FRONTIER BUILDING

SAFETY & HEALTH MANUAL

1801 SW 3rd Ave • Suite 500 • Miami • FL 33129 • Tel: (305) 692-9992 • Fax: (305) 692-3032

CORPORATE SAFETY AND HEALTH POLICY STATEMENT

The personal safety and health of each employee of Frontier Building Corporation, Inc. is of primary importance. The prevention of occupationally induced injuries and illnesses is of such consequence that it will be given precedence over operating productivity whenever necessary. To the greatest degree possible, management will provide all mechanical and physical facilities required for personal safety and health in keeping with the highest standards.

Frontier Building Corporation will maintain a Safety and Health Program conforming to the best practices of our construction industry. To be successful, such a program must embody the proper attitudes toward injury and illness prevention on the part of both management and employees. It also requires cooperation in all safety and health matters, not only between management and employee, but also between each employee and his fellow workers. Only through such a cooperative effort can a safety record in the best interest of all be established and preserved.

OUR SAFETY AND HEALTH POLICY WILL INCLUDE:

- Providing mechanical and physical safeguards to the maximum extent that is possible.
- Developing and enforcing safety and health rules as per OSHA that all employees cooperate with these rules as a condition of employment.
- Conducting a program of safety and health inspection to find and eliminate unsafe working conditions or practices; to control health hazards and to comply fully with the safety and health rules for every job.
- Training all employees in good safety and health practices.
- Investigating promptly and thoroughly every accident to find out what caused it and to correct the problem to prevent recurrence.

We recognize that the responsibility for safety and health are shared:

Supervisors are responsible for developing the proper attitudes toward safety and health in themselves and in those they supervise and for the safety and health of all personnel involved.
Employees are responsible for wholehearted, genuine cooperation with all the aspects of the safety rules and health program. This includes, but is not limited to compliance with safety rules and regulations set down by Federal, State and Local OSHA Standards and laws while performing their duties.

_____
Andrew Goggin
Operations Manager

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SAFETY MANUAL

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OCCUPATIONAL SAFETY AND HEALTH ACT 1970

In 1970 congress passed the Occupational Safety and Health Act and created OSHA a regulatory arm of the Department of Labor to enforce regulations governing a safe working environment. Following are some basic OSHA record-keeping requirements, postings and procedures on what to do in the event of an OSHA audit. It is important to understand, that if the procedures outlined in your safety manual are more stringent than the federal guidelines, OSHA can cite you for not following your own procedures.

FORM 300 / 300A

This form will be maintained on a day to day basis. The information on this form is self-explanatory and is required by Law for mandatory record keeping.
The best method of keeping current and accurate on this form is to assign it to one person in the Corporate Office and have this person record it on a day to day basis, transferring information from the Worker's Compensation Form as it is completed.

SAFETY POSTER

The OSHA Safety Poster is required by law to be posted at the employee bulletin board at each work location and is to be kept posted as long as the job is in process.
In the event of Spanish speaking personnel who may not speak or understand English, a copy of the poster in Spanish must be posted.

YEARLY SUMMARY POSTING REQUIREMENTS

At the close of the calendar year this summary must be posted for a period of three (3) months. It may be posted on February 1 of the New Year and kept posted until April 30. The summary is simply the OSHA 300A log which has it’s totals transferred from the completed OSHA 300 log. When it is properly signed and completed, it must be posted. It may then be removed from the bulletin board after April 30 and filed for a period not to be less than 5 years.

INSPECTIONS / COMPLAINTS

OSHA investigations and complaint investigations result in written findings, sometimes in fines and citations.
Each of the written citations dictates the posting requirements and the monetary fines, if any.

INSPECTIONS

There are basically four (4) types of OSHA inspections:

1. Causal or walk on inspections.
2. High-risk industry inspections.
3. Inspections resulting from death or multiple injuries.
4. Complaint inspections.

The procedure for meeting with an OSHA Compliance Officer and the manner in which an inspection is conducted is outlined in the following procedure:

OSHA COMPLIANCE INSPECTIONS

This procedure outlines the duties of the job supervisor and the S.H.E. Department for an OSHA inspection.

PRELIMINARY REQUIREMENTS

NOTIFY COMPANY MANAGEMENT IMMEDIATELY OF THE IMPENDING INSPECTION

Determine:

1. Compliance Officer has proper credentials.

2. Type of inspection to be conducted. Get copy of complaint, if applicable.

3. Request:
   Ask the OSHA representative to delay the inspection until a representative of the S.H.E. Department can arrive to coordinate our effort to provide all pertinent information.
   In most cases, the OSHA Compliance Officer will honor this request and wait from a few hours to the next day to conduct the inspection.

GENERAL CONSIDERATIONS

Compliance Officers should be treated courteously and given the information they request. Provide only the information that is requested. If information of confidential nature is requested, inform the inspector that Management approval is required and request an opportunity to obtain that approval. Avoid outright refusal of a request for information.

An OSHA inspection has three parts:

Opening Conference:

During the opening conference OSHA will let you know what type of audit they are performing, a routine walk-on or random audit, an audit as the result of a complaint or an audit due to a catastrophic event or death. They will introduce themselves and outline what they will require from you such as paperwork, documentation of safety meetings, training etc. they may even request interviews with employees

Field Audits (Walk around):

During the field audit(s) make notations as to everything the auditor asks about, looks at, or take pictures of. If possible take pictures of everything the auditor takes pictures of from the same side and angle they do.

Closing Conference:

During the closing conference they will make recommendations to improve your safety performance and discuss any discrepancies they have found. They may tell you of any citations they have written, but they are not required to disclose that information at the closing conference.

REPORTS

A record of each OSHA inspection shall be filed with the S.H.E. Department on the form attached to this guideline. A S.H.E. Department representative will complete this report. The job supervisor will provide all the necessary information that is submitted on the report.

AFTER INSPECTION

An exit meeting will be held to discuss any citations:

1. What are they?
2. When will they be issued?
3. Proposed penalties.
4. Period allowed for abatement.

OSHA INSPECTION REPORT

Initial Inspection Date: _____

Date Report Received: _____

Inspection No: _____

Send copies to: Safety, Health and Environmental Department

All Federal and State OSHA inspections as well as those by NIOSH and MSHA should be reported on this form. It is to be submitted promptly for each inspection, normally within two days of the closing conference.

If the closing conference is delayed, submit an initial report as complete as possible; submit an amended report after the closing conference. In an amended report, only items 1, 2, 3, 4, 6 and items changed from the original report need be completed.

Inspections with no citations may require only one report. More complicated cases involving several citations and contested violations may require a number of updated amended reports.

If more space is required for any answer, attach a separate sheet. Attach copies of pertinent communications including complaints, citations, letters accompanying payment of fines, letters reporting completion of abatement, etc.

OSHA letter follow-up to employee complaint: Use this form to report inquiries from OSHA initiated by an employee complaint and resulting in a letter rather than an inspection. Answer items 1, 2, 3, 4, 5, 6 (date of OSHA letter), 16, 40 (date of response). Attach copy of OSHA letter and response.

1. Date this report submitted: _____
2. Is this an initial report or an amended report ?
3. If an amended report, what date was last report submitted?

   _____
4. Site Name: _____ Area: _____
5. Type of operation:

6. Opening conference date: _____

7. Closing conference date: _____

8. Duration of visit (hours): _____

9. Type of inspection: Safety Health Both____

10. Were visitors from OSHA Federal State NIOSH MSHA_____

11. Name and Title of visitors:

12. OSHA region in which your unit is located - City: Region No.:

13. Reason for the inspection: (Accident, Complaint, follow-up, Programmed (Formerly General Survey), Monitor, Other).

14. If programmed, was site exempted under OSHA Safety Inspection Scheduling System:

15. If complaint, date of complaint. Attach copy of complaint.

16. Was Management aware of this complaint before the inspection? If so when?

17. What was inspected?

18. Did scope of inspection exceed that of complaint or accident?_____

19. What measurements were made (e.g., air sampling for toxic vapors, noise, etc.) and did Company take duplicate samples?

