activity, such as a traffic accident near a jobsite involving a chemical tanker truck. The following address common emergencies or basic procedures to address hazardous chemicals should there be a release on the jobsite or in the workplace.

Chemical Leak - Natural Gas Leak

Leaks can occur on indoor lines or when outdoor lines are damaged. In the event of a natural gas leak the following procedures shall be followed which are identified by the three R's: Recognize, React, and Report.

- Recognize
  - In its natural state, natural gas is colorless and odorless. Utility companies add a distinctive odor, that of rotten eggs, to make even the smallest leaks easier to detect. You should smell this odor when a leak occurs. Other signs of a leak include a blowing or hissing sound, dead or discolored vegetation in an otherwise green area, flames (if a leak has ignited), dirt or dust blowing from a hole in the ground and/or bubbling in wet or flooded areas.
- React
  - Assess the immediate threat to human life if a fire or explosion were to occur
  - Evacuate the area as needed by providing verbal instructions and move 200 feet away from the area of the leak or the building. When in doubt about the level and possible threat, evacuate.
  - TURN OFF AND DO NOT USE cellular phones, radios, pagers.
  - DO NOT TURN ON/OFF flashlights, lights, alarms, electrical equipment, elevators or other devices capable of producing static electricity, sparks, arcs or open flame.
  - If possible, stay away from carpeted areas to avoid sparks of static electricity.
  - Do not start vehicles.
- Report
  - When you are away from the gas leak contact your Supervisor or the Safety Director.
  - Safety Director will notify Building Operations or the gas company, as appropriate.

Chemical Attack

Typically notification of a terrorist act will come through local law enforcement agencies. Actions described below offer procedures to follow in the event of a threat. A chemical attack may occur without advance waning. Signs of a chemical attack include many people suffering from watery eyes, twitching, choking, difficulty breathing or losing coordination. Many sick or dead birds, fish or other small animals are also cause for suspicion. The following also provides procedures to follow when an incident occurs without warning.

If a threat of a chemical attack is received, the Safety Director will notify law enforcement.

If necessary and time allows for a safe evacuation of the jobsite, law enforcement will make the decision. Supervisors will be contacted regarding the evacuation.

If time does not permit a safe evacuation or an evacuation would require individuals to pass through contaminated areas, supervisors will be contacted to instruct employees, other contractors and visitors where to seek shelter. Follow the procedures for in-place sheltering as provided below. Depending upon the security considerations, the PA system may or may not be used.

Supervisors or their designees will take the lead and ensure exterior doors and windows, and air vents are closed as quickly as possible.

Staff assigned to the building will turn off all fans and heating and air conditioning systems. Some systems automatically provide for exchange of inside air with outside air. These systems, in particular, need to be turned off, sealed, and/or disabled.

If told there is a danger of explosion, close the window shades, blinds, or curtain, as appropriate.

All individuals will be directed to gather whatever essential disaster supplies are available in the building from offices, custodial closets, etc. This includes items such as nonperishable food, bottled water, battery-powered radios, first-aid supplies, flashlights, batteries, duct tape, plastic sheeting, and plastic garbage bags.

Select interior room(s) above ground floor, with the fewest windows or vents. Room(s) should have adequate space for everyone to be able to sit. Avoid overcrowding by selecting several rooms if necessary. Large storage closets, utility rooms, pantries, copy and conference rooms without exterior windows will work well. Avoid selecting a room with mechanical equipment like ventilation blowers or pipes. This equipment may not be able to be sealed from the outdoors.

It is ideal to have a hard-wired telephone in the room(s) you select. Call emergency contacts and have the phone available if you need to report a life-threatening condition. Cellular telephone equipment may be overwhelmed or damaged during an emergency.

Take emergency supplies and go into the room you have designated. Seal all windows, doors, and vents with plastic sheeting and duct tape or anything else you have on hand. Do not cover glass, just joints.

Write down the names of everyone in the room. Call the Safety Director with this information.

The Safety Director will monitor law enforcement communications as well as local radio and television, or use the Internet. The law enforcement will be kept apprised of the situation and provide further instructions. Wait at your location until you are told all is safe or to evacuate.

N. EARTHQUAKE

The following procedures shall be followed in the event of an earthquake.

Stay inside until the shaking stops and it is safe to go outside. Most injuries during earthquakes occur when people are hit by falling objects when entering or exiting buildings.

Drop, Cover and Hold On! Minimize movements during an earthquake to a few steps to a nearby safe place.

If you are indoors, take cover under a sturdy desk, table or bench, or against an inside wall, and hold on. Stay away from glass, windows, outside doors or walls and anything that could fall, such as lighting fixtures, wall hangings, or furniture.

If there isn’t a table or desk near you, cover your face and head with your arms and crouch in an inside corner of the building. Doorways should only be used for shelter if they are in close proximity to you and if you know that it is a strongly supported load-bearing doorway.

If you are outdoors, stay there. Move away from buildings, streetlights and utility wires.

If you become trapped in debris:

- Do not light a match.
- Do not move about or kick up dust.
- Cover your mouth with a handkerchief or clothing.
- Tap on a pipe or wall so rescuers can locate you. Use a whistle if one is available. Shout only as a last resort - shouting can cause you to inhale dangerous amounts of dust.

If you must go out after an earthquake watch for fallen objects, downed electrical wires, weakened walls, bridges, roads and sidewalks.

Be prepared for aftershocks. These secondary shock waves are usually less violent than the main quake but can be strong enough to do additional damage to weakened structures.

If the electricity goes out, use flashlights or battery powered lanterns. Do not use candles, matches or open flames indoors after the earthquake because of possible gas leaks.

Evacuate buildings if fumes are detected and the building is not well ventilated.

O. TORNADO

A tornado is a violently rotating column of air extending from a thunderstorm to the ground. They are most likely to occur during the spring and summer months between 3 p.m. and 9 p.m., but can occur at any time of day or night and at any time of the year. When conditions are right for a tornado the National Weather service will issue a Tornado Watch. This means tornadoes are possible. If they issue a Tornado Warning, a tornado has been sighted or indicated by weather radar.

Tornado Watch Procedures

In the event of a tornado watch, remember the following:

- The Safety Director will monitor NOAA Weather Radio and commercial radio or television newscasts for the latest information and keep law enforcement appraised of conditions.
- If necessary, the law enforcement will close the affected facility (or facilities). Building occupants will be notified what to do over the PA system. If a PA system is not available, supervisors will be contacted to notify employees, other contractors and visitors of the closure and what to do.
- In the event time does not permit a safe evacuation, building occupants are to seek safe shelter.

Tornado Warning Procedures

In the event of a tornado warning, remember the following:

- When a tornado has been sighted, seek shelter immediately.
- Seek shelter in buildings as listed below.
- If you are in a building without a basement, go to an interior room on the lower level (closets, interior hallways). Put as many walls as possible between you and the outside. Get under a sturdy table and use arms to protect head and neck. Stay there until the danger has passed.
- Stay away from windows, doors and outside walls. Go to the center of the room. Stay away from corners because they attract debris.
- If caught outside with no shelter, lie flat in a nearby ditch or depression and cover your head with your hands. Be aware of the potential for flooding.

Typical locations that offer a good shelter in place for tornados are: basements, hallways, corridors, and internal break rooms. Places to avoid include lobbies, near windows, away from large overhanging fixtures, etc.

P. WORKPLACE VIOLENCE

Intervention is the key to workplace violence situations. Employees shall report any pattern of behavior and attitude that causes concern to their supervisor and/or the Safety Director. The Safety Director will work with the appropriate entities to discuss procedures for diffusing the situation. For crimes in progress, violent incidents or specific threats of imminent violence employees will:

- Get to safety as quickly as possible.
- Immediately contact emergency services as provided in the Emergency Reporting and Notification Procedures. If able, use a phone out of sight and/or hearing of the individual or ask another to call for help.
- Not attempt to intervene physically or deal with the situation himself/herself. It is critical that law enforcement take charge of any incident that can or does involve physical harm.
- When making the call, stay on the line and provide the following information
    - Location
    - Your name
    - Nature of the problem
    - Number of individuals involved
    - Whether or not weapons are involved

Hostage Situation

If involved in a hostage situation, take the following actions:

- Immediately contact emergency services as provided in the Emergency Reporting and Notification Procedures., if possible. Supply as many details as possible including number of persons involved, description of hostage takers, weapons displayed, threats made, etc.
- Do what they are told without argument.
- Not attempt to negotiate or argue with a hostage taker.
- Try to get others to remain calm. Tell them to do what they are told.

Civil Disturbance

Any indication of a civil disturbance such as a demonstration, picketing, or riot shall be reported immediately to the Safety Director.

- Jobsite/building personnel should:
  - remain in the building and/or on the jobsite away from the disturbance area, unless instructed to do otherwise
  - stay away from windows
  - avoid confrontation with demonstrators, picketers, or rioters
  - leave telephones clear in case contact is necessary
- It may be necessary to lock exterior doors.
- Safety Director will arrange for escorts to enter or exit the buildings/jobsites as needed.

Q. RESOURCES AND REFERENCES

To effectively execute the policy and procedures identified in this section of our safety manual the following documents may be used. The documents will be filed with our company records (personnel files, OSHA Recordkeeping, etc.) as noted in the table. Copies of documents that do not include sensitive personnel information will be provided to the host employer/general contractor/construction manager upon request.

TITLE	PURPOSE	MAINTENANCE	SOURCE
Emergency Response Checklist	Used to perform an annual review of companywide and jobsite safety programs	Filed with company annual review files	NECA eSafetyLine www.esafetyline.com/neca/manual http://www.osha.gov/SLTC/etools/evacuation/docs/eap_checklist.pdf
Training Attendance Rosters	Documents used to identify training completed and employees present	Filed with company personnel records	NECA eSafetyLine www.esafetyline.com/neca/manual

7. ERGONOMICS SAFETY PROGRAM

A. PURPOSE AND SCOPE

The purpose of an ergonomics program is to apply ergonomic principles to the workplace in an effort to reduce the number and severity of Musculoskeletal Disorders (MSDs), thus decreasing workers' compensation claims and, where possible, increase productivity, quality, and efficiency. An ergonomically sound work environment maximizes employee comfort while minimizing the risk of undue physical stress.

A proactive approach focuses on making changes when risks have already been identified, as well as incorporating ergonomics into the design phase of a new facility or process, into purchasing new equipment or tools, and into the contemplation of scheduling changes. The Company has such a program which includes the following components:

B. RESPONSIBILITIES

Safety Director

The Safety Director will:

- Provide a copy of the Plan to employees free of charge and within 15 days of the request
- ensure that evaluators performing worksite evaluations and training are properly trained
- ensure that control measures are implemented in a timely manner
- ensure that a system is in place for employees to report MSD signs or symptoms and suspected work-related risk factors to managers and supervisors;
- ensure that accurate records are maintained and provide documentation upon request
- schedule manager, supervisor, and employee training and maintain records to include date, name of instructor, topic, and materials used
- monitor the program on a quarterly basis and provide an annual review
- follow-up with any ergonomics strategy and/or solutions

Supervisors

Supervisors will:

- Report all incidents to the Safety Director as soon as possible or before the end of the work shift
- accountability for the health and safety of all employees within their departments through the active support of the ergonomics program
- allocating human and/or financial resources
- attending ergonomics training to familiarize themselves with the elements of the program, recognition and control of work-related ergonomic risk factors, MSD signs and symptoms, early reporting requirements and procedures, and medical management
- ensure that employees have received the appropriate training
- ensure that ergonomics practices and principles are considered when conducting worksite evaluations
- ensure that recommended controls are implemented and/or used appropriately through active follow-up

Employees

All employees will:

- when provided, use the appropriate tools, equipment, parts, materials, and procedures in the manner established by managers and supervisors
- ensure that equipment is properly maintained in good condition and when not, report it immediately

- provide feedback to supervisors regarding the effectiveness of design changes, new tools or equipment, or other interventions
- attend ergonomics training as required and apply the knowledge and skills acquired to actual jobs, tasks, processes, and work activities
- report MSD signs or symptoms and work-related MSD hazards to the supervisor as early as possible to facilitate medical treatment and initiate proactive interventions
- take responsibility in their personal health and safety
-

C. GENERAL

Ergonomics is the study of people and their interaction with the elements of their job or task including equipment, tools, facilities, processes, and environment. It is a multidisciplinary field of study integrating industrial psychology, engineering, medicine, and design.

In a more practical sense, ergonomics is the science of human comfort. When aspects of the work or workplace exceed the body's capabilities, the result is often a MSD. To help avoid MSDs, work demands should not exceed the physical capabilities of the worker. MSDs are also known by several other names including:

- CTDs (cumulative trauma disorders)
- RSIs (repetitive stress or repetitive strain injuries)
- RMIs (repetitive motion injuries)
- Overuse syndrome

The most common, recognizable name for MSDs is cumulative trauma disorders or CTDs. Whatever the name used, these injuries belong to a family or group of wear and tear illnesses that can affect muscles, nerves, tendons, ligaments, joints, cartilage, blood vessels or spinal discs of the body. MSDs do not include slips, trips and falls, cuts, motor vehicle accidents or other similar accidents; although a close look at the reasons for acute injuries often reveals design problems that can be corrected.

D. EVALUATIONS

<u>Worksite Evaluations</u>

Triggers for a worksite evaluation:

- When an employee reports an MSD sign or symptom
- Jobs, processes, or work activities where work-related ergonomic risk factors have been identified which may cause or aggravate MSDs
- Any change of jobs, tasks, equipment, tools, processes, scheduling, or changes in work shift hours (for example, going from a traditional 5-day, 8 hour shift to a compressed 4-day, 10 hour shift)
- When a safety walk-through or scheduled inspection or survey has uncovered potential MSD hazards

Work-related risk factors to be considered in the evaluation process include, but are not limited to:

- Physical risk factors including force, postures (awkward and static), static loading and sustained exertion, fatigue, repetition, contact stress, extreme temperatures, and vibration
- Administrative issues including job rotation/enlargement, inadequate staffing, excessive overtime, inadequate or lack of rest breaks, stress from deadlines, lack of training, work pace, work methods, and psychosocial issues
- Environmental risk factors including noise, lighting, glare, air quality, temperature, humidity, and personal protective equipment and clothing

- Combination of risk factors such as, but not limited to, highly repetitive, forceful work with no job rotation or precision work done in a dimly lit room

Setting Priorities. Worksite evaluations will be scheduled based upon the following:

- Any job, process, operation, or workstation which has contributed to a worker's current MSD
- A job, process, operation, or workstation that has historically contributed to MSDs
- Specific jobs, processes, operations, or workstations that have the potential to cause MSDs

Worksite Evaluations Methods. Various methods will be used to evaluate problem jobs including:

- Walk-through and observations
- Employee interviews
- Surveys and questionnaires
- Checklists
- Detailed worksite evaluations

Control of the Ergonomic Risk Factors. The Company will take steps to identify ergonomic risk factors and reduce hazards by using a three-tier hierarchy of control (in order of preference):

- Engineering controls. The most desirable and reliable means to reduce workplace exposure to potentially harmful effects. This is achieved by focusing on the physical modifications of jobs, workstations, tools, equipment, or processes.
- Administrative controls. This means controlling or preventing workplace exposure to potentially harmful effects by implementing administrative changes such as job rotation, job enlargement, rest/recovery breaks, work pace adjustment, redesign of methods, and worker education.
- Personal protective equipment (PPE). Although not recognized as an effective means of controlling hazards and do not take the place of engineering or administrative controls, there are acceptable forms of PPE, which include kneepads and anti-vibration gloves.

E. TRAINING

Training is intended to enhance the ability of managers, supervisors, and employees to recognize work-related ergonomic risk factors and to understand and apply appropriate control strategies. Training in the recognition and control of ergonomic risk factors will be given as follows:

The minimum for all managers, supervisors, and employees will include the following elements:

- An explanation of the Company's ergonomics program and their role in the program
- A list of the exposures which have been associated with the development of MSDs
- A description of MSD signs and symptoms and consequences of injuries caused by work and non work-related risk factors
- An emphasis on the importance of early reporting of MSD signs and symptoms and injuries to management
- The methods used by the Company to minimize work and non work-related risk factors
- Training will be provided in one, or a combination, of the following formats:
  - Oral presentations
  - Videos
  - Distribution of educational literature
  - Hands-on equipment and work practice demonstrations

Trainers will be experienced in delivering training programs that address all work and non work-related risk factors, and will be familiar with the Company operations. Training will be provided from one, or a combination, of the sources listed below:

- Internally developed resources
- The workers' compensation carrier

- An outside consultant

All training will be documented and all employees will be required to sign a training sign-in roster.

MSD (Medical) Management and Early Return-to-Work.

Pursuant to the law, the Company provides medical care to all employees injured at work. The Company maintains a good working relationship with our health care provider. All work-related injuries and illnesses will be referred to them unless the injured employee has notified the Company in writing that other provisions have been made prior to an injury or illness.

In the event of a work-related injury or illness, the health care provider will:

- provide diagnosis and treatment for the Company's employees
- determine if reported MSD signs or symptoms are work-related
- comply with the Company's Early Return-to-Work program by recommending restricted, modified, or transitional work duties when appropriate
- refer the Company's injured employees to other clinical resources for therapy or rehabilitation
- provide the Company with timely work status reports
- develop a positive working relationship with the Company's workers' compensation carrier

The Company has an aggressive Early Return-to-Work program and will offer return-to-work opportunities to all injured employees in accordance with work restrictions identified by a recognized health care provider.

Program Evaluation and Follow-Up

In order to ensure that issues have been addressed and that new problems have not been created, monitoring and evaluation will be conducted on an on-going basis. The methods include use of individual interviews and checklists to reevaluate the job/task to ensure that risks have been reduced, minimized, or eliminated.

Annual Program Review

The Company Safety Director will conduct an annual program review to assess the progress and success of the program. The review will consider the following:

- Evaluation of all training programs and records
- The need for retraining of managers, supervisors, and employees
- The jobs, processes, or operations which have produced a high incidence rate of work-related MSDs
- The length of time between a request for an ergonomic evaluation and the actual evaluation.
- The length of time between the point at which the results of the evaluation are known and when implementation of controls begins
- The length of time between the beginning and completion of implementation of controls
- The program's success based upon comparison to previous years using the following criteria:
- Number and type of lost workdays associated with OSHA recordable cases
- Cost of workers' compensation cases
- Employee feedback through direct interviews, walk-through observations, written surveys and questionnaires, and reevaluations

F. RESOURCES AND REFERENCES

To effectively execute the policy and procedures identified in this section of our safety manual the following documents may be used. The documents will be filed with our company records (personnel files, OSHA Recordkeeping, etc.) as noted in the table. Copies of documents that do not include sensitive personnel information will be provided to host employer/general contractor/construction manager upon request.

TITLE	PURPOSE	MAINTENANCE	SOURCE
Training Attendance Rosters	Documents used to identify training completed and employees present	Filed with company personnel records	NECA eSafetyLine www.esafetyline.com/neca/manual

8. FALL PROTECTION

A. Purpose and Scope

Fall hazards are a major concern in our industry. This program has been developed to ensure that all employees are protected from these hazards while working on elevated surfaces and to comply with OSHA 29 CFR 1926 Subpart M Fall Protection.

B. RESPONSIBILITIES

Safety Director

The Safety Director will:

- coordinate the type of fall protection (fixed protection systems or PPE) to be used on the jobsite with the general contractor/host/construction manager
- will ensure that all fall protection equipment meets required specifications for the intended use
- ensure that all personnel required to use fall protection equipment have been medically qualified and trained in the proper use of the equipment

Supervisors

Supervisors will:

- ensure that personal fall protection systems are used where required
- will inspect fall protection equipment on a weekly basis

Employees

Employees will:

- be trained to recognize fall hazards and the procedures to minimize these hazards
- use personal fall protection equipment as trained
- inspect their fall protection equipment before each use
- inform their supervisors of any conditions that may hinder their ability to work at heights or use personal fall arrest equipment

C. INSTALLATION AND USE OF EQUIPMENT

All equipment will be installed and used in accordance with OSHA standards and the manufacturer's instructions.

The installation and use of equipment will be inspected and approved by a competent person. All equipment will be used only for the application for which it was designed.