20. Were photographs taken? Did Company unit take or secure duplicate photographs?

21. The names and titles of Company representative(s) who accompanied officer on inspection.

22. Did inspector request to see any of the Company safety and health records, records of occupational hazard measurements (e.g. toxic vapors, dusts, noise, etc.) or medical records (e.g., x-rays, physical function testing, etc.).
    YES NO_____

23. What other materials were asked for and received?

24. Did the officer have discussions with individual employees in the course of his inspections? List employees contacted and subject matter of conversation, if known.

25. Were questions directed to employee representative(s) and Company representative(s) alike in presence of one another?
    YES _____ NO_____

26. Summary of closing conference (attach on separate page).

27. Did inspector imply that citations(s) would be issued?_____

28. What violations were alleged?

29. changes were made?

30. If there was no closing conference and no citations issued, did case close as a result of no action by OSHA after 6 months from time of opening conference?
    YES_____ NO _____

31. List alleged violations and degree of severity (Repeat, Willful, Serious, Other, Deminimus), proposed penalties and abatement periods.

32. Was an informal conference held? If so, who attended?
    Were any of the alleged violations amended at this conference? If so, what?

33. Have any violations or penalties been contested? If so, which ones?

34. Date fine was paid for each individual violation (attach letter).

35. List final status of all violations if different from Items 33 and 35.

36. Do you have any general comments to make in way of a summary?

37. Date total case was officially closed (i.e., all fines paid, abatement accomplished, adjudication complete for all contests, etc.).

Signed: _____

Date: _____

ABRASIVE BLASTING

Applicable OSHA Standards: 29 CFR 1910.94

PURPOSE

To establish procedures outlining the safety requirements for abrasive blasting to protect our employees.

SCOPE

This procedure applies to all employees and subcontractors working within our controlled worksites. This Abrasive Blasting Procedure covers the minimum requirements to perform abrasive blasting.

INTRODUCTION

Abrasive blasting is primarily used for surface preparation of metal surfaces to prepare them to accept a coating or lining. This procedure covers the safety requirements pertaining to mechanical precautions, personal protective equipment, housekeeping and sanitation, administrative dust control methods, and respiratory protection.

PROGRAM

MECHANICAL PRECAUTIONS

- Machines and hoses should be inspected frequently and all parts showing excessive wear should be repaired or replaced.

- Nozzles should be externally attached to the hose by a fitting, which will prevent accidental disengagement.

- Lengths of hose should be joined by external metallic connectors. The connectors shall have pin-clips to prevent dis-engagement. Anti-whip arresters may be used between each connector.

- All Bull Hoses, from the compressor to the abrasive blast pot, shall have pin-clips and anti-whip arresters on each end.

- A remote control "deadman" valve must be provided. Electric deadmen shall be low voltage (12 volt DC) and have continuous wire or plug connections provided.

PERSONAL PROTECTIVE EQUIPMENT

- Operators should be equipped with heavy canvas or leather gloves and aprons. Safety shoes should also be worn.

- Eye, face, hearing and respiratory protection shall be supplied to all personnel working.

- Precautions shall be taken to protect personnel in the blasting zone including the blasting operator from excessive noise exposure by supplying and requiring the use of earplugs or muffs.

- Vortex tubes which cool the air supply to the blasters hood should be considered depending on season and exposure of the employee to heat sources.

HOUSEKEEPING AND SANITATION

- Good housekeeping practices should be followed in abrasive blasting operation to prevent slips, trips, and falls.

- A facility should be available for blasters to wash before eating and after blasting operations.

ADMINISTRATIVE DUST CONTROL METHODS

- Isolation

    1. As most of the blasting as possible should be done in a specified location. A blasting zone (where dust is visible) should be established and marked off with signs around the perimeter of the area such as:

    CAUTION

    Abrasive Blasting Area, Eye and Ear Protection and Respirators Must Be Worn In This Area.

    2. Blasting should not be done when wind direction and velocity carry visible dust to people unprotected by proper respirators.

- Enclosure

    1. Blasting of small objects should be done in an enclosure which is designed to specifically reduce the dust hazards.

RESPIRATORY PROTECTION

- Apron and dust collar, properly fitted and properly worn, shall be used by all persons blasting. In addition to the hood, blasters should also wear a disposable respirator when working in a high dust concentration. This would provide protection when the blasting operation has ceased and the blaster is removing the air supplied equipment or when merely taking a break.

- Abrasive-blasting hoods shall be worn by all abrasive-blasting operators -

    1. At all times,

    2. When working inside of blast-clean rooms,

    3. When using silica sand in manual blasting operations where the nozzle and blast are not physically separated from the operator in an exhaust ventilated enclosure,

- Where concentrations of toxic dust dispersed by the abrasive blasting may exceed the limits set in paragraph 1919.93 OSHA and the nozzle and blast are not physically separated from the operator in an exhaust-ventilated enclosure.

- Particulate filter respirators, commonly referred to as dust-filter respirators, properly fitted, may be used for short, intermittent, or occasional dust exposure such as clean-up, dumping of dust collectors, or unloading shipments of sand at a receiving point, when it is not feasible to control the dust by enclosure, exhaust ventilation, or other means. Respirators used shall be certified for protection against the specific type of dust.

    1. Dust-filter respirators may be used to protect the operator of outside abrasive-blasting operations where non-silica abrasives are used on materials having low toxicities.

    2. Dust-filter respirators shall not be used for continuous protection where silica sand is used as the blasting abrasive, or toxic materials are blasted.

- Maintenance

    1. Respirators should be cleaned daily. This can be accomplished by use of vacuum or water.

    2. Respirators should be kept in maximum operating condition at all times.

3. After their daily cleaning, respirators and hoods should be kept and hung in an upright position to prevent sand spilling inside.

- Air Supply and Air Compressors for Abrasive Blasting Hoods

1. Air supply shall be free of harmful quantities of dust, mists or noxious gases, and shall meet Grade D requirements.

2. The air from the regular compressed air line of a compressor unit may be used for the abrasive-blasting hood if:

a. A trap and carbon filter is installed that will remove oil, water particulate and odor and is regularly maintained. A record of the maintenance of these filters should be kept.

b. A pressure reducing diaphragm or valve is installed to reduce the pressure to requirements of the particular type of abrasive blasting respirator.

c. An automatic control is provided to either sound an alarm or shut down the compressor in case of overheating.

d. Periodic checks should be made to ensure low amounts of carbon monoxide, >10 ppm, are not being emitted to the worker.

CONFINED SPACE ENTRY PROGRAM

Applicable OSHA Standard: 29 CFR 1910.146, 1926.21(b)(6)

PURPOSE

This program contains requirements for practices and procedures to protect employees in The construction / general industry from the hazards of entry into permit-required confined spaces.

SCOPE

This program applies to all employees and subcontractors working within company controlled worksites.

DEFINITIONS

"Attendant" means an individual stationed outside a permit-required confined space who monitors the authorized entrants and who performs all attendant's duties assigned in the employer's permit-required confined space program.

"Authorized entrant" means an employee who is authorized by the company to enter a permit space.

"Confined space" means a space that:

(1) Is large enough and so configured that an employee can bodily enter and perform assigned work; and
(2) Has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry.); and
(3) Is not designed for continuous employee occupancy.
(4) Or has inadequate ventilation.

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

"Entry supervisor" means the person (such as the foreman, or crew chief) responsible for determining if acceptable entry conditions are present at a permit space where entry is planned, for authorizing entry and overseeing entry operations, and for terminating entry as required by this company.

"Isolation" means the process by which a permit space is removed from service and completely protected against the release of energy and material into the space

by such means as: blanking or blinding; misaligning or removing sections of lines, pipes, or ducts; a double block and bleed system; lockout or tagout of all sources of energy; or blocking or disconnecting all mechanical linkages.

GENERAL

The Project Superintendent shall evaluate the workplace to determine if any spaces are permit-required confined spaces. The client may provide a list when working at remote locations (see the Pre Job Checklist).

If the workplace contains permit spaces, the Project Superintendent in conjunction with the Site Safety Supervisor/Representative and the client, shall inform exposed employees, by posting danger signs or by any other equally effective means, of the existence and location of and the danger posed by the permit spaces.

> **NOTE:** A sign reading DANGER -- PERMIT-REQUIRED CONFINED SPACE, DO NOT ENTER or using other similar language would satisfy the requirement for a sign.

If the Project Superintendent decides that company employees will not enter permit spaces, the Project Superintendent in conjunction with the Site Safety Supervisor/Representative, shall take effective measures to prevent its employees from entering the permit spaces.

If the Project Superintendent decides that company employees will enter permit spaces, the Project Superintendent in conjunction with the Site Safety Supervisor/Representative, shall develop and implement a site specific written permit space program that complies with this company and the Client's confined space entry procedures. The written program shall be available for inspection by employees.

SITE SPECIFIC WRITTEN PROGRAM

Before entry into any confined space at any company controlled worksite, A site specific written program must be developed.

The Project Superintendent in conjunction with the Site Safety Supervisor/Representative will develop the site specific written program. The written program must be approved by the Safety Manager-Corporate.

The site specific written program must comply with OSHA 29 CFR 1910.146 and contain the following elements:

- Measures necessary to prevent unauthorized entry;
- Methods used to identify and evaluate the hazards of permit spaces before

employees enter them;

- Specify acceptable entry conditions;
- Methods used in isolating the permit space;
- Purging, inerting, flushing, or ventilating the permit space as necessary to eliminate or control atmospheric hazards;
- Providing pedestrian, vehicle, or other barriers as necessary to protect entrants from external hazards;
- Methods used to verify that conditions in the permit space are acceptable for entry throughout the duration of an authorized entry.
- Identify testing and monitoring equipment needed to comply with this company program.
- Identification of, authorized entrants, attendants and entry supervisors.
- Ventilating equipment needed to obtain acceptable entry conditions;
- Communications equipment necessary.
- Personal protective equipment insofar as feasible engineering and work practice controls do not adequately protect employees;
- Lighting equipment needed to enable employees to see well enough to work safely and to exit the space quickly in an emergency;
- Equipment, such as ladders, needed for safe ingress and egress by authorized entrants;
- Rescue and emergency services provided.
- Training provided to entry supervisors, authorized entrants and attendants.

ENTRY PROCEDURE GUIDELINES

The following guidelines are provided to assist the Project Superintendent and the Site Safety Supervisor/Representative in preparing the site specific written program.

Any conditions making it unsafe to remove an entrance cover shall be eliminated before the cover is removed.

Lock out /Tag out procedures must be followed during a permit-required confined space entry.

All entrants must wear a safety harness with retrieval rope attached to the d-ring on the back of the harness.

> **Note:** More often, it is the responsibility of the client to prepare a confined space for entry. Procedures must be developed to ensure that information concerning the preparation of confined spaces by the client is communicated to company personnel.

When entrance covers are removed, the opening shall be promptly guarded by a railing, temporary cover, or other temporary barrier that will prevent an accidental fall through

the opening and that will protect each employee working in the space from foreign objects entering the space.

Before an employee enters the space, the internal atmosphere shall be tested, with a calibrated direct-reading instrument, for the following conditions in the order given:

{1} Oxygen content,
{2} Flammable gases and vapors, and
{3} Potential toxic air contaminants.

Individuals must not enter a confined space that is immediately hazardous to life or health. Initial testing to determine potential hazards that require entry must have an approved and documented Standard Operating Procedure with a two-level approval one of which must be the Project Superintendent, the other is the Safety Manager-Corporate.

There may be no hazardous atmosphere within the space whenever any employee is inside the space.

An employee may not enter the space until the forced air ventilation has eliminated any hazardous atmosphere. The forced air ventilation shall be so directed as to ventilate the immediate areas where an employee is or will be present within the space and shall continue until all employees have left the space. The air supply for the forced air ventilation shall be from a clean source and may not increase the hazards in the space.

The atmosphere within the space shall be continually tested to ensure that the continuous forced air ventilation is preventing the accumulation of a hazardous atmosphere and providing sufficient oxygen to the worker.

If a hazardous atmosphere is detected during entry, each employee shall leave the space immediately. The space shall be evaluated to determine how the hazardous atmosphere developed and measures shall be implemented to protect employees from the hazardous atmosphere before any subsequent entry takes place.

The entry supervisor shall verify that the space is safe for entry and that the pre-entry measures required by this company program have been taken, through a written certification that contains the date, the location of the space, and the signature of the person providing the certification. The certification shall be made before entry and shall be made available to each employee entering the space. This can be accomplished by means of an entry permit provided by the client.

The Project Superintendent shall designate the persons who are to have active roles (as, for example, authorized entrants, attendants, entry supervisors, or persons who test or monitor the atmosphere in a permit space) in entry operations, identify the duties of each such employee, and provide each such employee with the training required by this company program.

This company shall provide at least one attendant outside the permit space into which entry is authorized for the duration of entry operations.

The Project Superintendent in conjunction with the Site Safety Supervisor/Representative and the client shall develop and implement procedures for summoning rescue and emergency services, for rescuing entrants from permit spaces, for providing necessary emergency services to rescued employees, and for preventing unauthorized personnel from attempting a rescue. Emergency equipment must be inspected prior to any entrance into the confined space.

If an entrant is in need of rescue, the attendant's sole responsibility is to sound the alarm to evacuate any other entrants and summon emergency personnel. Under no circumstance should an attendant enter the confined space himself.

Before entry begins, the entry supervisor identified on the permit shall sign the entry permit to authorize entry.

The completed permit shall be made available at the time of entry to all authorized entrants, by posting it at the entry portal or by any other equally effective means, so that the entrants can confirm that pre-entry preparations have been completed.

All entrants must be signed in and out by the attendant every time they enter or exit the confined space.

The duration of the permit may not exceed the time required to complete the assigned task or job identified on the permit.

The entry supervisor shall terminate entry and cancel the entry permit when:

- The entry operations covered by the entry permit have been completed; or
- A condition that is not allowed under the entry permit arises in or near the permit space.
- Plant emergency system is activated

When the company arranges to have employees of another employer (contractor) perform work that involves permit space entry, the company shall:

- Inform the contractor that the workplace contains permit spaces and that permit space entry is allowed only through compliance with a permit space program meeting the requirements of this company program;
- Apprise the contractor of the elements, including the hazards identified and the company's experience with the space, that makes the space in question a permit space;

- Apprise the contractor of any precautions or procedures that the company has implemented for the protection of employees in or near permit spaces where contractor personnel will be working;
- Coordinate entry operations with the contractor, when both company personnel and contractor personnel will be working in or near permit spaces.
- Debrief the contractor at the conclusion of the entry operations regarding the permit space program followed and regarding any hazards confronted or created in permit spaces during entry operations.

TRAINING REQUIREMENTS

The Project Superintendent shall ensure that training is provided so that all employees whose work is regulated by this company program acquire the understanding, knowledge, and skills necessary for the safe performance of the duties assigned under this section.

Training shall be provided to each affected employee:

- Before the employee is first assigned duties under this company program;
- Before there is a change in assigned duties;
- Whenever there is a change in permit space operations that presents a hazard about which an employee has not previously been trained;
- Whenever the Project Superintendent has reason to believe either that there are deviations from the permit space entry procedures required by this company program or that there are inadequacies in the employee's knowledge or use of these procedures.

The training shall establish employee proficiency in the duties required by this company program and shall introduce new or revised procedures, as necessary, for compliance with this section.

The Project Superintendent shall certify that the training required by this company program has been accomplished. The certification shall contain each employee's name, the signatures or initials of the trainers, and the dates of training. The certification shall be available for inspection by employees.

The training shall include the following:

1. Duties of authorized entrants:

a) Know the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure;
b) Properly use equipment as required by the permit.

c) Communication method used with the attendant as necessary to enable the attendant to monitor entrant status and to enable the attendant to alert entrants of the need to evacuate the space.
d) Alert the attendant whenever the entrant recognizes any warning sign or symptom of exposure to a dangerous situation, or the entrant detects a prohibited condition;
e) Exit from the permit space as quickly as possible whenever an order to evacuate is given by the attendant or the entry supervisor, the entrant recognizes any warning sign or symptom of exposure to a dangerous situation, the entrant detects a prohibited condition, or an evacuation alarm is activated.