D. FALL PROTECTION EMERGENCIES

Potential fall emergencies will be evaluated.

An equipment inventory will be conducted by the supervisor before each job where fall protection is required. The supervisor will ensure that fall protection equipment or tools are available for post-fall recovery (ladders, scaffolds, man-lifts etc.), emergency phone numbers are posted and first-aid equipment and personnel are prepared to respond to a fall emergency.

E. TRAINING

Employees will receive annual training on the use of fall protection. Training will include information on the use of fall protection equipment, inspection, installation and maintenance, OSHA Safety Standards, and company procedures. Training will consist of toolbox talks and hands-on demonstrations. Re-training will be provided as needed.

Topics to be included:

- Nature of the fall hazards employees may be exposed to.
- Correct procedures for erecting, maintaining, disassembling, and inspecting fall protection systems.
- Use and operation of controlled access zones, guardrails, personal fall arrest systems, warning lines, and safety monitoring systems.
- Role of each employee in the Safety Monitoring System (if one is used).
- Correct procedures for equipment and materials handling, and storage and erection of overhead protection.
- Requirements of the OSHA Fall Protection Standard, 29 CFR 1926, Subpart M.

F. FALL PROTECTION SYSTEMS

Covers

- All covers shall be secured to prevent accidental displacement.
- Covers shall be color-coded or bear the markings “HOLE” or “COVER”.
- Covers located in roadways shall be able to support twice the axle load of the largest vehicle that might cross them.
- Covers shall be able to support twice the weight of employees, equipment, and materials that might cross them.

Guardrail Systems

Guardrail systems shall be erected at unprotected edges, ramps, runways, or holes where it is determined by the Safety Director that erecting such systems will not cause an increased hazard to employees. The following specifications will be followed in the erection of guardrail systems.

Toprails shall be:

- At least ¼ inch in diameter (steel or plastic banding is unacceptable)
- Flagged every six (6) feet or less with a high visibility material if wire rope is used
- Inspected by the Safety Director as frequently as necessary to ensure strength and stability
- Placed forty-two (42) inches (plus or minus three (3) inches) above the walking/working level
- Adjusted to accommodate the height of stilts, if they are in use.

Midrails, screens, mesh, intermediate vertical members, and solid panels shall be erected in accordance with the OSHA Fall Protection Standard.

Gates or removable guardrail sections shall be placed across openings of hoisting areas or holes when they are not in use to prevent access.

Personal Fall Arrest Systems

Personal fall arrest systems shall be issued to and used by employees as determined by the Safety Director and may consist of anchorage, connectors, body harness, deceleration device, lifeline, or suitable combinations.

Personal fall arrest systems shall:

- Limit the maximum arresting force to 1800 pounds
- Be rigged so an employee cannot free fall more than six (6) feet or contact any lower level
- Bring an employee to a complete stop and limit the maximum deceleration distance traveled to three and a half (3 ½) feet
- Be strong enough to withstand twice the potential impact energy of an employee free falling six (6) feet (or the free fall distance permitted by the system, whichever is less)
- Be inspected prior to each use for damage and deterioration
- Be removed from service if any damaged components are detected.

All components of a fall arrest system shall meet the specifications of the OSHA Fall Protection Standard, and shall be used in accordance with the manufacturer's instructions.

- The use of non-locking snaphooks is prohibited.
- Dee-rings and locking snaphooks shall:
  - Have a minimum tensile strength of 5000 pounds
  - Be proof-tested to a minimum tensile load of 3600 pounds without cracking, breaking, or suffering permanent deformation.
- Lifelines shall be:
  - Designed, installed, and used under the supervision of the Safety Director
  - Protected against cuts and abrasions
  - Equipped with horizontal lifeline connection devices capable of locking in both directions on the lifeline when used on suspended scaffolds or similar work platforms that have horizontal lifelines that may become vertical lifelines.
- Self-retracting lifelines and lanyards must have ropes and straps (webbing) made of synthetic fibers, and shall:
  - Sustain a minimum tensile load of 3600 pounds if they automatically limit free fall distance to two (2) feet; or
  - Sustain a minimum tensile load of 5000 pounds (includes ripstitch, tearing, and deforming lanyards).
- Anchorages must support at least 5000 pounds per person attached and shall be:
  - Designed, installed, and used under the supervision of the Safety Director
  - Capable of supporting twice the weight expected to be imposed on it
  - Independent of any anchorage used to support or suspend platforms.

Safety Monitoring Systems

In situations when no other fall protection has been implemented, the Safety Monitor shall monitor the safety of employees in these work areas. The Safety Monitor shall be:

- Competent in the recognition of fall hazards
- Capable of warning workers of fall hazard dangers
- Operating on the same walking/working surfaces as the employees and able to see them
- Close enough to work operations to communicate orally with employees
- Free of other job duties that might distract them from the monitoring function.

No employees other than those engaged in the work being performed under the Safety Monitoring System shall be allowed in the area. All employees under a Safety Monitoring System are required to promptly comply with the fall hazard warnings of the Safety Monitor.

Warning Line Systems

Warning line systems consisting of supporting stanchions and ropes, wires, or chains shall be erected around all sides of roof work areas.

- Lines shall be flagged at no more than six (6) foot intervals with high-visibility materials.

- The lowest point of the line (including sag) shall be between 34 and 39 inches from the walking/working surface.
- Stanchions of warning line systems shall be capable of resisting at least 16 pounds of force.
- Ropes, wires, or chains must have a minimum tensile strength of 500 pounds.
- Warning line systems shall be erected at least six (6) feet from the edge, except in areas where mechanical equipment is in use. When mechanical equipment is in use, warning line systems shall be erected at least six (6) feet from the parallel edge, and at least ten (10) feet from the perpendicular edge.

G. Resources and References

To effectively execute the policy and procedures identified in this section of our safety manual the following documents may be used. The documents will be filed with our company records (personnel files, OSHA Recordkeeping, etc.) as noted in the table. Copies of documents that do not include sensitive personnel information will be provided to the host employer/general contractor/construction manager upon request.

TITLE	PURPOSE	MAINTENANCE	SOURCE
Fall Protection Checklist	Used to determine if and what types of fall protection are needed.	Filed at jobsite	NECA eSafetyLine www.esafetyline.com/neca/manual
Personal Fall Arrest System Checklist	Used to verify that PFASs are in good and safe working order	Filed at jobsite	http://www.ohio.edu/ehs/docs/fall_arrest.pdf
Toolbox Talks	Used to perform training on types of fall hazards and fall protection.	Filed at jobsite	NECA eSafetyLine www.esafetyline.com/neca/manual http://www.lni.wa.gov/Safety/Topics/AtoZ/ToolBoxTalks/default.asp
Training Attendance Rosters	Documents used to identify training completed and employees present	Filed with company personnel records	NECA eSafetyLine www.esafetyline.com/neca/manual

9. FIRE EXTINGUISHER PROGRAM

A. PURPOSE AND SCOPE

This procedure establishes minimum standards for the placement, use, maintenance, and testing of portable fire extinguishers. Life safety will always be considered as the primary goal when dealing with emergency response activities including the use of portable fire extinguishers.

This procedure applies to all of our company employees, all contractors and vendors performing work on company property, and all other individuals who are visiting or have business with our company.

Occupational Safety and Health Administration: Portable Fire Extinguishers 29 CFR 1910.157.

B. RESPONSIBILITIES

Safety Director

The Safety Director will:

- Provide a copy of the Plan to employees free of charge and within 15 days of the request
- Management is responsible for development and review of this program.
- Management is also responsible for appropriate employee training.
- Management is responsible for enforcement of this program.
- Assure contractors and vendors shall comply with all procedures outlined in this policy.

Supervisors

Supervisors will:

- Supervisors are responsible for enforcement of this program.
- Report all incidents to the Safety Director as soon as possible or before the end of the work shift.
- Require employees to use appropriate Personal Protective Equipment (PPE) when operating the equipment.

Employees

All employees will:

- Employees shall comply with all procedures outlined in this policy. This includes, but is not limited to, use of the appropriate PPE.

C. DEFINITIONS

Agent: The contents of a fire extinguisher that causes extinguishment upon application to the fire. Agent types include:

Water and water based foam

Ordinary dry chemical (sodium bicarbonate base) and Purple K (potassium bicarbonate base)

Multi-purpose dry chemical (monoammonium phosphate base)

Inert gas (carbon dioxide)

Halon

Halon Replacement

Dry Powder-various dry compounds for fighting combustible metal fires

Class: The Class of fire indicates the fuel that is burning. Class is useful in labeling fire extinguishers for use since all agents are not effective on all fires. Fire Classes are:

Class A, ordinary combustibles (wood, paper, etc.)

Class B, flammable and combustible liquids and gasses

Class C, energized electrical equipment

Class D, combustible metals

Class K, cooking oils and fats

Contractor: A non-company employee being paid to perform work in our facility.

Incipient Stage Fire: The beginning or initial stage of a fire. Generally, the heat and smoke production and fire growth are manageable. If an employee believes that a fire is too big, too smoky or too hot, the fire is ***not*** an incipient stage fire.

PASS: An acronym that describes the main steps in fire extinguisher operation: **P**ull, **A**im, **S**queeze, **S**weep.

Portable Fire Extinguisher: A unit designed for fire extinguishment, that contains a fire extinguishing agent, expelled by pressure or a manual pump, and that is capable of being carried by hand. (Note: Class D agent can be stored and applied with a scoop or shovel and can be stored in a container other than an extinguisher.)

UL: Underwriters Laboratories, a testing and certification laboratory.

Vendor: A non-company employee being paid to perform a service in our facility.

Wheeled Fire Extinguisher: A fire extinguisher that is heavy enough to require a wheeled carriage. Size ranges are: Dry chemical and dry powder 50lbs. to 350lbs., Foam 33 gallons, carbon dioxide 50lbs-100lbs, Halon and replacements (50lbs and greater).

D. GENERAL

Fire Extinguisher Selection

Fire extinguishers will be selected based upon the hazard(s) present in the area and the expected types of fires that could result. Both the type and capacity of the fire extinguisher will be determined by the potential hazard. All fire extinguishers provided in our facility will be UL approved.

Placement Placement of fire

Selection Guide:

Fire Hazard Class	Agent Selection
Class A	1. Water 2. Foam 3. Multi-purpose dry chemical 4. Halon 5. Halon replacement
Class B	1. Ordinary dry/Purple K chemical 2. Multi-purpose dry chemical 3. Halon 4. Halon substitutes 5. Carbon dioxide
Class C	1. Ordinary dry/Purple K chemical 2. Multi-purpose dry chemical 3. Halon 4. Halon substitutes 5. Carbon dioxide
Class D	Dry powder selected for the specific combustible metal
Class K	Wet chemical (potassium-based liquids)

Extinguishers will conform to the following guidelines:

- Travel Distance:
  - Hazard: High hazard areas will have a fire extinguisher placed closer than the maximum travel distances.
- Ease of access: Areas that are difficult to access will have a fire extinguisher placed closer so that response to a fire will not be delayed.
- Permanent location: All fire extinguishers in our facility will have a permanent location consisting of a wall mount, a fire extinguisher cabinet, or a vehicle bracket to assure access.
- Damage: Extinguishers will be located to minimize the possibility of damage and being obstructed by traffic or work activities in the area.
- Marking: All fire extinguisher locations will be conspicuously marked with signs or other indicators.

Placement Guide:

Fire Hazard Class	Travel Distance
Class A	75 feet or less
Class B	50 feet or less
Class C	Based on Class A and B extinguisher placement, but close to the hazard
Class D	75 feet or less
Class K	Close to the cooking surface

Care and Maintenance

- Fire extinguishers will be kept unobstructed and in clear view at all times.
- Fire extinguishers will be inspected on a monthly schedule by trained facility personnel and a written record of the inspection will be maintained. The inspection will include:
    - Verify that the extinguisher is in the proper location
    - Physical condition
    - Pressure gage within operable range (if so equipped)
    - Nozzle is unobstructed
    - Lift the extinguisher to verify it is not too light (indicating a loss of contents)
- An annual inspection will be performed by a certified fire extinguisher contractor and records of service will be maintained.
- After any fire extinguisher is used, the unit will be removed from service until it is inspected and recharged by the contractor.
- If a fire extinguisher is damaged, involved in an incident where damage could result, or if the extinguisher shows signs of corrosion, it will be removed from service until it is inspected and recharged by the contractor.
- All fire extinguishers will be labeled with the class of fire(s) that they are designed to fight and with the operating instructions.
- All stored pressure dry chemical extinguishers that require a 12-year hydrostatic test are emptied and subjected to applicable maintenance procedures every 6 years.
- All portable extinguishers shall be hydrostatically tested at the intervals listed in the following table:

Type of Extinguisher	*Test Interval (Years)*
Soda acid (stainless steel shell)	5
Cartridge operated water and/or antifreeze	5
Stored pressure water and/or antifreeze	5
Wetting agent	5
Foam (stainless steel shell)	5
Aqueous Film Forming foam (AFFF)	5
Loaded stream	5
Dry chemical with stainless steel	5
Carbon dioxide	5
Dry chemical, stored pressure, with mild steel, brazed brass or aluminum shells	12
Dry chemical, cartridge or cylinder operated, with mild steel shells	12
Halon 1211	12
Halon 1301	12
Dry powder, cartridge or cylinder operated with mild steel shells	12

Exceptions to hydrostatic testing requirement where more frequent testing may be required:

- When the cylinder or shell threads are damaged;
- When there is corrosion that has caused pitting, including corrosion under removable name plate assemblies;
- When the extinguisher has been burned in a fire; or
- When a calcium chloride extinguishing agent has been used in a stainless steel shell.

Fire Extinguisher Use

- ***There is nothing in our facility that is worth a human life.*** No employee is required to use a fire extinguisher. Operation of a fire extinguisher is a voluntary action.
- Only trained personnel are authorized to use a portable fire extinguisher.
- Fire extinguishers will only be used on incipient stage fires.
- The steps in fire extinguisher use are:
    - Alert employees at immediate risk from the fire
    - Activate the facility fire alarm
    - Use the PASS acronym for operation
    - All fire extinguisher use will be reported to the program administrator
- Operational safety rules for fire extinguisher use are:
    - Fight only incipient stage fires
    - Use a fire extinguisher that is approved for the class of fire
    - Always keep an exit path open behind you
    - Stay low to avoid heat and smoke

- Do not turn your back on a fire, even after extinguishment
- Avoid breathing smoke-ventilate the area after extinguishment

E. TRAINING

- Only trained and authorized employees are allowed to use fire extinguishers in our facility.
- Training will be conducted at the time that the employee is authorized to use fire extinguishers and familiar with the hazards involved with incipient stage firefighting. Such training will be repeated annually for all authorized personnel.
- Employees who are not authorized to use fire extinguishers will be advised that their only duties in a fire are: notification and evacuation.
- Training will consist of classroom training supplemented by hands on training where necessary. In all cases, employee safety will be stressed over property conservation. Additional training will be provided for any personnel who are assigned to operate wheeled fire extinguishers**.**

Revision History Record:

Revision Number	Section	Revised By	Description
0	NA	NA	Original document.

F. RESOURCES AND REFERENCES

To effectively execute the policy and procedures identified in this section of our safety manual the following documents may be used. The documents will be filed with our company records (personnel files, OSHA Recordkeeping, etc.) as noted in the table. Copies of documents that do not include sensitive personnel information will be provided to host employer/general contractor/construction manager upon request.

TITLE	PURPOSE	MAINTENANCE	SOURCE
Training Attendance Rosters	Documents used to identify training completed and employees present	Filed with company personnel records	NECA eSafetyLine www.esafetyline.com/neca/manual

10. FIRE PROTECTION/PREVENTION PROGRAM

A. PURPOSE AND SCOPE

The goal of the Fire Protection program is to establish safety rules regarding the prevention and response to workplace fires. This written program works to create and maintain a safe work environment as required in 29 CFR 1926 Subpart F as well as 1926.50 (First Aid), 1926.65 (Hazardous waste/emergency response) and 1926.35 (Emergency action plans).

B. RESPONSIBILITIES

Safety Director

The Safety Director will:

- Develop, implement and administer a site-specific fire prevention and protection program that will cover all jobsite offices and storage trailers, temporary warehousing and material laydown areas, vehicles and mobile equipment and work activities.
- Ensure firefighting equipment is installed and maintained at all jobsites, in vehicles and work areas.
- Identify fire hazards at the jobsite.
- Conduct fire safety training sessions that will include actual and potential fire hazards, causes of workplace fires and the procedure for work area inspections and hazard elimination or control.

Supervisor

The Supervisor will:

- Take prompt corrective actions whenever unsafe fire conditions or acts are identified.
- Inspect entire work area to ensure flammables are stored correctly and adequate fire protection is provided in all areas.

Employees

Employees will:

- Comply with all site fire prevention rules including, but not limited to, proper flammable storage.
- Know the emergency telephone number to call in case of a fire emergency.
- Report all fires immediately by way of telephone or radio and notify other nearby workers.
- Be trained to recognize potential fire hazards and the location and operation of the fire extinguisher that is located on the jobsite.
- Maintain a fire-safe work area.

C. FIRE EMERGENCY NOTIFICATION PROCEDURES

Employees will be trained in the established emergency notification procedures.

Emergency telephone numbers will be posted within each jobsite trailer that is equipped with a telephone as well as other jobsite locations such as the material laydown areas, vehicles and mobile equipment refueling areas, personnel change trailers and work areas.

All employees will immediately report all fires by calling the project's emergency phone number.

Employees will report a fire emergency on a site radio when no telephone is located nearby.

D. PORTABLE FIRE EXTINGUISHERS

Portable Fire Extinguishers rated for the potential hazard will be installed, maintained and inspected in accordance with 29 CFR 1926 Subpart F.

Portable fire extinguishers will be installed on company trucks and mobile equipment.

All portable fire extinguishers will have an attached monthly inspection tag that indicates the fire extinguisher is ready to use and fully charged.

When a portable fire extinguisher has been discharged or found to be defective it is tagged and immediately removed from service and replaced with a fully charged extinguisher of the same type and size.

All employees that may be required to use a fire extinguisher will be trained to use the extinguisher on the type that is used on the jobsite.

E. TEMPORARY HEATING DEVICES

Only temporary heating devices approved by the Safety Director will be used on the jobsite. These will be operated by electricity, propane gas, LPG or steam.

The use of kerosene, wood or oil-fired salamanders is not permitted inside temporary buildings.

Stoves and heaters will be properly vented and all vent pipes must have tight joints and be well supported.

Each heating device will have the following information permanently affixed to the unit:

- Clearances
- Ventilation
- Fuel type and input pressure
- Lighting, extinguishing and relighting instructions
- Electrical power supply characteristics.

Requirements in ANSI A10.10 “Safety Requirements for Temporary and Portable Space Heating Devices and Equipment Used in the Construction Industry” will be used.

F. TRANSPORTATION AND STORAGE OF FLAMMABLE LIQUIDS

Flammable liquids will be transported only in containers approved by a national testing laboratory. These containers will be clearly labeled to identify the contents.

Flammable liquids will be transported on the jobsite in FM approved or UL listed metal safety cans with self-closing openings.

Drums, pails or other containers that contain or have contained a flammable liquid will be kept closed except when contents are removed or transferred.

OSHA Standard 1926.152(b) that covers indoor storage of flammable and combustible liquids will be fully complied with.

Temporary/portable storage tanks of 1,000 gallon maximum size will be placed at least 75 feet from buildings, construction equipment, parking lots, etc. to minimize exposure to fire involving the tank.

Storage tanks will be placed in a lined dike to contain spills equal to the storage capacity of the tank.

Containers from which flammable liquids are dispensed are to be electrically grounded and will be equipped with bonding wires to complete the grounding with the vessel receiving the liquid.

Smoking or open flames will not be permitted in flammable liquid storage areas. Signs prohibiting smoking must be posted.

G. TRAINING

Employee training will include, but is not limited to, the following:

- The ability to identify the causes of workplace fires
- The procedures for workplace inspections to eliminate or control fire hazards
- Identify and describe the three classes of fires and the fire extinguishers that should be selected to fight each class.
- Describe actions that should be taken when responding to a fire victim.
- Demonstrate competence in the use a portable fire extinguisher and fight a fire.