2. Duties of attendants:

a) Knows the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure;
b) Is aware of possible behavioral effects of hazard exposure in authorized entrants;
c) Continuously maintains an accurate count of authorized entrants in the permit space and ensures that the means used to identify authorized entrants who is in the permit space is accurate;
d) Remains outside the permit space during entry operations until relieved by another attendant;
e) Communicates with authorized entrants as necessary to monitor entrant status and to alert entrants of the need to evacuate the space.
f) Monitors activities inside and outside the space to determine if it is safe for entrants to remain in the space and orders the authorized entrants to evacuate the permit space immediately under any of the following conditions;
   - If the attendant detects a prohibited condition;
   - If the attendant detects the behavioral effects of hazard exposure in an authorized entrant;
   - If the attendant detects a situation outside the space that could endanger the authorized entrants; or
   - If the attendant cannot effectively and safely perform all the duties required under this company program.
g) Summon rescue and other emergency services as soon as the attendant determines that authorized entrants may need assistance to escape from permit space hazards;
h) Takes the following actions when unauthorized persons approach or enter a permit space while entry is underway:
   - Warn the unauthorized persons that they must stay away from the permit space;
   - Advise the unauthorized persons that they must exit immediately if they have entered the permit space; and
   - Inform the authorized entrants and the entry supervisor if unauthorized persons have entered the permit space;

i) Performs non-entry rescues as specified by the site specific written program rescue procedure; and
j) Performs no duties that might interfere with the attendant's primary duty to monitor and protect the authorized entrants.

3. Duties of entry supervisors:

a) Knows the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure;
b) Verifies, by checking that the appropriate entries have been made on the permit, that all tests specified by the permit have been conducted and that all procedures and equipment specified by the permit are in place before endorsing the permit and allowing entry to begin;
c) Terminates the entry and cancels the permit as required.
d) Verifies that rescue services are available and that the means for summoning them are operable;
e) Removes unauthorized individuals who enter or who attempt to enter the permit space during entry operations; and
f) Determines, whenever responsibility for a permit space entry operation is transferred and at intervals dictated by the hazards and operations performed within the space, that entry operations remain consistent with terms of the entry permit and that acceptable entry conditions are maintained.

WRITTEN PROGRAM REVIEW

The Safety Director will review the permit space program, using the canceled permits retained within 1 year after each entry and revise the program as necessary, to ensure that employees participating in entry operations are protected from permit space hazards.

EXCAVATION AND TRENCHING SAFETY PROGRAM

Applicable OSHA Standards: 29 CFR 1926.650

PURPOSE

The purpose of this policy is to comply with the OSHA standard guidelines for the protection of employees working in and around excavations and trenches.

SCOPE

This program applies to all of our controlled worksites where one of our, or a subcontract employee may be occupationally exposed to excavations and trenches.

Compliance is mandatory to ensure employee protection when working in or around excavations. The programs in this manual on confined space, hazard communication, lockout/tagout, respiratory protection, and any other safety programs or procedures deemed essential for employee protection, are to be used in conjunction with this program.

RESPONSIBILITIES

It is the responsibility of each superintendent and supervisor to implement and maintain the procedures and steps set forth in this program. Each employee involved with excavation and trenching work is responsible to comply with all applicable safety procedures and requirements of this program.

DEFINITIONS

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

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

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

DURATION OF EXPOSURE - The longer an excavation is open, the longer the other factors have to work on causing it to collapse.

EXCAVATION - Any man-made cut, trench, or depression in an earth surface, formed by earth removal.

HAZARDOUS ATMOSPHERE - An atmosphere which by reason of being explosive, flammable, poisonous, corrosive, oxidizing, irritating, oxygen deficient, toxic, or otherwise harmful, may cause death, illness, or injury.

PROTECTIVE SYSTEM - A method of protecting employees from cave-ins, from material that could fall or roll from an excavation, or from the collapse of adjacent structures. Protective systems include support systems, sloping and benching systems, shield systems, and other systems that provide necessary protection.

SHIELD - A structure that is capable of withstanding the forces imposed on it by a cave-in and thereby protects employees within the structure. Shields can be permanent structures or can be designed to be portable and moved along as work progresses. Shields can be premanufactured or job-built in accordance with 1926.652(c)(3) or (c)(4). Shields are also referred to as "trench boxes" or "trench shields."

SLOPING - A method of protecting workers from cave-ins by excavating to form sides of an excavation that are inclined away from the excavation to prevent cave-ins. The angle of incline required to prevent a cave-in varies with differences such as soil type, length of exposure, and application of surcharge loads.

SURCHARGE LOADS - Generated by the weight of anything in proximity to the excavation, push starts for a cave-in (anything up top pushing down). Common surcharge loads:

- weight of spoil pile
- weight of nearby buildings, poles, pavement, or other structural objects.
- weight of material and equipment

TRENCH - A narrow excavation below the surface of the ground, less than 15 feet wide, with a depth no greater than the width.

UNDERMINING - Undermining can be caused by such things as leaking, leaching, caving or over-digging. Undermined walls can be very dangerous.

VIBRATION - A force present on construction sites and must be considered. The vibrations caused by backhoes, dump trucks, compactors and traffic on job sites can be substantial.

GENERAL REQUIREMENTS

Before any work is performed and before any employees enter the excavation, a number of items must be checked and insured:

- Before any excavation, underground installations must be determined. This can be accomplished by either contacting the local utility companies or the local "one-call' center for the area. All underground utility locations must be documented on the proper forms. All overhead hazards (surface encumbrances) that create a hazard to employees must be removed or supported to eliminate the hazard.

- If the excavation is to be over 20 feet deep, it must be designed by a professional engineer who is registered in the state where work will be performed.

- Adequate protective systems will be utilized to protect employees. This can be accomplished through sloping, shoring, or shielding.

- The worksite must be analyzed in order to design adequate protection systems and prevent cave-ins. There must also be an excavation safety plan developed to protect employees.

- Workers must be supplied with and wear any personal protective equipment deemed necessary to assure their protection.

- All spoil piles will be stored a minimum of two (2) feet from the sides of the excavation. The spoil pile must not block the safe means of egress.

- If a trench or excavation is 4 feet or deeper, stairways, ramps, or ladders will be used as a safe means of access and egress. For trenches, the employee must not have to travel any more than 25 feet of lateral travel to reach the stairway, ramp, or ladder.

- No employee will work in an excavation where water is accumulating unless adequate measures are used to protect the employees.

- A competent person will inspect all excavations and trenches daily, prior to employee exposure or entry, and after any rainfall, soil change, or any other time needed during the shift. The competent person must take prompt measures to eliminate any and all hazards.

- Excavations and trenches 4 feet or deeper that have the potential for toxic substances or hazardous atmospheres will be tested at least daily. Documentation of test data will be maintained throughout the course of the project. If the atmosphere is inadequate, protective systems will be utilized.

- If work is in or around traffic, employees must be supplied with and wear orange reflective vests. Signs and barricades must be utilized to ensure the safety of employees, vehicular traffic, and pedestrians.

COMPETENT PERSON RESPONSIBILITIES

The OSHA Standards require that the competent person must be capable of identifying existing and predictable hazards in the surroundings, or working conditions which are unsanitary, hazardous, or dangerous to employees, and have authorization to take prompt corrective measures to eliminate them and, if necessary, to stop the work.

A competent person is required to:

- Have a complete understanding of the applicable safety standards and any other data provided.
- Identify the proper locations of underground installations or utilities, and ensure that the proper utility companies have been contacted.
- Conduct and document soil classification tests and reclassify soil after any condition changes.
- Determine adequate protective systems (sloping, shoring, or shielding systems) for employee protection.
- Conduct and document all air monitoring for potential hazardous atmospheres.
- Conduct and document daily and periodic inspections of excavations and trenches.
- Approve design of structural ramps, if used.

EXCAVATION SAFETY PLAN

An excavation safety plan is required in written form. This plan is to be developed to the level necessary to ensure complete compliance with the OSHA Excavation Safety Standard and state and local safety standards.

Excavation safety plan factors:

- Utilization of the local one-call system
- Determination of locations of all underground utilities

- Consideration of confined space atmosphere potential
- Proper soil protection systems and personal protective equipment and clothing
- Determination of soil composition and classification
- Determination of surface and subsurface water
- Depth of excavation and length of time it will remain open
- Emergency rescue system/procedure
- Proper adherence to all other applicable OSHA Standards, this Excavation and Trenching Safety Program, and any other coinciding safety programs.

SOIL CLASSIFICATION AND IDENTIFICATION

The OSHA Standards define soil classifications within the Simplified Soil Classification Systems, which consist of four categories: Stable Rock, Type A, Type B, and Type C. Stability is greatest in Stable Rock and decreases through Type A and B to Type C, which is the least stable. Appendix A of the Standard provides soil mechanics terms and types of field tests used to determine soil classifications.

Stable Rock is defined as:

- Natural solid mineral matter that can be excavated with vertical sides and remain intact while exposed.

Type A soil is defined as:

- Cohesive soils with an unconfined compressive strength of 1.5 tons per square foot (TSF) or greater.
- Cemented soils like caliche and hardpan are considered Type A.

Soil is NOT Type A if:

- It is fissured.
- The soil is subject to vibration from heavy traffic, pile driving or similar effects.
- The soil has been previously disturbed.
- The material is subject to other factors that would require it to be classified as a less stable material.

- The exclusions for Type A most generally eliminate it from most construction situations.

Type B soil is defined as:

- Cohesive soil with an unconfined compressive strength greater than .5 TSF, but less than 1.5 TSF.
- Granular cohesionless soil including angular gravel, silt, silt loam, and sandy loam.
- The soil has been previously disturbed except that soil classified as Type C soil.
- Soil that meets the unconfined compressive strength requirements of Type A soil, but is fissured or subject to vibration.
- Dry rock that is unstable.

Type C soil is defined as:

- Cohesive soil with an unconfined compressive strength of .5 TSF or less.
- Granular soils including gravel, sand and loamy sand.
- Submerged soil or soil from which water is freely seeping.
- Submerged rock that is not stable.

Soil Test & Identification

The competent person will classify the soil type in accordance with the definitions in Appendix A on the basis of at least one visual and one manual analysis. These tests should be run on freshly excavated samples from the excavation and are designed to determine stability based on a number of criteria: the cohesiveness, the presence of fissures, the presence and amount of water, the unconfined compressive strength, the duration of exposure, undermining, and the presence of layering, prior excavation and vibration.

The cohesion tests are based on methods to determine the presence of clay. Clay, silt, and sand are size classifications, with clay being the smallest sized particles, silt intermediate and sand the largest. Clay minerals exhibit good cohesion and plasticity (can be molded). Sand exhibits no elasticity and virtually no cohesion unless surface wetting is present. The degree of cohesiveness and plasticity depend on the amounts of all three types and water.

When examining the soil, three questions must be asked: Is the sample granular or cohesive? Fissured or non-fissured? What is the unconfined compressive strength measured in TSF?

Methods of testing soils:

- Visual test: If the excavated soil is in clumps, it is cohesive. If it breaks up easily, not staying in clumps, it is granular.

- Wet manual test: Wet your fingers and work the soil between them. Clay is a slick paste when wet, meaning it is cohesive. If the clump falls apart in grains, it is granular.

- Dry strength test: Try to crumble the sample in your hands with your fingers. If it crumbles into grains, it is granular. Clay will not crumble into grains, only into smaller chunks.

- Pocket pentrometer test: This instrument is most accurate when soil is nearly saturated. This instrument will give unconfined compressive strength in tons per square foot. The spring-operated device uses a piston that is pushed into a coil up to a calibration groove. An indicator sleeve marks and retains the reading until it is read. The reading is calibrated in tons per square foot (TSF) or kilograms per cubic centimeter.

- Thumb penetration test: The competent person attempts to penetrate a fresh sample with thumb pressure. If the sample can be dented, but penetrated only with great effort, it is Type A. If it can be penetrated several inches and molded by light pressure, it is Type C. Type B can be penetrated with effort and molded.

- Shearvane: Measures the approximate shear strength of saturated cohesive soils. The blades of the vane are pressed into a flat section of undisturbed soil, and the knob is turned slowly until soil failure. The dial is read directly when using the standard vane. The results will be in tons per square foot or kilograms per cubic centimeter.

The competent person will perform several tests along the depth and length of the excavation to obtain consistent, supporting data. The soil is subject to change several times within the scope of an excavation and the moisture content will vary with weather and job conditions. The competent person must also determine the level of protection based on what conditions exist at the time of the test, and allow for changing conditions.

EXCAVATION PROTECTION SYSTEMS

The three basic protective systems for excavations and trenches are sloping and benching systems, shoring, and shields.

The protective systems shall have the capacity to resist without failure all loads that are intended or could reasonably be expected to be applied to or transmitted to the system. Every employee in an excavation shall be protected from cave-ins by an adequate protective system.

Exceptions to using protective system:

- Excavations are made entirely in stable rock
- Excavations are less than 5 feet deep and declared safe by a competent person

Sloping and Benching Systems

There are four options for sloping:

- Slope to the angle required by the Standard for Type C soil, which is the most unstable soil type.
- The table provided in Appendix B of the Standard may be used to determine the maximum allowable angle (after determining the soil type).
- Tabulated data prepared by a registered professional engineer can be utilized.
- A registered professional engineer can design a sloping plan for a specific job.

Sloping and benching systems for excavations five (5) to twenty (20) feet in depth must be constructed under the instruction of a designated competent person.

Sloping and benching systems for excavations greater than twenty (20) feet must be designed and stamped by a registered professional engineer.

Sloping and benching specifications can be found in Appendix B of the OSHA Standard.

Shoring Systems

Shoring is another protective system or support system. Shoring utilizes a framework of vertical members (uprights), horizontal members (whales), and cross braces to support the sides of the excavation to prevent a cave-in. Metal hydraulic, mechanical or timber shoring are common examples.

Different examples of shoring are found in the OSHA Standard under these appendices:

Appendix C - Timber Shoring for Trenches
Appendix D - Aluminum Hydraulic Shoring for Trenches
Appendix E - Alternatives to Timber Shoring

Shield Systems (Trench Boxes)
Shielding is the third method of providing a safe workplace. Unlike sloping and shoring, shielding does not prevent a cave-in. Shields are designed to withstand the soil forces caused by a cave-in and protect the employees inside the structure. Most shields consist of two flat, parallel metal walls that are held apart by metal cross braces. Shielding design and construction is not covered in the OSHA Standards. Shields must be certified in design by a registered professional engineer and must have either a registration plate on the shield or registration papers from the manufacturer on file at the jobsite office.

Any Repairs Or Modifications Must Be Approved By The Manufacturer.

SAFETY PRECAUTIONS FOR SHIELD SYSTEMS

- Shields must not have any lateral movement when installed.
- Employees will be protected from cave-ins when entering and exiting the shield (examples - ladder within the shield or a properly sloped ramp at the end).
- Employees are not allowed in the shield during installation, removal, or during any vertical movement.
- Shields can be 2 ft. above the bottom of an excavation if they are designed to resist loads at the full depth and if there are no indications of caving under or behind the shield.
- The shield must extend at least 18 inches above the point where proper sloping begins (the height of the shield must be greater than the depth of the excavation).
- The open end of the shield must be protected from the exposed excavation wall. The wall must be sloped, shored, or shielded. Engineer designed end plates can be mounted on the ends of the shield to prevent cave-ins.

PERSONAL PROTECTIVE EQUIPMENT

It is Company policy to wear a hard hat, safety glasses, and work boots on the jobsite. Because of the potential hazards involved with excavations, other personal protective equipment may be necessary (examples - goggles, gloves, safety harness and lifeline, and respiratory equipment).

INSPECTIONS

Daily inspection of excavations, the adjacent areas and protective systems shall be made by the competent person for evidence of a situation that could result in a cave-in, indications of failure of protective systems, hazardous atmospheres or other hazardous conditions.

- All inspections shall be conducted by the competent person prior to the start of work and as needed throughout the shift.
- Inspections will be made after every rainstorm or any other increasing hazard.
- All documented inspections will be kept on file in the jobsite safety files
- A copy of the Daily Excavation Checklist is located at the end of this program.

TRAINING

The competent person(s) must be trained in accordance with the OSHA Excavation Standard, and all other programs that may apply (examples Hazard Communication, Confined Space, and Respiratory Protection), and must demonstrate a thorough understanding and knowledge of the programs and the hazards associated.

All other employees working in and around the excavation must be trained in the recognition of hazards associated with trenching and excavating.