H. RESOURCES AND REFERENCES

To effectively execute the policy and procedures identified in this section of our safety manual the following documents may be used. The documents will be filed with our company records (personnel files, OSHA Recordkeeping, etc.) as noted in the table. Copies of documents that do not include sensitive personnel information will be provided to the host employer/general contractor/construction manager upon request.

TITLE	PURPOSE	MAINTENANCE	SOURCE
Fire Prevention Control Checklist	Used to identify and control potential fire hazards at the jobsite	Filed with jobsite inspection records	NECA eSafetyLine www.esafetyline.com/neca/manual
Portable Fire Extinguisher Inspection Checklist	Used to inspect portable fire extinguishers and ensure their readiness	Filed with jobsite inspection records	NECA eSafetyLine www.esafetyline.com/neca/manual http://www.cdc.gov/niosh/docs/2004-101/chklists/r1n16f~1.htm
Training Attendance Rosters	Documents used to identify training completed and employees present	Filed with company personnel records	NECA eSafetyLine www.esafetyline.com/neca/manual

11. FORKLIFT SAFETY PROGRAM

A. PURPOSE AND SCOPE

Material handling is a significantly safety concern. During the movement of products and materials, there are numerous opportunities for injury and property damage if proper procedures and caution are not used. This program applies to all PITs, including forklifts, tractors, platforms lift trucks, motorized hand trucks, and other specialized industrial trucks powered by electrical motors or internal combustion engines. The information contained in this program, and OSHA 29 CFR1910.178 must be the basis for PIT operator training.

B. RESPONSIBILITIES

Safety Director

The Safety Director will:

- Provide a copy of the Plan to employees free of charge and within 15 days of the request
- Must implement and administer a forklift safety program
- Review the forklift safety program annually and make recommendations for revisions if necessary
- Verify that all employees who operate or work near forklifts are properly trained
- Review and revise this program as necessary
- Upon request, evaluate workstations & employee work practices
- Upon request, help supervisors train employees

Supervisors

Supervisors will:

- Supervisors are to see that their employees follow safe operating procedures specified below
- Report all incidents to the Safety Director as soon as possible or before the end of the work shift.
- Use appropriate Personal Protective Equipment (PPE) when operating the equipment.

Employees

All employees will:

- Individuals who operate forklifts must follow the safe operating procedures specified below. This includes, but is not limited to, use of the appropriate PPE.

C. GENERAL

SAFE OPERATION PROCEDURES

- Only authorized and trained personnel will operate forklifts
- Operators must perform inspections in accordance with Inspection section of this program
- Any safety defects (such as hydraulic fluid leaks; defective brakes, steering, lights, or horn; must be reported for immediate repair or the forklift must be taking out of service

- Operators must follow the proper recharging/refueling safety procedure
- Loads will be tilted back and carried no more than 6 inches from the ground. Loads that restrict the operator's vision will be transported backwards.
- forklift operators must wear hard hats in the areas where overhead hazards exist
- Operators must sound the horn and use extreme caution when meeting pedestrians, making turns, and cornering
- Passengers may not ride on any portion of a forklift
- If forklifts are used to elevate person then an appropriate man lift platform (cage with standard rails and toe-boards) that is attached to the mast must be used
- Travel-ways must be maintained free from obstructions, aisles must be marked and wide enough (six-foot minimum) for vehicle operation
- Lift capacity must be marked on all forklifts. Operators must assure the load does not exceed rated weight limits
- Operators must report all accidents, regardless of fault and severity, to the supervisor
- Rail cars and trailers must be parked squarely to the loading area and have wheels chocked in place. Operators must follow established docking/undocking procedures
- All modifications must be approved by the manufacturer, and new rated load capacities determined and posted on the truck. Written approval is required

Operations

- If at any time a forklift is found to be in need of repair, defective, or in any way unsafe, the truck must be taken out of service until it has been repaired
- Trucks must not be driven up to any one standing in front of a fixed object, and avoided if at all possible under all other conditions
- Persons are not allowed to stand or pass under any elevated portion of a truck
- Unauthorized personnel may not ride on forklifts. Passengers are not allowed to ride on an industrial truck, unless the truck has an extra seat that allows the passenger to buckle-up while riding
- Arms or legs may not be placed between the uprights of the mast or outside the running lines of the truck
- When a forklift is left unattended (the operator leaves the seat), load engaging means must be fully lowered, controls neutralized, power shut off, and brakes set. Wheels must be blocked if the truck is parked on an incline
- A safe distance must be maintained from the edge of ramps or platforms while on any elevated dock, platform, or freight car. Forklifts must not be used for opening of closing freight doors
- Maintain sufficient headroom under overhead installations, lights, pipes, sprinkler systems, etc.
- An overhead guard must 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.
- A load backrest extension must be used whenever necessary to minimize the possibility of the load or part of it from falling rearward

Loading

- When possible, handle stable or safely arranged loads that are centered – always use caution when handling loads. Adjust the long or high (including multiple-tiered) loads that may affect capacity
- Only handle loads within the rated capacity of the forklift
- Forklifts equipped with attachments must be operated as partially loaded when not handling a load
- A load engaging means must be placed under the load as far as possible. The mast must be carefully tilted backward to stabilize the load
- Use extreme care when tilting the load forward or backward, particularly when high tiering. Tilting forward with load engaging means elevated is prohibited except to pick up a load. An elevated load may not be tilted forward except when the load is in a deposit position. When stacking or tiering, use only enough backward tilt to stabilize the load

Trucks and Railroad Cars

- Check the flooring of trucks, trailers, and railroad cars for breaks and weakness before driving onto them
- The brakes of highway trucks must be set and wheels chocks placed under the rear wheels to prevent the trucks from rolling while they are boarded with forklifts
- Wheel stops or other recognized positive protection must be provided to prevent railroad cars from moving during loading and unloading operations
- Fixed jacks are necessary, and must be deployed, to support a semi-trailer and prevent unending during loading or unloading when the trailer is not coupled to a tractor
- Positive protection must be provided to prevent railroad cars from being moved while dock boards or bridge plates are in position

Maintenance

- Any forklift not in safe operating condition must be removed from service and authorized personnel must make all repairs.
- Those repairs to the fuel and ignition systems of industrial trucks that involve fire hazards must be conducted only in locations designated for such repairs
- Forklifts in need of repairs to the electrical system must have the battery disconnected before such repairs
- Only use replacement parts that are currently recommended by the manufacturer
- Industrial trucks must be examined before being placed in service, and must not be placed in service if the examination shows any conditions adversely affecting the safety of the vehicle. Such service, if the examination shows any condition adversely affecting the safety of the vehicle, must be made at least daily. Where industrial trucks are used on a round-the-clock basis, they must be examined before each shift. Any defects must be immediately reported and corrected.
- When the temperature of any part of any truck is found to be in excess of its normal operating temperature, thus creating a hazardous condition, the vehicle must be removed from service and not returned to service until the cause for such overheating has been eliminated
- Industrial trucks must be kept in a clean condition, free of lint, excess oil, and grease. Noncombustible agents must be used for cleaning trucks. Low flash points (below 100 degrees F) solvents must not be used. High flash point (at or above 100 degrees F) solvents may be used.

D. INSPECTIONS

A pre-use inspection of every industrial truck is required prior to each days use. Such inspections identify potential hazards that may be encountered from a damaged forklift. If at any time a forklift is found to be in need of repair, defective, of in any way unsafe, it must be removed from service until it has been restored to safe operating condition. Use at least all of the applicable pre-use inspections criteria items found in Appendix A for each inspection.

E. TRAINING

An experienced operator, selected by the Department, must conduct practical/operational training for their forklift operators. All operational training must be conducted under close supervision. All training and evaluation must be completed before an operator is permitted to use a powered forklift without continual and close supervision.

Trainees may operate a forklift only:

- Under the direct supervision of persons, selected by the Supervisor, who have the knowledge, training, and experience to train operators and evaluate their competence; and
- Where such operation does not endanger the trainee or other employees

Training consists of a combination of formal instruction, practical/operational training (demonstrations performed by the trainer and practical exercises performed by the trainee), and evaluation of the operator's performance in the workplace.

Training Content

As specific in the OSHA standard, forklift operators must receive operational training in the following truck-related and workplace topics:

Forklift-related topics:

- Operating instructions, warning, and precautions for the type of forklift the operator will be authorized to operate;
- Differences between forklifts and automobiles;
    - Forklift controls and instrumentation
    - Engine or motor operation
    - Steering and maneuvering
    - Visibility (including restrictions due to loading
    - Fork and attachment adaptation, operation, and use limitation
    - Vehicle capacity
    - Vehicle stability
    - Vehicle inspection and maintenance that the operator will be required to perform
    - Refueling and/or charging and recharging of batteries
    - Operating limitation
    - Operating instructions, warnings, or precautions listed in the operators manual for the types of vehicle that the employee is being trained to operate

Workplace-related topics:

- Surface conditions where the vehicle will be operated
- Composition of loads t be carried and the load stability
- Load manipulation, stacking, and unstacking
- Pedestrian traffic in areas where the vehicle will be operated
- Narrow aisles and other restricted places where the vehicle will be operated
- Hazardous (classified) locations where the vehicle will be operated
- Ramps and other sloped surfaces that would affect the vehicles' stability
- Closed environments and other areas where insufficient ventilation or poor vehicle maintenance could cause a buildup of carbon dioxide or diesel exhaust
- Other unique or potentially hazardous environmental conditions in the workplace that could affect safe operation.

Refresher Training and Evaluation

Refresher training, including an evaluation of the effectiveness of that training, must be conducted to ensure that the operator has the knowledge and skills needed to operate the forklift safely.

Refresher training in relevant topics must be provided to the operator in the following situations:

- The operator has been observed operating the vehicle in an unsafe manner
- The operator has been involved in an accident or near-miss incident
- The operator has received an evaluation that reveals that the operator is not operating the forklift safely
- The operator is assigned to drive a different type of forklift
- A condition in the workplace changes in a manner that could affect the safe operation of the forklift
- Once every three years, and evaluation will be conducted of each forklift operator's performance

Training Records

All training records must be maintained by the department and be readily available for review upon request. All training records must include the minimum:

- Subject of Training
- Date of Training
- Name of individual trained
- Name of Company and Trainer

G. INSPECTIONS

Inspections

Inspections are a critical step in the prevention of forklift incidents or injuries. All identified issues observed during any inspection must be immediately corrected. In addition, the forklift must be immediately removed from service until the necessary corrective actions have been conducted. The Supervisor or Manager of employees using the forklift is responsible for ensuring that all required inspections are conducted and properly documented.

PRE-USE INSPECTION CHECKLIST

Item	Pass	Fail	Corrective Action
1. Inspect the mast for broken or cracked weld points and any other obvious damage	☐	☐	
2. Ensure roller tracks are greased and that chains are free to travel.	☐	☐	
3. Forks must be equally spaced and free from cracks along the blade and at the heels.	☐	☐	
4. Check hydraulic fluid levels.	☐	☐	
5. Check each hydraulic line and fitting for excessive wear or crimping.	☐	☐	
6. Check lift and tilt cylinders for damage of leaking fluid.	☐	☐	
7. Inspect mounting hardware on the cylinders.	☐	☐	
8. Check tires for excessive wear, splitting or missing tire material.	☐	☐	
9. Check pneumatic tires for proper pressure indicated on the tires.	☐	☐	
10. When applicable, inspect batteries for: Note: thick nitrile gloves, splash goggles, and long sleeve must be worn when working with batteries			
I. Cracks or holes.	☐	☐	
	☐	☐	

II. Securely sealed cells.			
III. Frayed cables.	☐	☐	

H. GENERAL

- Any lift not in safe operating condition must be removed from service
- Repairs to the fuel and ignition systems of the lifts that involve fire hazards, must be conducted only in locations designated for such repairs
- The battery must be disconnected for any repair involving the electrical system
- All parts used in the repair and maintenance of the lift must be recommended by the manufacturer
- Fuel tanks must not be filled while the engine is running
- Spillage of oil or fuel must be carefully cleaned up and the fuel tank replaced before restarting the engine
- Proper Personal Protective Equipment (PPE) must be used when conducting any required maintenance

Battery Changing & Charging

- Must be conducted in an intrinsically safe environment with adequate ventilation
- Facilities must be provided for
    - Flushing and neutralizing spilled electrolyte
    - Fire Protection (example-10-lbs ABC fire extinguisher within 20 feet)
    - Protection of Charging apparatus
    - Emergency Eyewash must be accessible in any area where electrolyte is added to the batteries
- Precautions must be taken to prevent open flames, sparks, or electric arcs in battery charging areas
- Proper PPE (protective clothing including face shields, long sleeves, boots, aprons and gloves) must be provided and worn

Safe Work Practices

- Ensure that personnel who operate or utilize lifts are authorized and trained in the safe use and operation of the lift
- All personnel must read and understand this guide as well as any manufactures manual
- Review previous inspections, especially the previous pre-start inspections, for any previously identified issues, comments or notes prior to operating the lift
- All required inspections must be conducted and documented

- Never override hydraulic, mechanical or electrical safety devices

Weather & Wind Conditions

Wind and weather conditions can have an adverse impact on the safe use of aerial lifts when used outdoors. Wind and weather conditions must be evaluated each day prior to the use of the lift. In addition, the continual evaluation of the weather and wind must be conducted throughout the entire use of the lift.

Operation of aerial lifts outdoors is prohibited when wind speeds reach 28 mph, when there is a wind warning in effect of 28 mph or more, when lightening is visible, or when thunder storm warnings are in effect.

Working Surfaces

All personnel must always stand firmly on the floor of the basket and must not sit or climb on the edge of the basket. Personnel must never attempt to climb outside of the basket or over extend the upper body beyond the railing of the basket.

Personnel may only perform work in areas which can be reached from inside the basket of the lifting device. Lifts may not be used in combination with other devices such as ladders, planks or scaffolding.

Load Limits

Load limits for the boom and basket must not be exceeded. Load limits for the boom and basket must be posted in a visible location on the lift. Boom and basket load limits must be specified by the manufacturer or by any other equivalent entity, such as a nationally recognized laboratory.

Vehicle Positioning

Prior to executing a lift, the vehicle in which the lift is mounted needs to be positioned in such a way as to allow the boom and basket a full range of motion inside the work area. With some types of lifts, once the vehicle is in the desired position, special stabilizing tools such as “outriggers” and “wheel Chocks” need to be installed in order to safely operate the lift. Other type of lifts allow vehicle movement while the boom is extended and do not require stabilizing equipment. Unless the vehicle is designed to do so an aerial lift must never be moved when the boom is elevated.

Markings & Decals

In addition to any other markings or decals that are placed on the lift by the manufacturer, the following information must be displayed on all lift s in a clearly visible, accessible area and in a durable manner:

- Make, Model, serial number and manufactures name and address
- The rated workload, including rated number of occupants
- Maximum platform height

Brakes

Brakes provide protection against accidental movement. Prior to operating the lift, the operator must ensure that the brakes are set.

Tip-Overs

Tip-overs can occur when lifts are operated on soft or uneven ground, if the load limit is exceeded or the lift is struck by another vehicle.

- Do not exceed the manufactures rated load capacity limits
- Avoid unnecessary travel with lift in the elevated position.
- Establish a work area perimeter
- Do not drive near leading edges or holes
- Do not raise the platform on a slope or drive onto a slop when elevated.
- Do not drive on uneven or soft surfaces when elevated
- Conduct workplace inspections
- Do not use the platform in windy conditions

Pedestrian Traffic

Personnel must be constantly aware of their surroundings. All lift operators are responsible for the safety of the people in the vicinity of the lifting equipment. In the event that lift work needs to be conducted in the vicinity of people, operators must take special precautions to ensure that the work area is isolated from pedestrian traffic.

Signs, Caution Tape and Barriers

The lift boom and basket must never be positioned above pedestrians and other workers. If a lift is going to be used in an area near pedestrian traffic; operators are required to isolate the work area by establishing a perimeter and safely diverting the pedestrian traffic.

I. RESOURCES AND REFERENCES

To effectively execute the policy and procedures identified in this section of our safety manual the following documents may be used. The documents will be filed with our company records (personnel files, OSHA Recordkeeping, etc.) as noted in the table. Copies of documents that do not include sensitive personnel information will be provided to host employer/general contractor/construction manager upon request.

TITLE	PURPOSE	MAINTENANCE	SOURCE
Training Attendance Rosters	Documents used to identify training completed and employees present	Filed with company personnel records	NECA eSafetyLine www.esafetyline.com/neca/manual

12. HAZARD COMMUNICATION

A. PURPOSE AND SCOPE

The goal of this program is to ensure that all employees receive adequate information relevant to the possible hazards that may be involved with the various hazardous substances used in the company's operations and processes.

The following program outlines how this objective will be accomplished. This policy covers all potential workplace exposures involving hazardous substances as defined by federal (29 CFR 1910.1200/ 1926.59), state and local regulations.

B. RESPONSIBILITIES

Safety Director

The Safety Director will:

- Monitor this Hazard Communication program. Questions regarding this program and any information associated with it should be directed to the Safety Director.

Employees

All employees will:

- Follow all safety procedures described in this program, consult MSDSs as needed for additional safety precautions, and report all labeling issues with chemicals used at the jobsite. All questions should be referred to the Safety Director or Supervisor.

C. HAZARD DETERMINATION

This company does not intend to evaluate any of the hazardous substances purchased from suppliers and/or manufacturers, but have chosen to rely upon the evaluation performed by the suppliers or by the manufacturers of the substances to satisfy the requirements for hazard determination.

D. CONTAINER LABELING

No container or hazardous substances will be released for use unless the container is correctly labeled and the label is legible in English.

All chemicals in bags, drums, barrels, bottles, boxes, cans, cylinders, reaction vessels, storage tanks, or the like will be checked by the receiving department to ensure the manufacturer's label is intact, legible in English, and has not been damaged in any manner during shipment. Any containers found to have damaged labels will be quarantined until a new label has been installed.

The label must contain the chemical name of the contents, the appropriate hazard warnings, and the name and address of the manufacturer, and any other required information.

All secondary containers shall be labeled. The information must include details of all chemicals that are in the referenced container.

E. MATERIAL SAFETY DATA SHEETS (MSDS)

A master MSDS file is maintained at the company's headquarters. A job specific MSDS file is maintained at each work area or jobsite. These Material Safety Data Sheets are available to all employees, at all times.

The Safety Director or a designee will be responsible for reviewing all incoming MSDSs for new and significant health and safety information. The company will ensure that any new information is passed on to the employees involved.

The Safety Director or designee will review all incoming MSDSs for completeness. If any MSDS is missing or obviously incomplete, a new MSDS will be requested from the manufacturer or distributor. OSHA is to be notified if the manufacturer or distributor will not supply the MSDS or if it is not received within 30 days from request. Any new information will be passed on to the employees involved.

New materials will not be introduced into the work area until a MSDS has been received.

The purchasing department will make it an ongoing part of its function to obtain MSDSs for all new materials when they are first ordered.

The Safety Director or designee shall coordinate with other employers on the job site to make sure all MSDSs are obtained, distributed and communicated.

F. LIST OF HAZARDOUS SUBSTANCES

A chemical inventory is compiled, periodically reviewed and updated as necessary. This list is based on materials defined in applicable federal and state standards.

The inventory is maintained on the job site with the MSDSs.

G. EMPLOYEE INFORMATION AND TRAINING

A copy of the program will be given to all employees during the orientation meeting. Subsequent to this, the program will be available from supervisors or the company office.

All employees must participate in an orientation meeting for information and training on the following items prior to starting work with hazardous substances:

- An overview of the requirements of the Hazard Communication Standard, including their rights under this regulation.
- Information on where hazardous substances are present in their work areas.
- Information regarding the use of hazardous substances in their specific work areas.
- The location and availability of the written Hazard Communication Program.
- The physical and health aspects of all substances in use.
- Methods and observation techniques used to determine the presence or release of hazardous substances in the work area.
- The controls, work practices and personal protective equipment available for protection against possible exposure.
- Emergency and first-aid procedures to follow if employees are exposed to hazardous substances.
- How to read labels and material safety data sheets (MSDSs) to obtain the appropriate hazard information.
- Refresher training will be conducted annually.

When new substances are introduced into the jobsite or workplace the Safety Director will review the above items with affected employees as related to the new materials.