DAILY EXCAVATION CHECKLIST

Client		**Date**	
Project Name		**Approx. Temp.**	
Project Location		**Approx. Wind Dir.**	
Job Number		**Safety Rep**	
Excavation Size (Length x Width x Depth)		**Soil Classification**	
Protective System Used			
Activities In Excavation			
Competent Person			

Excavation > 4 feet deep? _____Yes _____No
If *YES,* complete a Confined Space Permit BEFORE any person enters the excavation.

NOTE: **Trenches over 4 feet in depth are considered excavations.**

Any item below marked *NO* must be corrected or controlled BEFORE any person enters the excavation.

YES	NO	N/A	POTENTIAL HAZARD
GENERAL			
			Employees protected from cave-ins & loose rock/soil that could roll into the excavation?
			Spoils, materials & equipment set back at least 4 feet from the edge of the excavation?
			Engineering designs for shoring &/or manufacturer's design specifications for trench box on site?
			Adequate signs posted and barricades provided?
			Training (toolbox meeting) conducted w/ employees prior to entering excavation?
UTILITIES			
			Utility company contacted & given 24 hours notice &/or utilities already located & marked?
			Overhead lines located, noted and reviewed with the operator?
			Utility locations reviewed with the operator & precautions taken to protect against contact?
			Utilities crossing the excavation supported, and protected from falling materials?
			Underground installations protected, supported or removed when excavation is open?

WET CONDITIONS			
			Precautions taken to protect employees from water accumulation (continuous dewatering)?
			Surface water or runoff diverted / controlled to prevent accumulation in the excavation?
			Inspection made after every rainstorm or other hazard increasing occurrence?
HAZARDOUS ATMOSPHERES			
			Air in the excavation tested for oxygen deficiency, combustibles, other contaminants?
			Atmospheric hazards present?
			Ventilation used in hazardous atmospheres?
			Emergency equipment available where hazardous atmospheres could or do exist?
			Safety harness and lifeline used?
			Supplied air necessary (if yes, contact safety department)?
ENTRY & EXIT			
			Exit (i.e. ladder, sloped wall) no further than 25 feet from ANY employee?
			Ladders secured and extend 3 feet above the edge of the trench?
			Wood ramps constructed of uniform material thickness and cleated together at the bottom?
			Employees protected from cave-ins when entering or exiting the excavation?

KEEP 1 COPY OF EACH DAILY EXCAVATION CHECKLIST ON SITE FOR THE PROJECT DURATION

FALL PROTECTION

Applicable OSHA Standards: 29 CFR 1926 Subpart M

PURPOSE

The purpose of this policy is to comply with the OSHA standard to protect workers against falls from elevated work areas.

SCOPE

This program applies to all of our controlled worksites where one of our, or a subcontract employee may be occupationally exposed to fall hazards.

HAZARD IDENTIFICATION

As a general rule, any time a worker is at a height greater than 6 feet, a fall hazard exists. Where a fall hazard exists, there are two acceptable options; (1) eliminate the hazard, or (2) provide protection against it. Ideally, it is best to totally eliminate the hazard. Since that is often not possible, our Company requires that fall protection be required when an employee has the potential of falling a distance of 6 feet or greater.

FALL SYSTEM SPECIFICATION

Safety harness lanyards shall be a minimum of 1/2-inch nylon, or equivalent, with the maximum length to provide for a fall of no greater than 6 feet, with a nominal breaking strength of 5,000 pounds. A Body harnesses consist of components made of nylon straps such as but not limited to: chest, shoulder, thigh, and waist strap designed with a tensile strength of 5000 pounds. The harness shall be designed to allow for suspension by a fall, and prevent the employee from tilting or falling out of the harness while suspended. All safety harness and lanyard hardware shall be drop forged or pressed steel, cadmium plated in accordance with type1, Class B plating specified in Federal Specification QQ-P-416. Surface shall be smooth and free of sharp edges. Lanyard hardware except for rivets shall be capable of withstanding a tensile loading of 5,000 pounds without cracking, breaking, or taking a permanent deformation.

RULES AND GUIDELINES

In compliance with OSHA's Fall Protection Requirements, this company requires that all employees conform to 100% fall protection when working at a elevation of 6 feet or greater by means of guardrails, safety nets or personal fall arrest systems. A full body harness with a shock absorbing double lanyard shall be used for 100% fall protection. ***Lanyards are not to be connected to each other by means of the snap hook.***
Training shall include proper use as well as proper fitting according to size. ***Maximum working load is 310 pounds, unless labeled otherwise.***

All equipment must be visually inspected before each use. Equipment must not be altered in any way. Repairs must be performed only by the manufacturer or authorized agent. ***This includes adding wire or other foreign material to any part of a harness or lanyard, alterations to the double locking snap-hook or tying knots in lanyards is also not permitted.***

Fall arrest systems are designed for personal fall protection. ***Never use fall protection equipment for purposes other than those for which it was designed. Fall protection equipment should never be used for tag lines, hoisting, securing, or towing.***

Do not use a mixture of various manufacturer's components (i.e. Miller harness with a Rose lanyard). Manufacturers will not assure safe use or liability for such mixtures.

Point of attachment shall not be conduit, lines too small to carry the load, which may be imposed on the line, or hot lines, which may damage or alter its ability to support a worker. ***The point of attachment must be capable of supporting a minimum dead weight of 5,000 pounds per person attached***

Always check for obstructions below the work area to make sure potential fall path is clear. When ***utilizing shock-absorbing lanyards, the lanyards units may elongate as much as 3-1/2 ft. during the shock-absorption process.***

Environmental hazards should be considered when selecting fall protection equipment. Polyester should be used in certain chemical or acidic environment. Lifelines shall be secured above the point of operation to an anchorage point or structural member capable of supporting a minimum dead weight of 5,000 pounds.

TRAINING

Training shall be provided for each employee who might be exposed to fall hazards. Training shall include the following: proper donning and sizing of body harnesses; application limits; proper anchoring and tie-off techniques; estimation of free fall distance, including determination of deceleration distance, and the total fall distance to prevent striking a lower level; methods of use; and inspection and storage of the system. Careless or improper use of the equipment can result in serious injury or death.

INSPECTION 1926.502 (d)(21)

Personal fall arrest systems shall be inspected prior to each use for wear, damage and other deterioration, and defective components shall be removed from service. Monthly inspection shall be rendered by a competent person.

IMPLEMENTATION OF 100% FALL PROTECTION PROGRAM

A. Purpose
   - To provide guidelines for maximum protection for all personnel against falls from elevations when working or traveling at elevations six feet (6') or more above ground level.

B. Goal
   - Achieve 100% fall protection for all personnel when working six feet (6') or more above ground level.

C. Responsibility
   - Project management and front line supervision are responsible for vigorously supporting this program and for aggressive implementation and enforcement to ensure100% compliance by all personnel.

   - The S.H.E. Department shall have full authority to ensure 100% enforcement of the program. The S.H.E. Department's primary responsibility however will be to support crafts during program implementation and for monitoring the program for compliance and advising supervisors and management on program status.

   - In the event, a fall occurs or some other serious incident (near miss), the Safety, Health, and Environmental Department will investigate the circumstances to determine the root cause and correct any deficiencies that is found.

   - The Safety, Health, and Environmental Department will review the Fall Protection Program annually and correct any deficiencies that are found to improve the procedures.

   - Supervisors must analyze all elevated tasks as to fall protection needs and to assure adequate fall protection systems are provided. After analyzing the tasks, supervisors shall instruct employees involved in the specifics of the fall protection to be used.

   - Field Supervisor will be responsible for making sure that all access to areas where leading edges and other operations that is taking place are controlled (Barricades and Tags, Signs etc.) to restrict access.

D. Procedures
   - All employees will be required to wear an approved full body harness and shock absorbing lanyards when six feet (6') or more above the ground.
     - All departments shall make maximum use of primary fall protection systems such as scaffolds, aerial lifts, personnel hoists, etc. These systems shall be equipped with complete working/walking surfaces free of floor

openings, with standard guardrail systems and a safe means of access/egress.