The Safety Director will relay all the above information to new employees who will be working with hazardous substances, prior to their starting work.

H. NON-ROUTINE TASKS

Infrequently, employees may be required to perform non-routine tasks that involve the use of hazardous substances. Prior to starting work on such projects, each involved employee will be given information by his or her supervisor about hazards to which they may be exposed during such an activity.

This information will include:

- The specific hazards caused by the substance
- Protective and safety measures that must be utilized
- The measures the company has taken to lessen the hazards, including special ventilation, respirators, and the presence of another employee, air sample readings, and emergency procedures.

I. RESOURCES AND REFERENCES

To effectively execute this policy and procedures identified in this section of our safety manual the following documents may be used. The documents will be filed with company records as noted in the table. Copies of documents that do not include sensitive personnel information will be provided to the host employer/general contractor/ construction manager upon request.

TITLE	PURPOSE	MAINTENANCE	SOURCE
MSDS Request Letter	Used to request an MSDS from a manufacturer or distributor	Filed with MSDSs	NECA eSafetyLine www.esafetyline.com/neca/manual http://ehs.uky.edu/ohs/request.html
Chemical Inventory List	Used to perform a physical inventory of all chemicals housed and used at a jobsite.	Filed at jobsite	NECA eSafetyLine www.esafetyline.com/neca/manual EPA Emergency Management epa.gov/emergencies/docs/chem/t1-form.pdf
Labeling Requirements Checklist	Conducted as needed to address labeling issues	Filed at jobsite with other periodic review files	NECA eSafetyLine www.esafetyline.com/neca/manual
MSDS Checklist	Used to collect data for MSDSs database	Filed with MSDSs	NECA eSafetyLine www.esafetyline.com/neca/manual
Training Attendance Rosters	Documents used to identify training completed and employees present	Filed with company personnel records	NECA eSafetyLine www.esafetyline.com/neca/manual

Electric SUPPLY CO.
ELECTRICAL CONTRACTORS

JOB STARTUP HAZARD ANALYSIS

JOB LEADER ______________________ DATE ______________ COMPANY ______________________

NAME OF COMPETENT PERSON (documentation required) ______________ JOB LOCATION ______________

CLOSEST MEDICAL FACILITY ______________________ EMERGENCY PHONE # ______________

TASKS	POTENTIAL HAZARDS	PREVENTATIVE MEASURES
LIST TASKS REQUIRED TO COMPLETE WORK PLANNED	LIST HAZARDS ASSOCIATED WITH EACH TASK	LIST PREVENTATIVE MEASURES THAT WILL BE TAKEN TO PREVENT INJURIES
If additional space is required use additional form or continue on back of this page.		

Safety and Health issues discussed during today's Job Hazard Analysis ______________________

CREW MEMBER ATTENDANCE ROSTER			
Print Name	Sign Name	Print Name	Sign Name

Job Leader Signature ______________________

Electric SUPPLY CO.
ELECTRICAL CONTRACTORS

JOB STARTUP HAZARD ANALYSIS

JOB LEADER Dusty Sutherland DATE 6-1-17 COMPANY Electric Supply Co.
NAME OF COMPETENT PERSON (documentation required) Dusty Sutherland JOB LOCATION Sanford Foundation House
CLOSEST MEDICAL FACILITY Occ Med - 900E 54th Street, Sioux Falls, SD EMERGENCY PHONE # 911

TASKS LIST TASKS REQUIRED TO COMPLETE WORK PLANNED	POTENTIAL HAZARDS LIST HAZARDS ASSOCIATED WITH EACH TASK	PREVENTATIVE MEASURES LIST PREVENTATIVE MEASURES THAT WILL BE TAKEN TO PREVENT INJURIES
Temporary Power		
	electric shock	proper PPE
Scaffolding	falling	personal fall arrest
	improper anchoring	guardrail
Trenching	underground cave-in	proper sloping/benching the sides
		placing a shield between excavation and
		work area
Overhead Work	fall hazards	proper ladder usage/Fall protection
	risk of shock	physical barriers to prevent contact
Heavy Equipment	crushed by equipment	provide spotters for equipment
	rollovers	set limited zone for equipment usage
If additional space is required use additional form or continue on back of this page.		

Safety and Health issues discussed during today's Job Hazard Analysis _____

CREW MEMBER ATTENDANCE ROSTER			
Print Name	Sign Name	Print Name	Sign Name

Job Leader Signature _____

Electric SUPPLY CO.
ELECTRICAL CONTRACTORS

DAILY JOB HAZARD ANALYSIS

JOB LEADER _____ DATE _____ COMPANY _____

NAME OF COMPETENT PERSON (documentation required) _____ JOB LOCATION _____

CLOSEST MEDICAL FACILITY _____ EMERGENCY PHONE # _____

POTENTIAL HAZARDS INCURRED _____

TASKS	POTENTIAL HAZARDS	PREVENTATIVE MEASURES
LIST TASKS REQUIRED TO COMPLETE WORK PLANNED	LIST HAZARDS ASSOCIATED WITH EACH TASK	LIST PREVENTATIVE MEASURES THAT WILL BE TAKEN TO PREVENT INJURIES
If additional space is required use additional form or continue on back of this page.		

Safety and Health issues discussed during today's Job Hazard Analysis _____

Review/List Safety Issues encountered during previous day's work _____

NEAR MISS INFORMATION

Please list and explain any Near Miss Incidents that have occurred. This information will educate and protect your fellow employees.

CREW MEMBER ATTENDANCE ROSTER

Print Name	Sign Name	Print Name	Sign Name

JOB LEADER SIGNATURE _____

Electric SUPPLY CO.

ELECTRICAL CONTRACTORS

WEEKLY JOB HAZARD ANALYSIS

JOB LEADER ______________________ DATE ______________ COMPANY ______________________

NAME OF COMPETENT PERSON (documentation required) ______________ JOB LOCATION ______________

CLOSEST MEDICAL FACILITY ______________________ EMERGENCY PHONE # ______________

TASKS	POTENTIAL HAZARDS	PREVENTATIVE MEASURES
LIST TASKS REQUIRED TO COMPLETE WORK PLANNED	LIST HAZARDS ASSOCIATED WITH EACH TASK	LIST PREVENTATIVE MEASURES THAT WILL BE TAKEN TO PREVENT INJURIES
If additional space is required use additional form or continue on back of this page.		

Safety and Health issues discussed during today's Job Hazard Analysis ______________________

____

____

CREW MEMBER ATTENDANCE ROSTER			
Print Name	Sign Name	Print Name	Sign Name

Job Leader Signature ______________________________

Electric SUPPLY CO.
ELECTRICAL CONTRACTORS

Temporary Panel GFI Tests

Panel	Results	Action Taken

Test performed by: _____ ***Date:*** _____

OSHA/Silica Standard Compliance

Silica, or crystalline silica, is one of the most abundant minerals on the earth, primarily found in the form of quartz. Most commonly it is found on worksites in concrete, bricks, and materials made from quartz-based rocks or sand.

Hazards of silica:

- Silica is hazardous when inhaled and can cause an incurable and potentially fatal lung disease known as silicosis.
- It can also cause lung cancer.
- Although silica can cause immediate health effects, such as shortness of breath and coughing, most health effects are seen 10 – 15 years after the initial exposure.
- It is important to note that silica is not hazardous as a solid material; it is most hazardous when it is being cut, sanded, or manipulated in a way that creates airborne dust.

OSHA (Occupational Safety and Health Administration) **requires employers to limit worker exposures to respirable crystalline silica and to take other steps to protect workers.**

In this ruling, OSHA has established Permissible Exposure Limits and Action Levels (the level of exposure which triggers required protection methods). The newly established OSHA PEL and Action Level compliance schedule for Construction Industry went into effect Sept. 23, 2017. For complete details; https://www.osha.gov/silica/SilicaConstructionRegText.pdf

To help maintain a safe and healthy workplace, Electric Supply has conducted a series of tests with an independent outside lab to provide to our employees the exposure statistics for our different working environments.

Electric Supply Testing and Compliance

As part of its own compliance plan, Electric Supply has had exposure monitoring conducted by a lab. The results of this initial testing, intended to cover all jobs, are as follows:

Our work place testing came back with **all results below the OSHA Action Level** – a concentration of Respirable Crystalline Silica of 25ug/m3 based on an 8-hour Time Weighted Average (TWA). The result does *not* require engineering control measures like additional ventilation or dust mask to comply with OSHA Silica Standard. Additionally, our exposure monitoring displayed results below the action level so a written exposure control plan need not be developed.

We will continue to monitor for changes in production, process, control equipment, personnel or work practices that may reasonably be expected to result in new or additional exposures at or above the action level. Changes to our work environment could trigger an exposure assessment to determine if the job changes have increased exposure to respirable crystalline silica at or above the action level.

Job duties

The current job duties of cutting or drilling of concrete, brick, or stone are in frequent enough to not adversely effect silica levels for our employees. However, we will teach our employees to be mindful of other contractors working in the immediate area that may not be properly controlling silica dust. Our greatest exposure presently is other

contractors not utilizing adequate controls. Should this arise. Remove yourself from the area and bring it to the General Contractors attention so that they can act to reduce exposure on the jobsite.

Effective engineering controls that can be used in the field by contractors involve mechanical processes to eliminate exposure to silica dust may include:

- Wet methods:
  Apply water to cutting, grinding, drilling, and cleaning operations.
  Install a water hose to wet down dust at the point of generation.
  Use control nozzles that allow gentle spray.
  Use fogging and steam to reduce airborne particles.
  Wet sweeping

If wet control methods are not feasible:

- Ventilation:
  If possible, enclose processes by using a ventilated glove box operation.
  Install local exhaust ventilation and assure that the dust is being pulled away from the workspace.

- Dust reduction:
  Modify abrasive operations to produce a coarser dust that settles more readily and is less likely to reach the lungs if inhaled.
  Install dust collection systems onto machines or equipment that generate dust.
  Use high efficiency particulate air (HEPA) vacuum cleaners.
  Avoid dry sweeping or blowing with compressed air.

Work practices

Employees must be trained on the hazards associated with silica and do the following when working around silica dust. Wash hands and face after tasks and at the end of the workday. Do not eat, drink, or smoke in an area where there may be silica dust.

If the hazard cannot be reduced with local exhaust ventilation or similar methods of control, Electric Supply has voluntary use dust masks. These may be useful in the event that you have to drill into concrete overhead. We also have vacuum systems that can mount to hammer drills. These units vacuum the dust from the source of the hole being drilled, not allowing the dust to become respirable.

Hazard Communication

Silica must be included in the hazard communication program. This includes properly labeling and having a Safety Data Sheet (SDS).

Training

Employee training on silica exposure will be conducted as part of the Hazard Communication Standard on an annual basis.

SGS GALSON

6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.galsonlabs.com

LABORATORY ANALYSIS REPORT

Client : Howalt+McDowell/MMA
Site : Electric Supply
Project No. : Electric Supply
Date Sampled : 01-MAY-18
Date Received : 04-MAY-18

Account No.: 32584
Login No. : L442018

Date Analyzed : 07-MAY-18
Report ID : 1063321

Respirable Dust

Sample ID	Lab ID	Air Vol liter	Total mg	Conc mg/m3
AUSTIN KAHLER P258	L442018-1	1283.584	0.11	0.086
JEREMY NICHOLS P1475	L442018-2	1312.207	0.076	0.058
BRYCE LIEN P1041	L442018-3	1257.45	0.10	0.081
RON CARLON P1354	L442018-4	1316.304	0.11	0.084

COMMENTS: Please see attached lab footnote report for any applicable footnotes.

Level of quantitation: 0.050 mg
Analytical Method : mod. NIOSH 0600; Gravimetric
OSHA PEL : PNOR 5 mg/m3 (TWA)
Collection Media : PVC PW 37mm

Submitted by: KPB
Approved by : SAP
Date : 07-MAY-18
Supervisor: KRK

NYS DOH # : 11626
QC by: CRD

< -Less Than
> -Greater Than
mg -Milligrams
ug -Micrograms
m3 -Cubic Meters
l -Liters
kg -Kilograms
NS -Not Specified
NA -Not Applicable
ppm -Parts per Million
ND -Not Detected

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LABORATORY ANALYSIS REPORT

Client : Howalt+McDowell/MMA
Site : Electric Supply
Project No. : Electric Supply
Date Sampled : 01-MAY-18
Date Received : 04-MAY-18

Account No.: 32584
Login No. : L442018

Date Analyzed : 07-MAY-18 - 10-MAY-18
Report ID : 1064523

Respirable Crystalline Silica (RCS): Quartz, Cristobalite, Tridymite

Sample ID	Lab ID	Analyte	Air Vol l	ug	ug/m3
AUSTIN KAHLER P258	L442018-1	Quartz	1283.584	<5.0	<3.9
		Cristobalite	1283.584	<5.0	<3.9
		Tridymite	1283.584	<20	<16
		RCS	1283.584	<5.0	<3.9
JEREMY NICHOLS P1475	L442018-2	Quartz	1312.207	5.1	3.9
		Cristobalite	1312.207	<5.0	<3.8
		Tridymite	1312.207	<20	<15
		RCS	1312.207	5.1	3.9
BRYCE LIEN P1041	L442018-3	Quartz	1257.45	12	9.5
		Cristobalite	1257.45	<5.0	<4.0
		Tridymite	1257.45	<20	<16
		RCS	1257.45	12	9.5

COMMENTS: Please see attached lab footnote report for any applicable footnotes.

Level of quantitation: Q:5.0ug C:5.0ug T:20.ug
Analytical Method : mod. NIOSH 7500/mod. OSHA ID-142; XRD
OSHA PEL : 50 ug/m3 RCS
Collection Media : PVC PW 37mm

Submitted: AMD/APG
Approved: KRK
Date : 11-MAY-18 NYS DOH # : 11626
Supervisor: KRK QC by: CRD

< -Less Than
> -Greater Than
NA -Not Applicable
mg -Milligrams
ug -Micrograms
ND -Not Detected
kg -Kilograms
m3 -Cubic Meters
l -Liters
ppm -Parts per Million
NS -Not Specified
mppcf -Million Particles per Cubic Foot

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Respirable Crystalline Silica (RCS): Quartz, Cristobalite, Tridymite

Sample ID	Lab ID	Analyte	Air Vol l	ug	ug/m3
RON CARLON P1354	L442018-4	Quartz	1316.304	<5.0	<3.8
		Cristobalite	1316.304	<5.0	<3.8
		Tridymite	1316.304	<20	<15
		RCS	1316.304	<5.0	<3.8

COMMENTS: Please see attached lab footnote report for any applicable footnotes.

Level of quantitation: Q:5.0ug C:5.0ug T:20.ug
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OSHA PEL : 50 ug/m3 RCS
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Submitted: AMD/APG
Approved: KRK
Date : 11-MAY-18 NYS DOH # : 11626
Supervisor: KRK QC by: CRD

< -Less Than
> -Greater Than
NA -Not Applicable
mg -Milligrams
ug -Micrograms
ND -Not Detected
kg -Kilograms
m3 -Cubic Meters
l -Liters
ppm -Parts per Million
NS -Not Specified
mppcf -Million Particles per Cubic Foot

Electric Supply Silica Testing Narratives

Electric supply
May 1, 2018.
Austin Kahler was fitted for respirable silica testing. Austin is part of the remodel in Sanford's MB3 first floor, anticoagulation, and healing. On the day of my inspection the following processes were taking place in the area were Austin was working. Next, there was an instance of the plumbers briefly using a hammer drill. Another sub was tearing up carpet on the test day. The environment quite clean for any other visual detail check video. Austin is just getting started here this week. His principal focus has been taking out some conduit and re-the relocating switches and other electrical items.

Electric supply
May 1, 2018
Ron Carlon was fitted for respirable silica testing. He was working at Minnehaha Country Club Sioux Falls in a remodel job. I took video of the work location. In the course of work Ron did some hand digging for trenching in some lines I had cut some ceiling tile and was on the second floor doing some work. Also attending to his foreman responsibilities at the plan table.

Electric supply
May 1, 2018
Bryce Lien was fitted for respirable silica testing at the City Admin Building. A concrete subcontractor was doing some grinding on concrete work 15 feet from Bryce. This occurred when Bryce was digging outdoors on the East side of the building. Bryce was laying out lights inside during the morning hours.

Electric supply
May 1, 2018
Jeremy Nichols was fitted for respirable silica testing at Chip Carlson's residence. He was primarily working around the elevator install people. He may have been exposed to some airborne sawdust on the day of the testing due to trim workers doing sanding. He was getting pipe labeled and pushing PVC pipes. The plumbers, framers and elevator subs were present on the day of the testing.

U.S. SILICA COMPANY
SAFETY DATA SHEET

1. IDENTIFICATION

Product identifier: Silica Sand or Ground Silica; crystalline silica (quartz)

Product Name/Trade Names:
Sand and Ground Silica Sand (sold under various names: ASTM TESTING SANDS • GLASS SAND • FILPRO® · FLINT SILICA • DM-SERIES • F-SERIES • FOUNDRY SANDS • FJ-SERIES H-SERIES • L-SERIES • N-SERIES • NJ SERIES • OK-SERIES • P-SERIES • T-SERIES • hydraulic fracturing sand, all sizes • frac sand, all sizes • MIN-U-SIL® Fine Ground Silica • MYSTIC WHITE® • #1 DRY • #1 SPECIAL • PENN SAND® • PRO WHITE® · SILURIAN® · Q-ROK® • SIL-CO-SIL® Ground Silica • MICROSIL® • SUPERSIL® • MASON SAND • GS SERIES • PERSPEC • proppant, all sizes • SHALE FRAC® - SERIES • KOSSE WHITE® • OTTAWA WHITE® • OPTIJUMP® • LIGHTHOUSE ™

Chemical Name or Synonym:
Crystalline Silica (Quartz), Sand, Silica Sand, Flint, Ground Silica, Fine Ground Silica, Silica Flour.

Recommended use of the chemical and restrictions on use: (non-exhaustive list): brick, ceramics, foundry castings, glass, grout, hydraulic fracturing sand, frac sand, proppant, mortar, paint and coatings, silicate chemistry, silicone rubber, thermoset plastics.

DO NOT USE U.S. SILICA COMPANY SAND OR GROUND SILICA FOR SAND BLASTING

Manufacturer:
U.S. Silica Company
8490 Progress Drive, Suite 300
Frederick, MD 21701
U.S.A.

Phone: 800-243-7500
Emergency Phone: 301-682-0600
Fax: 301-682-0690

2. HAZARD(S) IDENTIFICATION

Classification:

Physical	Health
Not Hazardous	Carcinogen Category 1A Specific Target Organ Toxicity – Repeated Exposure Category 1

DANGER
May cause cancer by inhalation.
Causes damage to lungs through prolonged or repeated exposure by inhalation.
Response:
If exposed or concerned: Get medical advice.
Disposal:
Dispose of contents/containers in accordance with local regulation

Prevention
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Do not breathe dust.
Do not eat, drink or smoke when using this product.
Wear protective gloves and safety glasses or goggles.
In case of inadequate ventilation wear respiratory protection.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Component	CAS No.	Percent
Crystalline Silica (quartz)	14808-60-7	95-99.9

4. FIRST-AID MEASURES

Inhalation: First aid is not generally required. If irritation develops from breathing dust, move the person from the overexposure and seek medical attention if needed.
Skin contact: First aid is not required.
Eye contact: Wash immediately with plenty of water. Do not rub eyes. If irritation persists, seek medical attention.
Ingestion: First aid is not required.
Most important symptoms/effects, acute and delayed: Particulates may cause abrasive eye injury. Inhalation of dust may cause respiratory tract irritation. Symptoms of exposure may include cough, sore throat, nasal congestion, sneezing, wheezing and shortness of breath. Prolonged inhalation of respirable crystalline silica above certain concentrations may cause lung diseases, including silicosis and lung cancer.
Indication of immediate medical attention and special treatment, if necessary: Immediate medical attention is not required.

5. FIRE-FIGHTING MEASURES

Suitable (and unsuitable) extinguishing media: Use extinguishing media appropriate for surrounding fire.

Specific hazards arising from the chemical: Product is not flammable, combustible or explosive.

Special protective equipment and precautions for fire-fighters: None required.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency procedures: Wear appropriate protective clothing and respiratory protection (see Section 8). Avoid generating airborne dust during clean-up.

Environmental precautions: No specific precautions. Report releases to regulatory authorities if required by local, state and federal regulations.

Methods and materials for containment and cleaning up: Avoid dry sweeping. Do not use compressed air to clean spilled sand or ground silica. Use water spraying/flushing or ventilated or HEPA filtered vacuum cleaning system, or wet before sweeping. Dispose of in closed containers.

7. HANDLING AND STORAGE

Precautions for safe handling:
Avoid generating dust. Do not breathe dust. Do not rely on your sight to determine if dust is in the air. Respirable crystalline silica dust may be in the air without a visible dust cloud. Use adequate exhaust

ventilation and dust collection to reduce respirable crystalline silica dust levels to below the permissible exposure limit ("PEL"). Maintain and test ventilation and dust collection equipment. Use all available work practices to control dust exposures, such as water sprays. Practice good housekeeping. Do not permit dust to collect on walls, floors, sills, ledges, machinery, or equipment. Keep airborne dust concentrations below permissible exposure limits.

Where necessary to reduce exposures below the PEL or other applicable limit (if lower than the PEL), wear a respirator approved for silica containing dust when using, handling, storing or disposing of this product or bag. See Section 8, for further information on respirators. Do not alter the respirator. Do not wear a tight-fitting respirator with facial hair such as a beard or mustache that prevents a good face to face piece seal between the respirator and face. Maintain, clean, and fit test respirators in accordance with applicable standards. Wash or vacuum clothing that has become dusty.

Participate in training, exposure monitoring, and health surveillance programs to monitor any potential adverse health effects that may be caused by breathing respirable crystalline silica. The OSHA Hazard Communication Standard, 29 CFR Sections 1910.1200, 1915.1200, 1917.28, 1918.90, 1926.59 and 1928.21, and state and local worker or community "right-to-know" laws and regulations should be strictly followed.

DO NOT USE U.S. SILICA COMPANY SAND OR GROUND SILICA FOR SAND BLASTING

Conditions for safe storage, including any incompatibilities: Use dust collection to trap dust produced during loading and unloading. Keep containers closed and store bags to avoid accidental tearing, breaking, or bursting.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure guidelines:

Component	OSHA PEL	ACGIH TLV	NIOSH REL
Crystalline Silica (quartz)	10 mg/m3 %SiO_2 + 2 TWA (respirable dust) 30 mg/m3 %SiO_2 + 2 TWA (total dust)	0.025 mg/m3 TWA (respirable dust)	0.05 mg/m3 TWA (respirable dust)

If crystalline silica (quartz) is heated to more than 870°C, quartz can change to a form of crystalline silica known as tridymite; if crystalline silica (quartz) is heated to more than 1470°C, quartz can change to a form of crystalline silica known as cristobalite. The OSHA PEL for crystalline silica as tridymite or cristobalite is one-half of the OSHA PEL for crystalline silica (quartz).

Appropriate engineering controls: Use adequate general or local exhaust ventilation to maintain concentrations in the workplace below the applicable exposure limits listed above.

Respiratory protection: If it is not possible to reduce airborne exposure levels to below the OSHA PEL or other applicable limit with ventilation, use the table below to assist you in selecting respirators that will reduce personal exposures to below the OSHA PEL. This table is part of the NIOSH Respirator Selection Logic, 2004, Chapter III, Table 1, "Particulate Respirators". The full document can be found at www.cdc.gov/niosh/npptl/topics/respirators; the user of this MSDS is directed to that site for information concerning respirator selection and use. The assigned protection factor (APF) is the maximum anticipated level

of protection provided by each type of respirator worn in accordance with an adequate respiratory protection program. For example, an APF of 10 means that the respirator should reduce the airborne concentration of a particulate by a factor of 10, so that if the workplace concentration of a particulate was 150 ug/m3, then a respirator with an APF of 10 should reduce the concentration of particulate to 15 ug/m3. In using chemical cartridges, consideration must be given to selection of the correct cartridge for the chemical exposure and the maximum use concentration for the cartridge. In additional a cartridge change-out schedule must be developed based on the concentrations in the workplace.

Assigned protection factor [1]	**Type of Respirator** (Use only NIOSH-certified respirators)
10	Any air-purifying elastomeric half-mask respirator equipped with appropriate type of particulate filter. [2] Appropriate filtering facepiece respirator. [2,3] Any air-purifying full facepiece respirator equipped with appropriate type of particulate filter. [2] Any negative pressure (demand) supplied-air respirator equipped with a half-mask.
25	Any powered air-purifying respirator equipped with a hood or helmet and a high efficiency (HEPA) filter. Any continuous flow supplied-air respirator equipped with a hood or helmet.
50	Any air-purifying full facepiece respirator equipped with N-100, R-100, or P-100 filter(s). Any powered air-purifying respirator equipped with a tight-fitting facepiece (half or full facepiece) and a high-efficiency filter. Any negative pressure (demand) supplied-air respirator equipped with a full facepiece. Any continuous flow supplied-air respirator equipped with a tight-fitting facepiece (half or full facepiece). Any negative pressure (demand) self-contained respirator equipped with a full facepiece.
1,000	pressure-demand supplied-air respirator equipped with a half-mask.

1. The protection offered by a given respirator is contingent upon (1) the respirator user adhering to complete program requirements (such as the ones required by OSHA in 29CFR1910.134), (2) the use of NIOSH-certified respirators in their approved configuration, and (3) individual fit testing to rule out those respirators that cannot achieve a good fit on individual workers.
2. Appropriate means that the filter medium will provide protection against the particulate in question.
3. An APF of 10 can only be achieved if the respirator is qualitatively or quantitatively fit tested on individual workers.

Skin protection: Maintain good industrial hygiene. Protection recommended for workers suffering from dermatitis or sensitive skin.

Eye protection: Safety glasses with side shields or goggles recommended if eye contact is anticipated.

Other: None known.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance (physical state, color, etc.): White or tan sand: granular, crushed or ground to a powder.
Odor: None.

Odor threshold: Not determined	**pH:** 6-8
Melting point/freezing point: 3110°F/1710°C	**Boiling point/range:** 4046°F/2230°C
Flash point: Not applicable	**Evaporation rate:** Not applicable
Flammable limits: LEL: Not applicable	**UEL:** Not applicable
Vapor pressure: Not applicable	**Vapor density:** Not applicable
Relative density: 2.65	**Solubility(ies):** Insoluble in water

Partition coefficient: n-octanol/water: Not applicable	**Auto-ignition temperature:** Not determined
Decomposition temperature: Not determined	**Viscosity:** Not applicable
Flammability (solid, gas): Not applicable	

10. STABILITY AND REACTIVITY

Reactivity: Not reactive under normal conditions of use.
Chemical stability: Stable
Possibility of hazardous reactions: Contact with powerful oxidizing agents, such as fluorine, chlorine trifluoride and oxygen difluoride, may cause fires.
Conditions to avoid: Avoid generation of dust in handling and use.
Incompatible materials: Powerful oxidizers such as fluorine, chlorine trifluoride, and oxygen difluoride and hydrofluoric acid.
Hazardous decomposition products: Silica will dissolve in hydrofluoric acid and produce a corrosive gas, silicon tetrafluoride.

11. TOXICOLOGICAL INFORMATION

Acute effects of exposure:
Inhalation: Inhalation of dust may cause respiratory tract irritation. Symptoms of exposure may include cough, sore throat, nasal congestion, sneezing, wheezing and shortness of breath.
Ingestion: Ingestion in an unlikely route of exposure. If dust is swallowed, it may irritate the mouth and throat.
Skin contact: No adverse effects are expected.
Eye contact: Particulates may cause abrasive injury.

Chronic effects: Prolonged **i**nhalation of respirable crystalline silica may cause lung disease, silicosis, lung cancer and other effects as indicated below.

The method of exposure that can lead to the adverse health effects described below is inhalation.

A. SILICOSIS
Silicosis can exist in several forms, chronic (or ordinary), accelerated, or acute:

Chronic or Ordinary Silicosis is the most common form of silicosis, and can occur after many years (10 to 20 or more) of prolonged repeated inhalation of relatively low levels of airborne respirable crystalline silica dust. It is further defined as either simple or complicated silicosis. Simple silicosis is characterized by lung lesions (shown as radiographic opacities) less than 1 centimeter in diameter, primarily in the upper lung zones. Often, simple silicosis is not associated with symptoms, detectable changes in lung function or disability. Simple silicosis may be progressive and may develop into complicated silicosis or progressive massive fibrosis (PMF). Complicated silicosis or PMF is characterized by lung lesions (shown as radiographic opacities) greater than 1 centimeter in diameter. Complicated silicosis or PMF symptoms, if present, are shortness of breath and cough. Complicated silicosis or PMF may be associated with decreased lung function and may be disabling. Advanced complicated silicosis or PMF may lead to death. Advanced complicated silicosis or PMF can result in heart disease secondary to the lung disease (cor pumonale).

Accelerated Silicosis can occur with prolonged repeated inhalation of high concentrations of respirable crystalline silica over a relatively short period; the lung lesions can appear within five (5) years of initial exposure. Progression can be rapid. Accelerated silicosis is similar to chronic or ordinary silicosis, except

that lung lesions appear earlier and progression is more rapid.

Acute Silicosis can occur after the repeated inhalation of very high concentrations of respirable crystalline silica over a short time period, sometimes as short as a few months. The symptoms of acute silicosis include progressive shortness of breath, fever, cough, weakness and weight loss. Acute silicosis is fatal.

B. CANCER
IARC - The International Agency for Research on Cancer ("IARC") concluded that “crystalline silica in the form of quartz or cristobalite dust is *carcinogenic to humans (Group 1)”*. For further information on the IARC evaluation, see IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, Volume 100C,"A Review of Human Carcinogens: Arsenic, Metals, Fibres and Dusts " (2011).

NTP classifies “Silica, Crystalline (respirable size)” as Known to be a human carcinogen.

C. AUTOIMMUNE DISEASES
Several studies have reported excess cases of several autoimmune disorders -- scleroderma, systemic lupus erythematosus, rheumatoid arthritis -- among silica-exposed workers.

D. TUBERCULOSIS
Individuals with silicosis are at increased risk to develop pulmonary tuberculosis, if exposed to tuberculosis bacteria. Individuals with chronic silicosis have a three-fold higher risk of contracting tuberculosis than similar individuals without silicosis.

E. KIDNEY DISEASE
Several studies have reported excess cases of kidney diseases, including end stage renal disease, among silica-exposed workers. For additional information on the subject, the following may be consulted: "Kidney Disease and Silicosis”, Nephron, Volume 85, pp. 14-19 (2000).

F. NON-MALIGNANT RESPIRATORY DISEASES
The reader is referred to Section 3.5 of the NIOSH Special Hazard Review cited below for information concerning the association between exposure to crystalline silica and chronic bronchitis, emphysema and small airways disease. There are studies that disclose an association between dusts found in various mining occupations and non-malignant respiratory diseases, particularly among smokers. It is unclear whether the observed associations exist only with underlying silicosis, only among smokers, or result from exposure to mineral dusts generally (independent of the presence or absence of crystalline silica, or the level of crystalline silica in the dust).

Sources of information:
The ***NIOSH Hazard Review - Occupational Effects of Occupational Exposure to Respirable Crystalline Silica*** published in April 2002 summarizes and discusses the medical and epidemiological literature on the health risks and diseases associated with occupational exposures to respirable crystalline silica. The *NIOSH Hazard Review* is available from NIOSH - Publications Dissemination, 4676 Columbia Parkway, Cincinnati, OH 45226, or through the NIOSH web site, www.cdc.gov/niosh/topics/silica, then click on the link “NIOSH Hazard Review: Health Effects of Occupational Exposure to Respirable Crystalline Silica”.

For a more recent review of the health effects of respirable crystalline silica, the reader may consult *Fishman’s Pulmonary Diseases and Disorders*, Fourth Edition, Chapter 57. “Coal Workers’ Lung Diseases and Silicosis”.

Finally, the US Occupational Safety and Health Administration (OSHA) published a summary of respirable crystalline silica health effects in connection with OSHA’s Proposed Rule regarding occupational exposure to

respirable crystalline silica. The summary was published in the September 12, 2013 Federal Register, which can be found at www.federalregister.gov/articles/2013/09/12/2013-20997/occupational-exposure-to-respirable-crystalline-silica.

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Numerical measures of toxicity:
Crystalline Silica (quartz): LD50 oral rat >22,500 mg/kg

12. ECOLOGICAL INFORMATION

Ecotoxicity: Crystalline silica (quartz) is not known to be ecotoxic.
Persistence and degradability: Silica is not degradable.
Bioaccumulative potential: Silica is not bioaccumulative.
Mobility in soil: Silica is not mobile in soil.
Other adverse effects: No data available

13. DISPOSAL CONSIDERATIONS

Discard any product, residue, disposable container or liner in full compliance with national regulations.

14. TRANSPORT INFORMATION

UN number: None
UN proper shipping name: Not regulated
Transport hazard classes(es): None
Packing group, if applicable: None
Environmental hazards: None

Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code): Not determined
Special precautions: None known.

15. REGULATORY INFORMATION

UNITED STATES (FEDERAL AND STATE)

TSCA Status: Crystalline silica (quartz) appears on the EPA TSCA inventory under the CAS No. 14808-60-7.

RCRA: This product is not classified as a hazardous waste under the Resource Conservation and Recovery Act, or its regulations, 40 CFR §261 et seq.

CERCLA: Crystalline silica (quartz) is not classified as a hazardous substance under regulations of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), 40 CFR §302.

Emergency Planning and Community Right to Know Act (SARA Title III): This product contains the following chemicals subject to SARA 302 or SARA 313 reporting: None above the de minimus concentrations.

Clean Air Act: Crystalline silica (quartz) mined and processed by U.S. Silica Company is not processed with or does not contain any Class I or Class II ozone depleting substances.

FDA: Silica is included in the list of substances that may be included in coatings used in food contact surfaces, 21 CFR §175.300(b)(3)(xxvi).

California Proposition 65: Crystalline silica (airborne particles of respirable size) is classified as a substance known to the State of California to be a carcinogen.

California Inhalation Reference Exposure Level (REL): California established a chronic non-cancer effect REL of 3 μg for silica (crystalline, respirable). A chronic REL is an airborne level of a substance at or below which no non-cancer health effects are anticipated in individuals indefinitely exposed to the substance at that level.

Massachusetts Toxic Use Reduction Act: Silica, crystalline (respirable size, <10 microns) is "toxic" for purposes of the Massachusetts Toxic Use Reduction Act.

Pennsylvania Worker and Community Right to Know Act: Quartz is a hazardous substance under the Act, but it is not a special hazardous substance or an environmental hazardous substance.

Texas Commission on Environmental Quality: The Texas CEQ has established chronic and acute Reference Values and short term and long term Effects Screening Levels for crystalline silica (quartz). The information can be accessed through www.tceq.texas.gov.

CANADA

Domestic Substances List: U. S. Silica Company products, as naturally occurring substances, are on the Canadian DSL.

WHMIS Classification: D2A

OTHER NATIONAL INVENTORIES

Australian Inventory of Chemical Substances (AICS): All of the components of this product are listed on the AICS inventory or exempt from notification requirements.

China: Silica is listed on the IECSC inventory or exempt from notification requirements.

Japan Ministry of International Trade and Industry (MITI): All of the components of this product are existing chemical substances as defined in the Chemical Substance Control Law Registry Number 1-548.

Korea Existing Chemicals Inventory (KECI) (set up under the Toxic Chemical Control Law): Listed on the ECL with registry number 9212-5667.

New Zealand: Silica is listed on the HSNO inventory or exempt from notification requirements.

Philippines Inventory of Chemicals and Chemical Substances (PICCS): Listed for PICCS.

Taiwan: Silica is listed on the CSNN inventory or exempt from notification requirements.

16. OTHER INFORMATION

Date of preparation/revision: February 10, 2015

Hazardous Material Information System (HMIS):

Health *
Flammability 0
Physical Hazard 0
Protective Equipment E
* For further information on health effects, see Sections 2, 8 and 11 of this MSDS.

National Fire Protection Association (NFPA):

Health 0
Flammability 0
Instability 0

Web Sites with Information about Effects of Crystalline Silica Exposure:

The U. S. Silica Company web site will provide updated links to OSHA and NIOSH web sites addressing crystalline silica issues: www.ussilica.com, click on “Info Center”, then click on “Health & Safety”.

The U.S. National Institute for Occupational Safety and Health (NIOSH) and Occupational Safety and Health Administration (OSHA) maintain sites with information about crystalline silica and its potential health effects. For NIOSH, http://www.cdc.gov/niosh/topics/silica; for OSHA, http://www.osha.gov/dsg/topics/silicacrystalline/index.

The IARC Monograph that includes crystalline silica, Volume 100C, can be accessed in PDF form at the IARC web site, http://monographs.iarc.fr/ENG/Monographs/PDFs/index.php.

U. S. Silica Company Disclaimer

The information and recommendations contained herein are based upon data believed to be up to-date and correct. However, no guarantee or warranty of any kind, express or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects that may be caused by purchase, resale, use or exposure to our silica. Customers and users of silica must comply with all applicable health and safety laws, regulations, and orders. In particular, they are under an obligation to carry out a risk assessment for the particular work places and to take adequate risk management measures in accordance with the national implementation legislation of EU Directives 89/391 and 98/24.

13. HOUSEKEEPING

A. PURPOSE AND SCOPE

The goal of housekeeping is to create and maintain all company site offices and storage trailers, storage areas, fabrication shops and laydown yards and construction work areas in a clean and orderly condition. This will help create a hazard-free work environment. This written program works to create and maintain a safe work environment as required in 29CFR 1926.25.

B. RESPONSIBILITIES

Safety Director

- The Safety Director will develop a plan to maintain good housekeeping at the beginning of the job.
- The Safety Director will ensure this plan is carefully supervised and followed through to the final clean-up.

Supervisor

- The Supervisor will make certain that trash and scrap metal containers are provided and that these containers are emptied as often as needed to maintain an orderly work environment.
- The Supervisor will ensure that garbage and other wastes will be disposed of at frequent and regular intervals.

Employees

- All employees share the responsibility of maintaining a clean jobsite.
- Employees will pick up their own scrap materials, tools, electrical cords, etc. and place them in the proper places as work progresses.

C. ACTION DETAILS

The housekeeping plan will be developed at the beginning of a job and carefully supervised and followed through until the final jobsite clean-up.

Individual containers will be provided for the different types of debris and trash that is generated at the jobsite.

Debris and trash will be removed from the jobsite as often as is necessary to maintain orderliness.

A rush schedule cannot be used by this company or any subcontractor and will not be allowed as an excuse to allow poor housekeeping habits.

Housekeeping is a shared responsibility that can’t be ignored. All employees at a jobsite will pick up after themselves and any trash or debris they generate.

Dirty light fixtures reduce essential light levels. Clean light fixtures can improve lighting efficiency significantly and will be kept in this condition.

Aisles will be wide enough to accommodate people and vehicles comfortably and safely. Aisle space allows for the movement of people, products and materials.

Aisles and stairways will be kept clear. They will not be used for temporary "overflow" or "bottleneck" storage. Adequate lighting will be maintained in stairways and aisles.

Tools require suitable fixtures with marked locations to provide orderly arrangement, both in the tool room and near the work bench. They will be returned promptly after each use to reduce the chance of them being misplaced or lost.

Employees will regularly inspect, clean and repair all tools and take any damaged or worn tools out of service.

A regular collection, grading and sorting of scrap will be conducted.

Scrap containers will be kept near where the waste is produced to encourage orderly waste disposal and make collection easier.

D. RESOURCES AND REFERENCES

To effectively execute the policy and procedures identified in this section of our safety manual the following documents may be used. The documents will be filed with our company records (personnel files, OSHA Recordkeeping, etc.) as noted in the table. Copies of documents that do not include sensitive personnel information will be provided to the host employer/general contractor/construction manager upon request.