- Employees traveling or working in elevated areas six feet (6') or more above a lower level or adjacent to a leading edge where a fall exposure exists shall make use of secondary fall protection in securing their safety lanyard at all times to a structure, lifeline or approved fall arresting device capable of supporting 5000 pounds. Employees working from or traveling in power work platforms or personnel lifting/ hoisting devices shall also properly secure their safety lanyards as noted In procedures below.
- Fall protection devices such as lifelines, safety harnesses/lanyards, etc. shall be Inspected before each use and on a regular basis for damage and/or deterioration. Defective equipment shall be removed from service and destroyed and/or repaired.
- Fall protection devices subjected to shock loading imposed during fall arresting shall be removed from service and the S.H.E. Department notified.
- Fall protection devices and systems shall not be used for any other purpose other than employee safeguarding.

E. Fall Protection Devices

1. Primary Fall Protection Systems

a. These systems provide walking and working surfaces in elevated areas which are free from floor openings and are equipped with standard guard rail systems on all open sides and with closure apparatus for ladder openings or other points of access when required. These systems include but are not limited to: scaffolds, pencil boards, aerial lifts (JLG, scissors lifts, etc.) and other approved personnel hoisting devices.

b. Standard guard rail systems consist of a top rail of 2 x 4 lumber or equivalent material approximately forty-two inches (42") above the walking/working surface, a mid rail at approximately twenty-one inches (21") above said surface and a four inch (4") tall toe board mounted at the walking/working surface. Upright support post spacing must not exceed eight feet (8') and the entire system must be capable of supporting 200 pounds force outward with minimum deflection. These systems are used to guard open sides of floors, platforms and walkways in elevated areas.

c. Floor openings/hole covers are used to close openings and holes in floors, platforms and walkways. These covers must be capable of supporting the maximum potential load they may be subjected to. The cover must completely cover the opening/hole and be secured against accidental displacement. These covers must be marked **HOLE COVER -DO NOT REMOVE".**

2. Secondary Fall Protection Systems

a. Safety Harness/Lanyard Systems

1) These systems must be worn and used as a backup to the primary fall protection system noted above and in the absence of primary systems.
2) Only safety harnesses/lanyard systems furnished by the company may be used. Personal safety harnesses/lanyard system may not be used for fall protection.
3) Lanyards must be of the shock absorbing type when used for fall protection.
4) The fall protection lanyard shall be attached to the D-ring located in the middle back of the safety harness.
5) D-rings located at the waist may only be used for positioning and with rail type ladder climbing devices.
6) Work positioning lanyards are to be attached to D-rings at the waist belt location and be supported by an appropriate work belt. Positioning lanyards need not be of shock absorbing type and must be used for fall protection. The positioning lanyard must always be backed up by a properly secured shock absorbing fall protection lanyard. **Position** ***harnesses/ lanyards shall not be used without written approval from the S.H.E. department.***

b. Lifeline

1) Lifeline systems are points of attachment for fall protection lanyards and must be capable of supporting at least 5000 pounds per person. Lifelines may be mounted either vertically or horizontally and are generally intended to provide mobility to personnel working elevated areas.
2) Horizontal lifelines must be made of at least three-eighths inch (3/8") wire rope cable properly supported to withstand at least 5000 pounds impact. Horizontal lifelines should be positioned so as to provide points of attachment at waist level or higher to personnel utilizing them. Lifelines shall not be used for any purpose other than fall protection. ***Horizontal lifelines shall not be used without written approval and inspection by the S.H.E. Department.***

3) Vertical lifelines are used for personal fall protection when vertical mobility is required and may be comprised of static lifelines made of synthetic fiber rope or cable which are equipped with approved sliding rope or cable grabs or they may consist of self retracting reel lanyard/lifelines which are attached directly to a safety harness.

- Static rope lifelines with rope grabs are required for personnel working from spiders/sky-climbers and two-point suspension scaffolds. These types of lifelines can also be used to provide fall protection where tie points are limited and vertical mobility is required.

- Sliding rope grabs approved for the size rope used are the only method for securing a safety lanyard to a vertical lifeline. Lanyards ***shall not*** be attached to vertical lifelines by means of knots or loops.

- Rope grabs shall be positioned on the lifeline at least above the shoulder of the user. Lanyards that are utilized with a rope grab must meet manufactures specifications. (***No employee will utilize any lanyard longer than 3' or 4' depending on the type of rope grab when using a vertical lifeline system.***

- Tie-off using a knot in a rope (at any location) can reduce the lifeline strength by 50 percent or more. Tie-off of a rope lifeline around an "H" or "I" beam or similar support can reduce its strength as much as 70 percent due to the cutting action of the beam edges. Slings used should be made of a webbing sling or wire core lifeline around the beam; or the lanyard or lifeline should be protected from the edge; or free fall distance should be greatly minimized.

- Tie-off where the line passes over or around rough or sharp surfaces reduces strength drastically. Such a tie-off should be avoided or an alternative tie-off rigging should be used. Such alternatives may include use of a snap-hook d-ring connection, wire rope tie-off, an effective padding of the surfaces, or an abrasion-resistance strap around or over the problem surface.

- Employees must have a separate lifeline when the lifeline is vertical. The lifeline must remain in a vertical position and remain within six feet (6') of being perpendicular to the point of attachment to eliminate any swing in the event of a fall.

- A minimum of twelve feet (12') of lifeline should be allowed below the securing point of a rope grab type deceleration device, and the end terminated to prevent the device from sliding off the lifeline. Alternatively, the lifeline should extend to the ground or the next level below. **NOTE:** ***Softeners should be used where lifelines contact sharp edges such as roof tank edges, and beam edges.***

c. Knots --Knots for point of attachment have different efficiencies.

1) The **Clove Hitch-** Two half hitches, for securing a rope at a right angle to a post or pipe. To prevent this knot from coming loose, tie a half hitch over the clove hitch with the loose end of the rope. 75% efficient.

2) The **Bowline-** A non-slipping eye knot that will not jam and is easily untied. 60% efficient.

3) The **Timber Hitch-** for fastening a rope to a post at a right angle that will not slip under load but is easily untied.65% efficient.

d. Rope Grab

1) Restraint: In this application, the rope grab is used in combination with a lifeline, lanyard (or connector) and the body harness to restrain or tether the user from reaching a hazard.

2) The capacity for this equipment is designed for use by persons with a combined weight (person, clothing, tools, etc.) of no more than 310 pounds. **NOTE: *No more than one person may be attached to a single lifeline*.**

3) The rope grab must be rigged such that there is no possible vertical free fall. Personal fall arrest system must be rigged in such a way to limit the free fall to a maximum of six feet (6') (reference ANSI Z359.1-1992) or five feet (5') per ANSI A10.14-1991.

4) The rope grab may not be used with a lanyard connecting subsystem exceeding three feet (3' or 4').

5) Before each use, visually inspect the rope grab. The rope grab must be inspected by a competent person other than the user at least annually.

6) Avoid working where lifeline may cross or tangle with that of another worker.

7) Do not allow the lanyard to pass under arms or between legs.

8) Do not clamp, tie or otherwise prevent the rope grab lanyard connection lever from moving into locked" position.

9) In the event that a rope grab has been subjected to a fall arrest or impact force, it must be immediately removed from service and destroyed.

e. Rope Grab Inspection

1) Inspect action of locking roller, it should be free to travel the full length of the guide slots.

2) Inspect the lanyard connection lever for freedom of motion, there should be no binding or sticking. Inspect for wear on the nose of the lever (where it contacts the roller), the lever must push the roller into the rope.

3) Inspect lever spring, it should be in its correct place and free from damage.

4) Inspect detent pin, the top button should spring back up when pushed down. The pin should easily slide through the rope grab body and hinge.

5) The rope grab hinge must pivot freely and close completely.

6) Check that the gravity lock in the hinge works freely, when the rope grab is held upside down, the gravity lock should drop down and prevent the hinge from fully closing.

7) Inspect the hinge for signs of rope wear, there should be no dips or depressions worn into the rope channel.

f. Rope Grab attachment

1) Be sure the rope grab is in the "UP" position. An "UP" mark has been stamped into the rope grab. The "UP" end of the rope grab must be orientated towards the anchorage when installed onto the lifeline.

NOTE: ***The rope grab hinge incorporates a stop, which will prevent the hinge from closing if the rope grab is not held upright and vertical.***

2) Remove the detent pin and open the hinged rope retainer. Raise lanyard lever to full "UP" position. Insert lifeline into rope grab.