TITLE	PURPOSE	MAINTENANCE	SOURCE
Work Area Checklist	Used to identify potential hazards from inadequate housekeeping.	Filed at jobsite	NECA eSafetyLine www.esafetyline.com/neca/manual
Training Attendance Rosters	Documents used to identify training completed and employees present	Filed with company personnel records	NECA eSafetyLine www.esafetyline.com/neca/manual

14. LADDERS AND STAIRWAYS

A. PURPOSE AND SCOPE

The goal of the Ladders and Stairways program is to establish safety rules regarding use, inspection and maintenance of ladders and stairways. This written program works to create and maintain a safe work environment as required in 29 CFR Subpart X.

B. RESPONSIBILITIES

Safety Director
The Safety Director will:

- Ensure training is provided to employees on ladder selection, inspection and maintenance as well as the recognition of hazards associated with ladder use.
- Ensure training is provided to employees on stairway construction, use and maintenance as well as the recognition of hazards associated with stairway use.
- Ensure all ladders used by employees are safe and in good operating condition.

Supervisor
The supervisor will:

- Ensure ladders are used safely and as they are designed to be used.
- Ensure that job-made ladders are constructed and used safely.

Employees
Employees will:

- Inspect ladders prior to using them. If the ladder is defective, it will be tagged and removed from service.
- Receive training on the selection, inspection and maintenance of ladders and the hazards associated with their use.
- Receive training on stairway construction, use and maintenance and the hazards associated with their use.
- Use ladders safely and as they are designed to be used.

C. ACTIONS DETAIL

- Ladders that are found to be in any way defective or damaged are immediately tagged and taken out of service.
- Side rails will extend no less than 36 inches above a landing. If this is not practical, grab rails must be installed.
- Ladders must not be placed in passageways, doorways, driveways or any location where they may be displaced by activities being conducted on any other work, unless protected by barricades or guards.
- Metal ladders must not be used for electrical work or where they may contact electrical conductors.
- Employees must always face the ladder when going up or down and maintain three-point contact.
- Stairways, such as those going into the job trailer, with four or more risers or rising more than 30 inches will be equipped with at least one handrail and one stair rail system along each unprotected side or edge.

- Treads for temporary service will be made of wood or other solid material and will be installed the full width and depth of the stair.

- All parts of stairways will be free of hazardous projections, such as protruding nails.
- Stairway systems and ladders and their use must comply with 29 CFR 1926 Subpart X.

D. TRAINING

Employee training will include, but is not limited to, the following:

- Identification of the hazards associated with ladders and stairs
- Use the equipment safely
- Understand the regulations governing the use of ladders and stairs
- Inspection of ladders and the tagging for those found to be damaged or defective.
- Inspection of stairways for use and maintenance.

E. RESOURCES AND REFERENCES

To effectively execute the policy and procedures identified in this section of our safety manual the following documents may be used. The documents will be filed with our company records (personnel files, OSHA Recordkeeping, etc.) as noted in the table. Copies of documents that do not include sensitive personnel information will be provided to the host employer/general contractor/construction manager upon request.

TITLE	PURPOSE	MAINTENANCE	SOURCE
Stairs and Stairways Checklist	Used to inspect stairs and stairways for potential hazards	Filed at jobsite	NECA eSafetyLine www.esafetyline.com/neca/manual http://nonprofitrisk.org/tools/workplace-safety/public-sector/topics/bm/stairchk-ps.htm
Ladder Checklist	Used to conduct an inspection ladders on the jobsite	Filed at jobsite	NECA eSafetyLine www.esafetyline.com/neca/manual http://www.ncsu.edu/ehs/www99/left/forms/hardcopy/ladders.html
Training Attendance Rosters	Documents used to identify training completed and employees present	Filed with company personnel records	NECA eSafetyLine www.esafetyline.com/neca/manual

15. MACHINE AND TOOL

A. PURPOSE AND SCOPE

The goal of the machine and tool program is to reduce the number of tool related injuries. This can be accomplished by using the correct tool, using that tool correctly and proper tool maintenance. The following program outlines how we will accomplish this objective. This policy covers all potential workplace exposures involving tools and machines as defined by 29 CFR 1926 Subpart I and 29CFR 1910 Subparts O and P.

B. RESPONSIBILITIES

Safety Director

The Safety Director will:

- Will ensure all employees are trained on the proper use of hand and power tools and never assume “everybody knows how”.
- Designate proper storage facilities for all tools in the tool room or on the jobsite.

Supervisor

The Supervisor will:

- Ensure any damaged or defective hand or power tools are immediately removed from service.
- Ensure that tools are returned to the designated storage facilities when not in use.
- Inspect hand and power tools periodically.
- Only allow those employees certified in the use of a Powder Actuated Tool to operate the tool for which they are certified.

Employees

All employees will:

- Use the appropriate PPE when using hand and power tools.
- Only use hand and power tools for their designed purpose.
- Inspect hand and power tools at the beginning of their shift for any defects. If any defects are found, the tool will be tagged and removed from service.
- Use guards on power tools whenever they are in place.
- Use Powder Actuated tools only if certified to use that model of tool.

C. TRAINING

To ensure the safety of all employees, they will be trained in the proper use of hand and power tools. This training will include but not be limited to:

- Training employees to select the correct tool for a job
- Tool inspection and tagging procedures of damaged tools
- Choosing the appropriate PPE.

D. RESOURCES AND REFERENCES

To effectively execute the policy and procedures identified in this section of our safety manual the following documents may be used. The documents will be filed with our company records (personnel files, OSHA Recordkeeping, etc.) as noted in the table. Copies of documents that do not include sensitive personnel information will be provided to the host employer/general contractor/construction manager upon request.

TITLE	PURPOSE	MAINTENANCE	SOURCE
Hand and Power Tool Checklist	Used to inspect hand and power tools for any defects	Filed at jobsite	NECA eSafetyLine www.esafetyline.com/neca/manual
Machine and Tool Safeguard Checklist	Used to inspect tools to be certain safeguards are in place	Filed with company annual review files	NECA eSafetyLine www.esafetyline.com/neca/manual http://www.cdc.gov/niosh/docs/2004-101/chklists/r1n50p~1.htm
Hand and Power Tools Toolbox Talks	Used to train employees on the proper care and use of hand and power tools	Filed with Safety Director	NECA eSafetyLine www.esafetyline.com/neca/manual http://www.lni.wa.gov/Safety/Topics/AtoZ/ToolBoxTalks/default.asp
Training Attendance Rosters	Documents used to identify training completed and employees present	Filed with company personnel records	NECA eSafetyLine www.esafetyline.com/neca/manual

16. MATERIAL HANDLING

A. PURPOSE AND SCOPE

The goal of the Material Handling Program is to reduce the number of material handling injuries and to increase efficiency. This can be accomplished by minimizing material handling by combining or eliminating operations.

This written program works to create and maintain a safe work environment as required by 29CFR 1926 Subparts H, N, and O.

B. RESPONSIBILITIES

Safety Director

The Safety Director will:

- Determine mechanical means for moving materials when possible in order to avoid injuries such as muscle pulls, strains and sprains.
- Have cranes, derricks, hoists, powered industrial trucks and conveyors handle loads too heavy or bulky to handle manually.
- Ensure required inspections are performed and documentation maintained for all cranes and derricks.
- Ensure that cranes and derricks are operated by competent persons.
- Ensure protection is made available from falling hazards.
- Ensure employee training is provided on the selection, inspection, use and maintenance of material handling equipment.
- Ensure that before assigning employees to jobs that require heavy and/ or frequent lifting, they have been cleared as physically able to perform these tasks.

Supervisor

The Supervisor will:

- Plan for the receipt, shipment and/ or storage of materials.
- Ensure materials are kept at a proper distance from hoist-ways, inside floor openings and exterior walls.
- Ensure materials are stacked according to load limits, keeping passageways clear and arranged to prevent sliding, falling or collapse.
- Ensure that when using any manual handling equipment employees will follow all manufacturers' instructions.

Employees

Employees will:

- Be trained in the selection, inspection, use and maintenance of material handling equipment.
- Use mechanical means to move material whenever possible.
- Follow manufacturers' instructions when using manual material handling equipment.
- Be trained to recognize hazards and to protect themselves and prevent accidents.
- Recognize and respond to signs, signals, barricades and other forms of warning found at the jobsite.

C. MATERIAL HANDLING ACTIONS

Handling and Storage

If a load is too large for one employee, two are to be assigned to the task or material handling equipment supplied.

PPE such as gloves, hand leathers or other hand protectors are to be used to prevent hand injuries.

Maximum safe floor loads are to be posted and never exceeded.

Materials are to be kept clear of passageways, properly sorted and prevented from sliding, falling or collapsing.

Nails are to be bent or removed before stacking lumber for disposal.

Metal banding or packaging is not to be removed until the material is ready to be used.

Lumber piles will not exceed 20 feet in height (or 16 feet for manually handled lumber).

Slings

Rigging is to be inspected prior to use on each shift and as needed during a shift.

Defective rigging and slings will be removed from service, tagged and disposed of.

The rigging's load capacity is never to be exceeded.

When selecting a sling, consider the size, type of load and environmental conditions.

Safe Lifting Practices

The weight and balance of the load must be correctly determined before lifting.

Before lifting make certain the sling is properly secured and that the load is not lagged, clamped or bolted to the floor.

The angle of the sling should be kept as close to 90º (vertical) as possible.

Never allow the load to drag along the ground.

Watch a load at all times while it is in motion.

Never allow more than one person to control the lift or to give signals except to warn of hazards.

Once the lift is completed, the sling should be cleaned, inspected for damage and stored in a clean, dry place (hung on walls or racks).

Back Safety When Lifting

To help prevent back injuries that occur from lifting; the proper lift technique involves the following steps:

1. Get close to the object. Place one foot alongside the object in the direction you will be carrying the object. Place the other foot behind the object. Feet should be securely planted with the object between your knees.

2. Bend at the knees to go down to the object.

3. Keep your back straight. If you maintain your pelvis in a level stance this will help to keep your back straight and prevent twisting.

4. Get a secure grip on the object.

5. Contract or tighten your diaphragm and stomach muscles. Hold this during the lift.

6. Lift the object in a steady motion with your legs keeping it close to your body. Try not to jerk when you lift.

D. TRAINING

Employee training will include, but is not limited to, the following:

- Proper lifting techniques to help minimize muscle, back and hernia injuries
- How to recognize hazards and to protect themselves and prevent accidents
- Selection, inspection, use and maintenance of material handling equipment
- How to properly position and stack materials
- Recognition of and response to signs, signals, barricades and other forms of warning found at a jobsite.

E. RESOURCES AND REFERENCES

To effectively execute the policy and procedures identified in this section of our safety manual the following documents may be used. The documents will be filed with our company records (personnel files, OSHA Recordkeeping, etc.) as noted in the table. Copies of documents that do not include sensitive personnel information will be provided to the host employer/general contractor/construction manager upon request.

Title	Purpose	Maintenance	Source
Work Area Checklist	Used to inspect jobsite for potential material hazards	Filed at jobsite	NECA eSafetyLine www.esafetyline.com/neca/manual http://bfa.sdsu.edu/ehs/exhibit1.htm
Crane and Derrick Inspection Checklist	Used to conduct an inspection of cranes and derricks at the jobsite	Filed at jobsite	NECA eSafetyLine www.esafetyline.com/neca/manual http://www.dllr.state.md.us/labor/constcheck/cccranes.htm
Back Safety Checklist	Used to ensure good back health and safety	Filed with company personnel records	NECA eSafetyLine www.esafetyline.com/neca/manual
Training Attendance Rosters	Documents used to identify training completed and employees present	Filed with company personnel records	NECA eSafetyLine www.esafetyline.com/neca/manual

17. MEDICAL/FIRST-AID

A. PURPOSE AND SCOPE

The goal of the Medical/ First Aid program is to develop site-specific medical and first aid procedures that will provide employees with timely and reliable emergency medical care and first aid treatment. This written program works to create and maintain a safe work environment as required in 29 CFR 1926.23 First aid and medical attention and 1926.50 Medical services and first aid, as well as those referenced in 1926.950 regarding first aid.

B. RESPONSIBILITIES

Safety Director

The Safety Director will:

- Formulate and implement the company's site-specific medical and first-aid program.
- Ensure that trained individuals are on site that can provide basic first-aid treatment for non-serious injuries and illnesses and emergency treatment for serious injuries or illnesses until the employee can be placed under the care of Emergency Medical Services.
- Prepare and maintain current and complete company medical and first aid records and logs in compliance with OSHA and State Workers' Compensation Commission.
- Ensure that first aid equipment and supplies are properly maintained.

Supervisor

The Supervisor will:

- Arrange for employees to attend basic and advanced first-aid and CPR training.
- Provide appropriate first-aid equipment and supplies to meet the requirements of the work and the maximum number of employees on the jobsite.
- Assign light-duty work only after receiving the approval of the treating physician.

Employees

Employees will:

- Report an emergency condition (medical, fire, spill etc.) according to the company policy.
- Know the location of on-site first aid treatment facilities.
- Know the location of first-aid kits, stretchers, eye wash stations and showers, fire extinguishers and blankets, chemical spill kits, site evacuation routes and emergency procedures.
- Immediately report work-related personal injuries or illnesses to their supervisor.

C. MEDICAL/ FIRST AID ACTIONS

In addition to receiving basic and advanced first-aid and CPR training, employees will follow company procedures when responding to a jobsite injury. This procedure is in place to help reduce the occurrence of injuries to employees rushing in to assist injured coworkers. By following these steps the injured will be taken care of with no additional injuries.

1. Survey the scene of the accident
   a. Look at the victim, but also the entire scene of the accident
   b. Check for fallen wires, toxic fumes and fire

2. Do a primary survey of the victim
   a. Is the victim in immediate danger? If not leave them where they are. If they must be moved do so as trained in basic first aid.

b. If victim is conscious ask how the injury occurred and the extent of the injuries.
c. If the victim is unconscious, check for breathing and pulse. Administer mouth to mouth resuscitation and/ or CPR if needed.

3. Call Emergency Medical Services
   a. Depending on geographic location, this may be 911 or you may need to dial a local number.
   b. Give a thorough description of the accident scene, the victim's condition and what first-aid is being given.

D. TRAINING

In addition to any basic or advanced first aid and CPR training given to employees, they will also receive training to include, but not limited to:

- Responding to emergency situations of the jobsite
- Correctly transmitting information involving a medical emergency to emergency personnel
- Knowing the correct number to call when accessing emergency personnel; If 911 is available, or there is a local number.

E. RESOURCES AND REFERENCES

To effectively execute the policy and procedures identified in this section of our safety manual the following documents may be used. The documents will be filed with our company records (personnel files, OSHA Recordkeeping, etc.) as noted in the table. Copies of documents that do not include sensitive personnel information will be provided to the host employer/general contractor/construction manager upon request.

TITLE	PURPOSE	MAINTENANCE	SOURCE
First-Aid/CPR Certification Information	Used to identify and keep up to date those employees certified	Filed with company personnel records	American Red Cross National Safety Council – Green Cross America Heart Association
First Aid Supply List	Used to inventory first aid supplies at a jobsite	Filed at jobsite	NECA eSafetyLine www.esafetyline.com/neca/manual
Training Attendance Rosters	Documents used to identify training completed and employees present	Filed with company personnel records	NECA eSafetyLine www.esafetyline.com/neca/manual

18. PERSONAL PROTECTIVE EQUIPMENT

18.0 GENERAL

A. PURPOSE AND SCOPE

The goal of the Personal Protective Equipment (PPE) program is to protect all employees exposed to various workplace hazards. This can be accomplished through pre-planning and careful implementation of all applicable federal, state and local safety and health regulations/standards.

This written program works to create and maintain a safe work environment as required by 29 CFR 1910 Subpart E and 29 CFR 1926 Subpart E.

B. RESPONSIBILITIES

Safety Director

The Safety Director will:

- Strive to eliminate work site hazards (safety, health or environmental) through modifications to work practices and procedures or by working with the host employer to implement engineering revisions.
- Determine what Personal Protective Equipment (PPE) will be used for the hazards that could not be otherwise eliminated.
- Ensure that employees are trained in the use, care, storage, maintenance, and limitations of the PPE to be used at each jobsite.
- Conduct a Jobsite Hazard Assessment to select the appropriate PPE for hazards that are present. This process may rely on information from the host employer on what hazards have been identified, their magnitude and the methods used to control them.

Supervisor

The Supervisor will:

- Ensure that company provided or employee-owned protective equipment is appropriate for the task and is properly cleaned, maintained, and stored.
- Ensure that employees, who are required to use PPE, use it correctly and consistently.
- Ensure that employee-owned protective equipment meets OSHA standards.

Employees

Employees will:

- Be trained in the proper use, cleaning, storage, maintenance, and limitations of any protective equipment that will be used at each jobsite.
- Use the appropriate PPE whenever a jobsite hazard is present.

C. ACTION DETAILS

Electrical PPE
See Electrical Program (Chapter 4) for PPE assessment and equipment related to electrical hazards.

Respiratory PPE
See Respiratory Program (Section 14.1) for PPE assessment and equipment related to respiratory hazards.

Hearing PPE
See Hearing Protection Program (Section 14.2) for PPE assessment and equipment related to noise level hazards.

General
All employees, while on the jobsite, will wear safety helmets/hard hats, safety glasses with side shields, heavy duty work boots and proper work clothing.

Specialized PPE will be provided as needed by the employer for employees. This may include, but is not limited to:

- Head protection
- Hearing protection devices
- Fall protection devices
- Hand protection equipment
- Life-lines and harnesses
- Respirators
- Specialty Footwear,
- Specialty illumination equipment
- Any other specialty equipment or devices required to be safe on the jobsite
    - Rubber insulating gloves and protectors
    - Rubber insulating blankets
    - Rubber insulating line hose
    - Rubber insulating hoods
    - Insulating shields and/or barriers
    - Rubber insulating sleeves, if required
    - Rubber matting for use around an electrical apparatus.

PPE that has been modified in a way that is not supported by the manufacturer or that reduces its effectiveness will be repossessed, repaired or destroyed.

Any PPE that has been previously worn or used will not be reissued to another employee until it has been inspected, repaired, if necessary, according to manufacturers recommendations, cleaned, sterilized and repackaged.

Employee Compliance and Enforcement

The Supervisor will conduct daily field inspections to ensure employees are wearing all necessary PPE.

All PPE will meet or exceed the applicable requirements of NIOSH, OSHA, ANSI and/or any other applicable agency or standard.

Employee Safe Work Practices

Employees will follow these safety rules:

- An appropriate hard hat will be worn when there is danger of impact, falling or flying objects, or electrical shock
- Impact-resistant safety glasses with side shields will be worn when there is danger of materials striking the eye
- Non-vented safety goggles will be worn if working with materials or chemicals that could damage the eyes
- Face shields will be worn, as needed, to protect the face from flying objects
- Proper shoes or boots will be worn to protect against foot injuries
- Protective clothing, appropriate for the task at hand, will be worn, where specified in the job briefing document.

D. TRAINING

Employee training will include, but not be limited to:

- Recognizing hazards on the jobsite that require PPE
- How to determine the appropriate PPE to avoid potential injuries,
- The correct way to inspect, put on, remove, use, care, store, clean, and maintain each piece of PPE, as needed
- The limitations of the PPE employees are required to use.

E. RESOURCES AND REFERENCES

To effectively execute the policy and procedures identified in this section of our safety manual the following documents may be used. The documents will be filed with our company records (personnel files, OSHA Recordkeeping, etc.) as noted in the table. Copies of documents that do not include sensitive personnel information will be provided to the host employer/general contractor/construction manager upon request.

TITLE	PURPOSE	MAINTENANCE	SOURCE
Hazard Assessment Form	Used to determine potential hazards at a jobsite	Filed with jobsite inspection records	NECA eSafetyLine www.esafetyline.com/neca/manual http://www.ncsu.edu/ehs/safetyplan/forms/HAZARDAS.pdf
PPE Checklist	Used to inspect, care and maintain various types of PPE	Filed with jobsite inspection records	NECA eSafetyLine www.esafetyline.com/neca/manual http://www.cdc.gov/niosh/docs/2004-101/chklists/r1n56p~1.htm
Training Attendance Rosters	Documents used to identify training completed and employees present	Filed with company personnel records	NECA eSafetyLine www.esafetyline.com/neca/manual

18.1 RESPIRATORY PROTECTION

A. PURPOSE AND SCOPE

This program is developed to comply with 29 CFR 1910 1926.103 - Respiratory protection to ensure the protection of employees while using respiratory protection. This program is designed for jobsites where respirators are used on a voluntary basis.

Note: A more complete "Respiratory Protection Program" is available on "NECA eSafetyLine" to replace this program.

If a hazard assessment or information from the host employer indicates that respirator use is required, this program is not adequate.

B. RESPONSIBILITES

Program Administrator or Safety Director: _____

Medical Evaluator's Phone Number: _____

Program Administrator or Safety Director

The Program Administrator or Safety Director will:

- Implement, operate a periodic evaluation of the Respiratory Protection program.
- Determine when voluntary use of respirators or filtering face pieces (dust masks) can be used.
- Supply respirators and/or dust masks at the request of employees when respirator use is not required, if the use will not create a hazard.
- Be responsible for determining the potential need for respirators at each work location. The Company will mainly rely on hazard assessment information provided by the Host Employer regarding the potential need for respirators.
- Conduct fit tests before voluntary respirator use is permitted. Retesting will be done annually or if there is a physical change that could affect respirator use.
- Train employees to recognize hazards that require respirator use and the maintenance of respirators.

Supervisor

The Supervisor will:

- Ensure that employees who use respirators voluntarily are medically fit to do so; as determined by a medical evaluation.

Employees

Employees will:

- Use and maintain respirators according to their training.
- Immediately report any medical signs or conditions related to respirator use.
- Be trained on respirator use, care and maintenance.

C. ACTION DETAILS

Voluntary Use of Respirators and/or Filtering Face Pieces (Dust Masks)

Workers may wear respirators to avoid exposures to hazards or to provide an additional level of comfort and protection, even if the amount of hazardous substance does not exceed the limits set by OSHA standards.

When voluntary use of respirators or filtering face pieces (dust masks) is allowed, the employee agrees to the following requirements:

- The employees will read and comply with the following:
  - Read and follow all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirators limitations. **Note:** If a respirator is used improperly or is not kept clean, the respirator itself can become a hazard to you.
  - Choose respirators certified for use to protect against the contaminant of concern. NIOSH, the National Institute for Occupational Safety and Health of the U.S. Department of Health and Human Services, certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will tell you what the respirator is designed for and how much it will protect you.
  - Not wear respirators into atmospheres containing contaminants for which the respirator is not designed to protect against. For example, a respirator designed to filter dust particles will not protect against gases, vapors, or very small solid particles of fumes or smoke.
  - Keep track of the assigned respirator so that you do not mistakenly use someone else's respirator.
- Be medically evaluated prior to respirator use.
- Be responsible for properly cleaning, storing and maintaining their respirators.

Medical Evaluations

Medical evaluations will be given to determine the employee's ability to wear a respirator. This evaluation is confidential and will not be seen by the Company. The evaluation includes a medical questionnaire to be completed by the employee and returned to the Medical Evaluator. The Medical Evaluator will contact the employee if a medical exam is required. Medical exams will be necessary if an employee responds "yes" to Questions 1 through 8 on the questionnaire or:

- The employee reports medical signs or conditions related to respirator use
- At the request of a supervisor, Physician or Licensed Health Care professional (PLHCP) or a respirator program administrator
- When observations or information indicate a need for an evaluation
- When a change in the workplace conditions increase the physiological burden on an employee

Exception: This does not apply to an employee whose only use of respirators involves the **voluntary use of filtering face pieces (dust masks).**

Medical evaluations will be kept on file in personnel records and by the medical evaluator.

Respirator Selection

Respirators will be selected based on Hazard Assessment, that are NIOSH–certified and used in accordance with the conditions of certification. A representative number of respirator models and sizes will be available to ensure that employees will be able to select a comfortable, properly fitted respirator.

Fit Testing

Note: this is an **option** that can be selected by the Company.

All employees wearing a tight fitting face piece respirator must pass a Qualitative or Quantitative fit test.

The fit test will be given after the medical evaluation is completed and before respirator use is permitted. Retesting will be done annually or when there is a change of physical condition that could affect respirator fit.

Respirator Use

No employee will be allowed to wear a tight-fitting face piece respirator with a beard or when any facial hair interferes with the face to face piece seal of the respirator or with the valve function.

Any other PPE must be worn so it doesn't interfere with the face to face piece seal. An employee must perform a user seal check every time a respirator is put on.

Vapor or gas cartridges or filters will be replaced based on the end of service life indicator. If no indicator is provided the employees will change them, as scheduled.

General Maintenance

Respirator maintenance will be done in accordance with manufacturer's recommendations.

Employees will be given time to and will be responsible for the cleaning, disinfecting, inspection and storage of respirators.

Respirators will be inspected before each use and during routine cleaning.

All respirators found to be defective must be brought to the attention of the Supervisor or the Safety Director and will be removed from service and discarded or tagged as defective.

D. TRAINING

Before wearing a respirator in the work place, employees will receive training on the respiratory hazards to which they are exposed, the proper use, care, and maintenance of respirators, and the limitations of the respirators.

Each employee must be able to demonstrate a working knowledge of:

- Respirator function and usefulness
- The effects of improper fit, usage, and maintenance on respirator effectiveness
- Limitations and capabilities of the respirator
- The correct way to inspect, put on, remove, use and check the seals of the respirator
- Proper respirator cleaning, maintenance and storage, as appropriate.

- Retraining will be done at least annually or when:
- There are changes in the workplace or the type of respirator being used

Employee use indicates a lack of knowledge or the proper use.

E. PROGRAM EVALUATION

A checklist will be used to evaluate the effectiveness and implementation of the Respiratory Protection Program.

The program will be modified and additional training added whenever there is an indication there is improper use or lack of knowledge or respiratory protection.

Employees will provide feedback on the program's effectiveness.

F. RECORDKEEPING

The following records will be kept on file, as required:

- Fit tests, if required,
- Respirator training,
- Medical recommendation for respirator use, and
- All other documents that support the written program.
    - Example any air monitoring records and information on hazard assessments provided by host employers.

G. RESOURCES AND REFERENCES

To effectively execute the policy and procedures identified in this section of our safety manual the following documents may be used. The documents will be filed with our company records (personnel files, OSHA Recordkeeping, etc.) as noted in the table. Copies of documents that do not include sensitive personnel information will be provided to the host employer/general contractor/construction manager upon request.

TITLE	PURPOSE	MAINTENANCE	SOURCE
Hazard Assessment Checklist	Used to identify and control potential respiratory hazards at the jobsite	Filed with jobsite inspection records	NECA eSafetyLine www.esafetyline.com/neca/manual
Annual Employee Fit Test Form	Used to track fit tests for employees for respirators	Filed with company personnel records	NECA eSafetyLine www.esafetyline.com/neca/manual
Respirator Medical Evaluation	Used to evaluate employees for fitness for respirator use	Filed with company personnel records	NECA eSafetyLine www.esafetyline.com/neca/manual http://www.ehs.ku.edu/files/forms/osh/kuehsRespiratorMedicalevaluationform1.pdf
Program Evaluation Form	Used to evaluate the effectiveness of Respirator Protection Program	Filed with company personnel records	NECA eSafetyLine www.esafetyline.com/neca/manual
Cartridge Change Schedule	Used to track cartridge changes in company respirators	Filed with company records	NECA eSafetyLine www.esafetyline.com/neca/manual
Respirator Inspection Form	Used to guide employees conducting respirator inspections	Filed with jobsite inspection records	NECA eSafetyLine www.esafetyline.com/neca/manual http://origin.cdc.gov/niosh/docs/2004-101/chklists/r1n57r~1.htm
Training Attendance Rosters	Documents used to identify training completed and employees present	Filed with company personnel records	NECA eSafetyLine www.esafetyline.com/neca/manual

18.2 HEARING CONSERVATION

A. PURPOSE AND SCOPE

This program is developed to comply with 29 CFR 1910.95 and 29 CFR 1926.52 Occupational Noise Exposure to ensure the protection of employees from hearing loss. The extent to which the elements of this program will be implemented depends on the noise levels present. Whenever employee noise exposure equals or exceeds the 8 – hour time-weighted average (TWA) noise level of 85 decibels, A scale – slow response; i.e., the action level, this program will be implemented in its entirety. When noise does not exceed these levels, but hearing protectors are provided for comfort responsibilities and actions will be limited to training, selection and the safe use of the protectors.

B. RESPONSIBILITIES

If necessary, personal monitoring will be conducted by _____.

If necessary, audiometric testing will be provided by _____.

Safety Director

The Safety Director will:

- Conduct noise monitoring as needed, but may rely on noise exposure data from the host employer, and arrange for a proper hazard assessment to determine the proper type of hearing protection to be used.
- Train employees to recognize potential workplace environmental noise hazards.
- Train the employees in the proper selection, use, care, cleaning, storage and limitations of the hearing protection.
- Make a copy of the standard and all records related to the standard available to all employees upon request and as needed.

Supervisor

The Supervisor will:

- Ensure that employees who are exposed to hearing hazards have and use the appropriate hearing protection.
- Ensure that a copy of the standard is posted as needed.

Employees

Employees will:

- Be trained to recognize workplace environmental noise hazards and the appropriate measures to protect themselves including, but not limited to, hearing protection.
- Use hearing protection when conditions warrant its use.

C. ACTION DETAILS

A copy of the standard and all records related to the standard are available to the employees upon request from_____.

The standard has been posted at _____.

The exposure measurements and audiometric tests shall be kept on file at _____.

Monitoring

Personal monitoring will be conducted whenever there is insufficient information from a host employer and noise levels indicate there is a need (i.e. employees have difficulty hearing each other due to noise levels for an extended period of time.)

If monitoring is needed, the provider used for noise monitoring will be given special notice to the mobile nature of employees and the variable noise levels experienced throughout an employee's work day.

All employees exposed to noise levels above 90 decibels (TWA) will be given a copy of the results.

Audiometric Testing Program

If testing is needed, the provider of the audiometric testing program will be given a copy of the OSHA standard to ensure that the testing procedures meet OSHA requirements.

The testing program will include baseline and annual audiograms.

The annual audiogram will be reviewed against the baseline by a competent medical professional.

An audiologist, otolaryngologist, or physician shall review problem audiograms to determine if there is a need for further evaluation.

All noise monitoring, audiometric testing and employee notification will be performed as required by the standard.

Hearing Protectors and Attenuation

Appropriate hearing protectors will be supplied to all affected employees.

Attenuation requirements will be reevaluated when noise exposure changes.

D. TRAINING

Each employee exposed to noise levels of concern will participate in training that includes:

- The effects of elevated noise levels on employees' hearing,
- The types of hearing protection that are appropriate to be used by employees,
- How to properly insert and/or wear the various types of hearing protectors,
- The use, care, cleaning and disinfecting, and limitations of the various types of hearing protectors that are being used, and
- The purpose of audiometric testing.

E. RECORDKEEPING

Where noise measurements or audiometric testing are performed, these measurements will be kept on file. Noise measurement records will be kept for two years. Audiometric tests shall be kept for the duration of the employee's employment.

Records of the noise level test rooms shall be provided by the health center and kept on file with other noise exposure records.

If necessary, these records will be transferred to new owners. All records are available upon request to employees, former employees, representatives designated by the individual employee, and the Assistant Secretary. See the provisions of 29 CFR 1910.1020 – Access to employee exposure and medical records or 1926.33 - Access to employee exposure and medical records.

F. RESOURCES AND REFERENCES

To effectively execute the policy and procedures identified in this section of our safety manual the following documents may be used. The documents will be filed with our company records (personnel files, OSHA Recordkeeping, etc.) as noted in the table. Copies of documents that do not include sensitive personnel information will be provided to the host employer/general contractor / construction manager upon request.

TITLE	PURPOSE	MAINTENANCE	SOURCE
Hearing Conservation Checklist	Used to identify and control potential hearing loss hazards	Filed with jobsite inspection records	NECA eSafetyLine www.esafetyline.com /neca/manual http://risk.az.gov/UserFiles/PDF/checklists/Hearing%20Conservation%20Checklist.pdf
Record of Audiometric Testing	Used to record audiometric testing results	Filed with company personnel records	NECA eSafetyLine www.esafetyline.com /neca/manual
Hazard Assessment Form	Used to assess hearing hazards in the workplace	Filed with jobsite inspection records	NECA eSafetyLine www.esafetyline.com /neca/manual
Occupational Noise Exposure 1910.95	Copy of standard must be posted for General Industry workplaces	Posted at jobsite	www.osha.gov
Training Attendance Rosters	Documents used to identify training completed and employees present	Filed with company personnel records	NECA eSafetyLine www.esafetyline.com /neca/manual

19. SCAFFOLD SAFETY PROGRAM

A. PURPOSE AND SCOPE

Falls are the leading cause of fatalities in the construction industry and represent a major hazard in all industries. This program is in accordance with OSHA's Scaffold Standard 29 CFR 1926 Subpart L which includes platform and suspended scaffolds as well as aerial lifts. It establishes those responsibilities and is a basic component of the company's safety and health program.

B. RESPONSIBILITIES

Safety Director

The Safety Director will:

- Ensure that equipment is provided for safe erection, dismantling, and use of scaffolds, including fall protection systems as needed.
- Ensure scaffolds are erected in accordance with Subpart L of 29 CFR 1926, OSHA Scaffold Standard.
- Make certain that scaffolds which are beyond the scope of the conditions described in 29 CFR 1926 Subpart L will be designed by a registered professional engineer.
- Provide a competent person to perform inspections and ensures compliance with Subpart L, OSHA's Scaffold Standard.

Supervisor

The supervisor will:

- Ensure that damaged or unsafe scaffolds and/or components will be clearly tagged "DO NOT USE" and removed from service.
- Ensure that scaffolds constructed by other trades which employees are instructed to use are inspected and approved by a competent person before employees are allowed to use them.
- Make certain all employees are trained in the safe erection, dismantling, and use of scaffolds.
- Ensure that current operating and safety manuals are placed in each lift to be used by lift operators.

Employees

Employees will:

- Participate in all training programs associated with the erection, dismantling and use of scaffolds.
- Obey the rules for the safe erection, dismantling, and use of scaffolds as identified in Subpart L, OSHA Scaffold Standard.
- Check with the company's competent person each day before using a scaffold to ensure it has been inspected and approved.
- NOT USE scaffolds erected by other trades unless approved by the company's designated competent person.
- Report all hazards immediately to their supervisor.
- Inspect and operate lifts according to the manufacturers' operating and safety manuals
- Receive training in recognizing the hazards associated with the operation and/or working near aerial and scissor lifts.

C. AERIAL LIFTS

Aerial lifts include boom-supported aerial platforms, such as cherry pickers or bucket trucks. The major causes of fatalities are falls, electrocutions, and collapses or tip overs. To avoid these potential fatalities, the following safe work practices will be observed:

- Elevating work platforms will be maintained and operated in accordance with the manufacturer's instructions.
- Hydraulic, mechanical, or electrical safety devices will not be overridden.
- Equipment will not be moved with workers in an elevated platform unless this is permitted by the manufacturer.
- Workers will not be allowed to position themselves between overhead hazards, such as joists and beams, and the rails of the basket. Movement of the lift could crush the worker(s).
- A minimum clearance of at least 10 feet, or 3 meters, away from the nearest overhead lines will be maintained.
- Power lines, wires and other conductors will always be treated as energized, even if they are down or appear to be insulated.
- A body harness or restraining belt with a lanyard attached to the boom or basket to prevent the worker(s) from being ejected or pulled from the basket will be used.
- Brakes will be set and wheel chocks used when on an incline.
- Outriggers will be used, if provided.
- Load limits of the equipment will not be exceeded. The combined weight of the worker, tools, and materials will be considered in all calculations.

D. SCAFFOLDS

When scaffolds are not erected or used properly, fall hazards can occur. To avoid these potential accidents, the following safe work practices will be observed:

- Scaffolds will be sound, rigid and sufficient to carry its own weight plus four times the maximum intended load without settling or displacement. It will be erected on solid footing.
- Unstable objects, such as barrels, boxes, loose bricks or concrete blocks will not be used to support scaffolds or planks.
- Scaffolds will not be erected, moved, dismantled or altered except under the supervision of a competent person.
- Scaffolds will be equipped with guardrails, midrails and toeboards.
- Scaffold accessories, such as braces, brackets, trusses, screw legs or ladders that are damaged or weakened from any cause, will be immediately repaired or replaced.
- Scaffolds platforms will be tightly planked with scaffold plank grade material or equivalent.
- A "competent person" will inspect the scaffolding and, at designated intervals, reinspect it.
- Employees will be instructed about the hazards of using diagonal braces as fall protection.
- Scaffolds can be accessed by using ladders and stairwells.
- Scaffolds will be at least 10 feet from electric power lines at all times.

E. TRAINING

All employees that will perform work while on a scaffold will receive training conducted by a qualified person. The training program will cover, at a minimum, the following elements:

- The ability to recognize the hazards associated with the type of scaffold in use
- Identification of procedures to control or minimize hazards of scaffold use
- Proper use of the scaffold and handling of materials on the scaffold
- Observing the maximum intended load and the load-carrying capacities of the scaffold in use.
- The ability to recognize the hazards associated with the type of aerial lift in use
- Identification of procedures to control or minimize hazards associated with aerial lift use.

F. RESOURCES AND REFERENCES

To effectively execute the policy and procedures identified in this section of our safety manual the following documents may be used. The documents will be filed with our company records (personnel files, OSHA Recordkeeping, etc.) as noted in the table. Copies of documents that do not include sensitive personnel information will be provided to the host employer/general contractor/construction manager upon request.

TITLE	PURPOSE	MAINTENANCE	SOURCE
Scaffold Construction Plan	Used to develop and implement a plan for scaffolding to be erected in the workplace.	Filed with Project plans	NECA eSafetyLine www.esafetyline.com/neca/manual
Scaffold Safety Checklist	Used to perform pre-use safety check of the scaffold	Filed at job site	NECA eSafetyLine www.esafetyline.com/neca/manual http://ehs.okstate.edu/kopykit/scaffold.htm
JLG's Scissor Lifts Checklist	Used to perform pre-use safety check of scissor lifts	Filed at jobsite	NECA eSafetyLine www.esafetyline.com/neca/manual

20. TRENCHING AND EXCAVATIONS

A. PURPOSE AND SCOPE

The goal of the Trenching and Excavation program is to protect all employees exposed to excavation or trenching operations. This can be accomplished through pre-planning and careful implementation of all applicable state and federal safety standards. This written program works to create and maintain a safe work environment as required by 29CFR 1926 Subpart P.

B. RESPONSIBILITIES

Safety Director

The Safety Director will:

- Prepare a safety checklist prior to the start of digging.
- Check the proximity of utilities, buildings and vibration sources.
- Contact the owners of affected utilities prior to digging and arrange for shutdown or relocation of facilities, if necessary.
- Provide daily jobsite excavation permission.
- Check the adequacy and availability of all equipment including PPE, shoring materials, signs, barricades and machinery.
- Ensure employees are trained to recognize hazards associated with a trench or excavation.

Supervisor

The Supervisors will:

- Ensure proper placement of equipment and materials storage.
- Determine the layout of the jobsite.
- Establish a vehicle traffic control plan and ensure installation of traffic zone safeguards.
- Ensure that the trench or excavation is safe for employee occupation.

Employees

Employees will:

- Be trained to recognize conditions that could affect the safety of a trench or excavation.
- Inform a supervisor of any change in conditions of the trench or excavation.
- Immediately vacate any excavation or trenching operation that presents a possible hazard and report this to the supervisor.

C. ACTION DETAILS

A copy of 29 CFR 1926 - Subpart "P" will be made available on the jobsite.

A competent person with a comprehensive knowledge of OSHA's Excavation Standards and the safe practices necessary to ensure employee safety will remain on site while work is being performed in trenches or excavations.

A pre-job site review will be conducted to develop a job plan that ensures a safe, efficient job process and evaluate difficult sloping and shoring problems (i.e. manholes, etc) prior to commencing the work.

All trenches will be properly classified, sloped, or shored in accordance with the appendices of 29 CFR 1926 - Subpart "P", or in accordance with manufactures tabulated data (i.e. Excavations 5 feet (1.52 m) or greater in depth or any depth where a competent person dete4miens that there is a potential for cave-in.

The competent person will consult with a Registered Professional Engineer (RPE) for trenches over 20'.

Inspections of equipment and trench conditions will be performed by the competent person at the start of each shift or as needed by changing conditions.

Sufficient means for exiting excavations 4 feet deep or more shall be provided and are within 25 feet of lateral travel for employees.

Soil conditions will be determined by visual and manual tests to determine stability of soil and surrounding trench conditions.
NOTE: If visual and manual tests are not performed, soils shall be classified as type "C".

Ramps and walkways will be provided for employee use in accordance with OSHA standards.

Employees will not be permitted to work in excavations where water has accumulated or is accumulating unless adequate precautions have been taken. Diversion ditches, dikes, or other means shall be used to prevent surface water from entering an excavation and to provide drainage to the adjacent area.

Tests will be performed for the presence of oxygen and air quality in excavations as needed. The competent persons on site will be qualified in identifying confine/hazardous spaces due to the presence of flammable/combustible gases, toxics, oxygen deficiency and oxygen enriched environments.

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

Employees will not be permitted under loads that are handled by lifting or digging equipment. Employees will not be allowed to work near the excavation above other employees unless the lower level employees are adequately protected.

Records for the protection systems used will be maintained on site.

Appropriate emergency rescue equipment will be available to meet existing or potential conditions.

D. SLOPING

Where sloping is used to protect employees from cave-ins the angle of incline shall be determined using the following; soil type, environmental conditions of exposure, and application of surcharge loads. Where soil type is the predominant factor the following angles will be observed.

Soil or Rock Type	Maximum Allowable Slopes (H:V) For Excavations Less Than 20 Feet Deep
Stable Rock	Vertical (90°)
Type A	¾:1 (53°)
Type B	1:1 (45°)
Type C	1 ½:1 (34°)

E. SOIL CLASSIFICATIONS

The following describes the types of soils our company may work in.

Type A

Cohesive soils with an unconfined, compressive strength of 1.5 ton per square foot (tsf) (144 kPa) or greater.

Examples of cohesive soils are: clay, silty clay, sandy clay, clay loam and, in some cases, silty clay loam and sandy clay loam. Cemented soils such as caliche and hardpan are also considered Type A.

However, no soil is Type A if:

- The soil is fissured
- The soil is subject to vibration from heavy traffic, pile driving, or similar effects
- The soil has been previously disturbed
- The soil is part of a sloped, layered system where the layers dip into the excavation on a slope of four horizontal to one vertical (4H:1V) or greater
- The material is subject to other factors that would require it to be classified as a less stable material.

Type B

Cohesive soil with an unconfined compressive strength greater than 0.5 tsf (48 kPa) but less than 1.5 tsf (144 kPa);

Granular cohesionless soils including: angular gravel (similar to crushed rock), silt, silt loam, sandy loam and, in some cases, silty clay loam and sandy clay loam.

Previously disturbed soils except those which would otherwise be classed as Type C soil.

Soil that meets the unconfined compressive strength or cementation requirements for Type A, but is fissured or subject to vibration; or

Dry rock that is not stable OR material that is part of a sloped, layered system where the layers dip into the excavation on a slope less steep than four horizontal to one vertical (4H: 1V), but only if the material would otherwise be classified as Type B.

Type C

Cohesive soil with an unconfined compressive strength of 0.5 tsf (48 kPa) or less; or

Granular soils including gravel, sand, and loamy sand or submerged soil or soil from which water is freely seeping or submerged rock that is not stable

Material in a sloped, layered system where the layers dip into the excavation or a slope of four horizontal to one vertical (4H: 1V) or steeper.

F. EMERGENCY RESPONSE

In the event an employee becomes entrapped in a cave in, rescuers must proceed with caution. The following procedures shall be followed:

- A protective system must be in place before rescuers are allowed to enter the excavation.
- Call 911 and the Safety Director.
- Request a police escort for rescue equipment (i.e. shoring equipment, etc).
- Only dig by hand or use hand digging tools in the area the victim is believed to be located.

- When rescue equipment arrives on scene, employ a protective system or vacuum the soil around the victim as much as feasibly possible.
- Continually analyze, and implement new tactics that best rescue the victim.
- Allow higher trained emergency response personnel to complete tasks as needed.

G. TRAINING

Employee training will include, but is not limited to, the following:

- Recognition of hazards that could affect the safety of a trench or excavation
- Correct methods of access and egress of a trench or excavation
- The appropriate forms of PPE necessary while working in and around a trench or excavation
- The correct placement of materials and excavation materials to the edge of the trench or excavation
- The correct protective system to be used and its correct installation

H. RESOURCES AND REFERENCES

To effectively execute the policy and procedures identified in this section of our safety manual the following documents may be used. The documents will be filed with our company records (personnel files, OSHA Recordkeeping, etc.) as noted in the table. Copies of documents that do not include sensitive personnel information will be provided to the host employer/general contractor/construction manager upon request.

TITLE	PURPOSE	MAINTENANCE	SOURCE
Pre-Bid Outline	Used to properly prepare bid when trenching or excavating is involved	Filed at jobsite	NECA eSafetyLine www.esafetyline.com/neca/manual
Trenching or Excavation Checklist	Used to conduct an inspection area to be excavated	Filed at jobsite	NECA eSafetyLine www.esafetyline.com/neca/manual http://www.safety.fsu.edu/forms/trenchingchklist.pdf
Training Attendance Rosters	Documents used to identify training completed and employees present	Filed with company personnel records	NECA eSafetyLine www.esafetyline.com/neca/manual
Protective System Selection Flowchart	Used to determine appropriate protective system	Filed at jobsite	NECA eSafetyLine www.esafetyline.com/neca/manual
Sloping Flowchart	Used to determine the appropriate sloping method	Filed at jobsite	NECA eSafetyLine www.esafetyline.com/neca/manual
Shoring Flowchart	Used to determine the appropriate method of shoring	Filed at jobsite	NECA eSafetyLine www.esafetyline.com/neca/manual

21. VEHICLE SAFETY POLICY

A. PURPOSE AND SCOPE

The goal of this program is to ensure that operations involving the use of vehicles are conducted such that accidents which may injure people or cause damage to property and/or the environment will be avoided.

The motor vehicle procedures identified address the requirements as identified in 29 CFR 1926.601 Motor Vehicles and Section 5(a)1, General Duty Clause of the OSH Act of 1970 and the DOT Federal Motor Carrier Safety Regulations Parts 40,325, 355-379, 381-399.

B. RESPONSIBILITIES

Safety Director

The Safety Director will:

- Ensure that all company vehicles are safe, in good working order and inspected according to any federal and/or state regulations
- Ensure that all employees whose job includes operation of a motor vehicle are trained in the recognition of hazards associated with the motor vehicle and safe operation of the motor vehicle.

Employees

Employees:

- Whose job includes operating a motor vehicle, will participate in training to recognize hazards associated with motor vehicle operations.
- Will sign and abide by the Vehicle Safety Policy which includes the mandatory use of a seat belt/safety harness while operating or riding in a motor vehicle.
- Whose job includes operating a motor vehicle, will perform a pre-trip and post-trip inspection of company vehicles.

C. VEHICLE SAFETY ACTIONS

All employees operating company vehicles or operating personal vehicles on company business are subject to the following:

- Authorized to operate only the vehicle assigned to them by their supervisor. Vehicles should be used only for conducting the necessary company business as assigned. Supervisors must approve all tasks requiring the use of company vehicles before they are performed.
- In possession of a valid driver's license and the correct license endorsements needed for the vehicle assigned. The supervisor must be notified when there are changes to license status. No vehicles may be operated without a proper license.
- No one may operate a vehicle unless training has been received in the inspection, operation and maintenance of the vehicle assigned.
- Inspection of assigned vehicles will be done before and after each trip following the established company procedure. A vehicle may never be used that does not pass. Inspection results will be documented on the appropriate form and provided to the supervisor.
- All necessary documentation (driver's license, owner card, insurance card, medical card, log books, manifests, etc. as required.) shall be in the vehicle before it is used.
- Seat belts and shoulder harnesses, if installed, must be worn by drivers and passengers at all times. Vehicle may not be operated unless all are wearing safety belts and shoulder harnesses.
- No one other than the individual assigned to a vehicle may operate it. Nor are any passengers other than those authorized by a supervisor allowed in the vehicle.

- Supervisors will be notified immediately of any legal citations received while operating a vehicle on or off the job.

- All accidents will be reported following established company procedures.
- The Company Substance Abuse policy must be observed at all times. Vehicle will not be used while under the influence of alcohol, illegal drugs or hazardous prescription medication. Employees will not ride with anyone under the influence of alcohol, illegal drugs or hazardous prescription medication.
- All traffic laws will be obeyed and vehicles operated in a safe and courteous manner at all times.
- If personal vehicles are used on company business employees shall ensure that their vehicles meet all standards established for company vehicles.

D. TRAINING

All employees that will use company vehicles will receive training conducted by a qualified person. The training program will cover, at a minimum, the following elements:

- Pre-trip and post-trip inspections on all vehicles they are assigned to operate
- Hazards of driving while impaired
- Use of protective equipment, emergency equipment and vehicle safety systems
- Hazards associated with vehicle operation and the action to take in the event of an emergency
- Checking the weight of vehicles to prevent overloading
- Distributing and securing loads properly
- Special training for drivers who haul hazardous substances
- Establish a plan to monitor the vehicle safety program.

E. RESOURCES AND REFERENCES

To effectively execute the policy and procedures identified in this section of our safety manual the following documents may be used. The documents will be filed with our company records (personnel files, OSHA Recordkeeping, etc.) as noted in the table. Copies of documents that do not include sensitive personnel information will be provided to host employer/general contractor/construction manager upon request.

TITLE	PURPOSE	MAINTENANCE	SOURCE
Vehicle Safety Program Checklist	Used to ensure all aspects of vehicle safety are included in the program	Filed with Project estimates	NECA eSafetyLine www.esafetyline.com /neca/manual
Vehicle Inspection Checklist	Used to perform a pretrip inspection of a vehicle	Filed with vehicle records	NECA eSafetyLine www.esafetyline.com /neca/manual
Safety Belt Policy	Used to notify employees of the employers safety belt policy.	Filed with company personnel records	NECA eSafetyLine www.esafetyline.com /neca/manual

Employee Safety Belt Pledge	Used to encourage employee safety belt use	Filed with company personnel records	NECA eSafetyLine www.esafetyline.com /neca/manual
Consent to Access Records	Used to gain access to employees' driving records	Filed with company personnel records	NECA eSafetyLine www.esafetyline.com /neca/manual
Vehicle Safety Policy	Used to notify employees of the employers safety policy.	Filed with company personnel records	NECA eSafetyLine www.esafetyline.com /neca/manual

22. WELDING AND HOT WORK

A. PURPOSE AND SCOPE

The company has developed this Welding and Hot Work Program to ensure that all employees receive adequate information relevant to the possible hazards that may be involved with welding and hot work. For purposes of this program, "Hot Work" is defined as welding, cutting, soldering, brazing, grinding, and other forms of torch operations that will introduce sparks or open flame to a work area. Potential safety, health, and hazards that can result from the gases and vapors, dusts and fumes, sparks, hot metal, and radiant energy produced during hot work operations.

This Hot Work Program is intended to:

- Preserve the safety and health of company workers performing work near hot work operations
- Ensure the safety of all occupants that may be present during hot work operations
- Limit losses from accidental ignition of materials in the vicinity of hot work operations
- Prevent accidental activation of the premise fire detection system, if present.

The following program outlines how this objective will be accomplished. This policy covers all potential workplace exposures involving hot work as defined by federal (29 CFR 1910.252 – Welding, Cutting, and Brazing and 1926.352 – Fire Prevention), state and local regulations, and NFPA 51B – Fire Prevention in Use of Cutting and Welding Processes.

B. RESPONSIBILITIES

Safety Director

The Safety Director will:

- Monitor this Welding and Hot Work Program.
- Coordinate with the host employer any hot work activities performed by or near Company employees. Hot work performed by others has the potential to affect company employees.
- Review requests submitted by supervisors for hot work and issue a Hot Work Permit where needed.

Supervisors

The Supervisor will:

- Identify jobs where hot work will be performed and ensure a hot work permit is secured for the job.
- Consult with the host employer and review the jobsite for hazards associated with the hot work. Provide the information to the Safety Director.
- Control hazards as directed on the permit provided by the Safety Director.

Employees

All employees will:

- Follow all safety and health procedures described in this program
- Consult Material Safety Data Sheets (MSDSs), as needed, for additional safety and health precautions associated with hazardous materials used in hot work.
- Report all safety and health issues associated with hot work operations at the jobsite. All questions should be referred to the Safety Director or Supervisor.

C. HAZARD DETERMINATION

The company does not intend to evaluate any of the hazardous substances associated with hot work activities, but has chosen to rely upon the evaluation performed by the suppliers or by the manufacturers of the substances to begin to identify specific hazards associated with any particular type of hot work. The company will also rely on any hazard assessment information that can be provided by the Host Employer.

D. HOT WORK PERMIT AREAS

Hot work areas will be inspected before hot work begins and/or during hot work activities. The fire alarm systems or devices **may be disabled** as directed by the Host Employer. Restrictions on duration of any hot work are usually at the discretion of the Host Employer. Most hot work activities are:

- Specific to a hot work activity
- In the designated area
- For the designated time frame.

Where hot work activities are to be performed, the Safety Director or his/her designee will meet with the Host Employer to discuss any additional precautions that may have to be implemented to protect the safety and health of company employees who may be working in the vicinity of the hot work activities. This could include using barrier tape to designate the area(s) where special clothing or personal protective equipment is required to work within the designated area. If it is decided that special precautions are necessary to protect company employees, the affected employees will be notified and given an opportunity to discuss their concerns during the job briefing.

E. TRAINING

All employees working in the vicinity of hot work activities will be informed of the:

- Health and safety hazards of an employee associated with the type of hot work that may occur
- Proper selection of protective clothing and personal protective equipment that may be required to work in the vicinity of hot work activities
- Elements of this Hot Work Guidance Program.

F. RESOURCES AND REFERENCES

To effectively execute this guidance program identified in this section of our safety manual the following documents may be used. The documents will be filed with company records as noted in the table. Copies of documents that do not include sensitive personnel information will be provided to the host employer/general contractor/ construction manager upon request.

TITLE	PURPOSE	MAINTENANCE	SOURCE
Reference Information	OSHA – Regulations: - 1910 Subpart H – Hazardous Materials, See 1910.101 – Compressed gases, general requirements 1910.102 – Acetylene 1910.104 – Oxygen - 1910 Subpart M – Compressed Gas, etc. - 1910 Subpart Q – Welding, Cutting, etc.	If downloaded – Can be kept with the Company safety program records	www.osha.gov - Click on "Regulations" and you will be taken to regulations. - Click on Part 1910 - Click on Regulation you want to see
MSDS – from Company records or Host Employer	Provides Hazardous Materials Information for Hot Work Materials	Filed with MSDSs	NECA eSafetyLine www.esafetyline.com/neca/manual
Welding Hot Work Permit	Provides a an assessment of flammable hazards, ensures they are addressed and authorizes work for a given period	Maintained at jobsite with a copy placed in with company safety records	NECA eSafetyLine www.esafetyline.com/neca/manual
Training Attendance Rosters	Documents used to identify training completed and employees present	Filed with company personnel records	NECA eSafetyLine www.esafetyline.com/neca/manual

HOT WORK PERMIT

Before initiating hot work, can this job be avoided? Is there a safer way?

This Hot Work permit is required for any *temporary* operation involving open flames or producing heat and/or sparks. This includes, but is not limited to: Brazing, Grinding, Soldering, Thawing Pipe, Torch Applied Roofing and Welding.

Instructions:

1. Verify precautions listed below or do not proceed with work.
2. Complete this permit and issue to person(s) performing the work.
3. Retain this copy in the project file.

DATE:	**SHIFT:**	**WORK ORDER #:**
Location of Work:		
Description of Equipment:		
Purpose of Work:		
Name of person(s) doing the work:		
Name of fire watch person:		

I verify the above location has been examined, the precautions checked on the Precautions Checklist below to minimize the chance of fire.		
Supervisor's Name: Signature:		
Duration (hrs):	Start Time:	Stop Time:

HOT WORK PERMITS MAY NOT BE AUTHORIZED FOR MORE THAN ONE SHIFT!

YES	NO	N/A	ITEM
			Are water hoses or fire extinguishers available and in good repair?
			Is hot work equipment in good repair?
			Have flammable liquids, dust, lint and oily deposits within 3.5 ft been removed?
			Have explosive atmosphere been eliminated? Test results:
			Has the work surface area been cleaned of grease, paint, etc.?
			Have combustible floors been wet down, covered with damp sand or covered with fire resistant sheets?
			Have surface areas below work area been protected?
			Have access ways below work area been barricaded?
			Are UV shields in place?
			Has enclosed equipment been cleansed of all combustibles?
			Have all containers been purged of flammable liquids and vapors?
			Will fire watch be provided during and for 60 minutes after work, including coffee and/or lunch breaks?
			Has fire watch been provided with suitable fire extinguishing devices?
			Has the fire watch person been trained in use of fire extinguishing devices and in sounding alarm(s) or other emergency communications?
			Has additional fire watch been assigned to adjoining areas, above and below?
			Hot work area will be monitored for a minimum of 60 minutes and a maximum of 4 hours after completion of work?
			Other:

EMERGENCY INFORMATION	
If a fire occurs, call:	**Nearest Operating Fire Alarm:**

NOTE: ONCE THE WORK IS COMPLETE, FORWARD THIS FORM TO THE SAFETY ADMINISTRATOR FOR REVIEW AND RETENTION

HOT WORK PERMIT

Before initiating hot work, can this job be avoided? Is there a safer way?

This Hot Work permit is required for any *temporary* operation involving open flames or producing heat and/or sparks. This includes, but is not limited to: Brazing, Grinding, Soldering, Thawing Pipe, Torch Applied Roofing and Welding.

Instructions:

1. Verify precautions listed below or do not proceed with work.
2. Complete this permit and issue to person(s) performing the work.
3. Retain this copy in the project file.

DATE: 10-18-17	**SHIFT:** day	**WORK ORDER #:** 400635
Location of Work: Sanford Imagenetics		
Description of Equipment:		
Purpose of Work: Use cutting torch to cut holes in steel decking for conduit sleeves		
Name of person(s) doing the work: Bannon Larson		
Name of fire watch person: Ty Landeen		

I verify the above location has been examined, the precautions checked on the Precautions Checklist below to minimize the chance of fire.		
Supervisor's Name: Bannon Larson	Signature: Bannon Larson	
Duration (hrs): 4	Start Time: 10:00am	Stop Time: 2:00pm

HOT WORK PERMITS MAY NOT BE AUTHORIZED FOR MORE THAN ONE SHIFT!

YES	NO	N/A	ITEM
X			Are water hoses or fire extinguishers available and in good repair?
X			Is hot work equipment in good repair?
X			Have flammable liquids, dust, lint and oily deposits within 3.5 ft been removed?
		X	Have explosive atmosphere been eliminated? Test results:
	X		Has the work surface area been cleaned of grease, paint, etc.?
		X	Have combustible floors been wet down, covered with damp sand or covered with fire resistant sheets?
X			Have surface areas below work area been protected?
X			Have access ways below work area been barricaded?
	X		Are UV shields in place?
		X	Has enclosed equipment been cleansed of all combustibles?
		X	Have all containers been purged of flammable liquids and vapors?
X			Will fire watch be provided during and for 60 minutes after work, including coffee and/or lunch breaks?
X			Has fire watch been provided with suitable fire extinguishing devices?
X			Has the fire watch person been trained in use of fire extinguishing devices and in sounding alarm(s) or other emergency communications?
		X	Has additional fire watch been assigned to adjoining areas, above and below?
X			Hot work area will be monitored for a minimum of 60 minutes and a maximum of 4 hours after completion of work?
			Other:

EMERGENCY INFORMATION	
If a fire occurs, call: 911	**Nearest Operating Fire Alarm:** 2nd Floor

NOTE: ONCE THE WORK IS COMPLETE, FORWARD THIS FORM TO THE SAFETY ADMINISTRATOR FOR REVIEW AND RETENTION