3) Close hinged rope retainer and replace detent pin, make sure pin is locked (ball lock on end of pin). Attach the lanyard.

4) Test operation of rope grab by pulling down on the lanyard. You must not be able to pull the rope grab down the lifeline once the locking roller has fully engaged the lifeline.

g. Maintenance

1) An excessive buildup of dirt , paint, etc. may prevent the rope grab or lifeline from working properly, and in severe cases degrade the device or rope to a point where it has weakened and should be removed from service.

2) Do not lubricate the rope grab roller. The rope grab hinge, hinge pin and lanyard connection lever may be lubricated using a light oil or arousal such as WD-40. Clean off excess lubricant before using. Do not allow lubricant to contact lifeline.

3) Do not attempt to disassemble the rope grab.

4) Store the rope grab and lifeline in a dry, clean environment out of direct sunlight. Avoid where chemical vapors may exist.

Thoroughly inspect the rope grab and lifeline after any period of extended storage.

h. Retractable Reel Lifeline

1) Retractable lifeline devices shall be attached to support capable of withstanding 5000 pounds impact loading.

2) Retractable lifeline devices shall be secured by means of shackles and wire rope chokers or synthetic slings. **NOTE: *Synthetic rope or natural fiber shall not be used to secure these devices.***

3) Each retractable lifeline device shall be equipped with a rope tag line for extending the device to elevations below the point of attachment.

4) The point of attachment of the retractable lifeline's double locking hook shall be directly to the d-ring of the employees safety harness that is located at the center of his/her back.

i. Temporary Work Platforms/Walkways (Scaffolds and Pencil Boards)

1) Every effort shall be made to ensure all temporary platforms/walkways are equipped with solid decks free of openings and with standard guard rail systems.

2) Employees working from temporary platforms shall have their safety lanyards secured to a lifeline or structure capable of supporting 5000 pounds impact loading, whenever possible.

3) Every temporary work platform or walkway twelve feet (12') or higher must be provided with a safe means of access/egress.

3. Personnel Lifts/Hoisting Devices

a. Aerial Lifts (JLG< Scissor, Snorkel, etc.)

1) Employees riding or working from these lifts must secure their safety lanyard to the designated anchor point (per manufacture) inside the lift basket at all times.

2) Lifts shall be placed on solid level surfaces to eliminate possibility of overturning.Any employee utilizing any type of lift devices will perform a pre-use inspection before the start of any operation.

b. Spiders and Sky Climbers

Employees riding in or working from these hoisting devices shall each be provided an independent lifeline and rope grab to which their lanyard shall be secured at all times when aloft.

c. Ladders

1) Permanent caged ladders may be ascended or descended without additional fall protection. Any ladder that exceeds 25' will have a break, fall arrest system, or a cage system in place before any employee utilize it.

2) Temporary construction ladders shall extend at least thirty-six inches (36") above their uppermost landing and be secured against displacement by means of a rope at the top section of the ladder.

3) Employees climbing ladders, which are not tied off at the top, must have another person hold the ladder at the bottom until it can be secured. This includes the last trip down after untying the ladder at the top.

4) When ascending or descending ladders, employees shall use both hands. Materials or tools shall not be carried in hands while using ladders.

5) Upon climbing to the elevation where the task is to be performed the person on the ladder shall properly secure their safety lanyard before doing anything else. Next, the ladder must be tied off before work can begin. When the task is complete the process is reversed with the safety lanyard being the last protective device detached prior to descent.

6) Absolutely no objects, tools, or material are to be carried in hands while climbing or descending ladders.

7) All ladders will be inspected before each use and a recorded inspection monthly.

8) All recorded inspections will be recorded on a vinyl decal located on the inside of the side rail.

4. Rigging/Material Handling

Offloading Float Trailers -- Such operations as offloading float trailers requires special consideration that pertain to unique circumstances and situations, a few techniques observations to follow:

1) Is the load stable where it will not shift during handling and cause a fall?

2) Be always aware of trailer deck edges, watch where you step.

3) Do not stand between any load hoisted and the hoisting device

4) Use tag lines to control loads while standing clear of them.

5) Use ladders to access and egress float trailers.

SUMMARY

Our Company bears the responsibility to educate its employees on proper selection, use, inspection, and maintenance of fall protection. It is the responsibility of the employee to apply the training that he/she has received as a key component of their daily activities.

FIRE PROTECTION

Applicable OSHA Standards: 29 CFR 1926.24,.150-.155

PURPOSE

The purpose of this policy is to outline prevention and protective measures which should be taken to ensure protection of personnel, property, and the environment from a fire incident.

SCOPE

This program applies to all of our controlled worksites where one of our, or a subcontract employee may be occupationally exposed to fire hazards.

FIRE PREVENTION

• Electrical wiring and equipment for light, heat or power purposes, must be installed in accordance with the national electric code. The proper type and size of fuses shall be used at all times. All equipment and portable tools are to be grounded. Explosion proof fixtures are required in hazardous classified locations.

• Housekeeping - Remove trash daily from the work areas and from the work site. Use trash drums to reduce extra handling. Put rags in closed containers. Rags used for solvent cleaning should be kept in a closed metal container until properly disposed of.

• Compressed Gas Cylinder - Separate full cylinders from "empty" cylinders in storage. Also, separate oxygen cylinders from fuel cylinders by 20 feet, or by a fire resistant barrier. Tie cylinders in a vertical position. Keep oil and grease away from oxygen valves. Turn cylinders off when not in use. Protect cylinders from excess heat (sun, open flame, equipment exhausts, sparks, slags, etc.) No cylinder storage inside buildings.

• Gasoline and Diesel Pumps - Service station type pumps require physical barriers to prevent damage to the pumps. "No Smoking or Open Flame" signs are also necessary. Dispensing nozzles shall be of an approved type.

- Internal Combustion Engines - Turn off engine before refueling, and allow a minimum of fifteen (15) minutes for engine to cool off. Insulate exhaust stacks near combustible material. Keeps exhaust discharge away from flammable liquids (particularly truck exhausts).

• Material Storage - Outside - Storage areas containing combustible material (lumber, etc.), or non-combustible material in combustible containers (metal parts in wooden boxes) need to be separated from other material by at least twenty (20) feet on all sides to help prevent the spread of fire and to allow fire equipment access. A single storage area cannot be larger than fifty (50) by one hundred and fifty (150) feet. All weeds, dead grass, and combustible trash need to be kept out of the storage areas and out of access ways.

• No Smoking or Open Flame Areas and Signs - Areas where flammable liquids are stored or dispensed need to be clearly identified. "NO SMOKING OR OPEN FLAME" signs need to be posted no more than 25 feet away from the hazard. Areas containing large quantities of combustible materials should also be identified and marked with the same signs. Cigarette butt cans will help prevent careless disposal of smoking materials.

• Open Flames - Welding torches, matches, heaters, and other open flames have caused many unnecessary fires. Check the area for possible hazards before lighting up.

• Sparks and Slag - Move flammable or combustible materials before starting to weld or burn. If material cannot be moved, cover it with fire retardant material.

• Tarps and Plastic Coverings - Tarps must be fire retardant. Plastic sheets must be flame resistant if they are to be used with flame or high heat operations. Tie tarps and plastic securely so they cannot blow loose.

• Temporary Heating Devices - No open burning of trash. Propane heating units need automatic fuel shut-off valves. Oil salamanders must be cool before being refilled, or being moved. All heaters need good clearance or non-combustible insulation on all sides, top and bottom.

• A temporary building shall not be erected where it will adversely affect any means of exit.

• No combustible material shall be stored with ten (10) feet of a building or structure.

• Roadways and access to storage areas must be maintained to accommodate the widest vehicle that may be used for fire fighting purposes.

• Material shall not be stored with thirty six (36) inches of a fire door opening.

FLAMMABLE AND COMBUSTIBLE LIQUID STORAGE

• Only approved containers and portable tanks shall be used for storage and handling.

• Flammable Liquids - All - Liquids with a flash point below 140 • F are refer "flammable liquids." Store in original containers until needed. All tanks, drums, containers, cans and cabinets are to be electrically grounded and labeled with the name of the material. Do not mix contents and labels. Handle small quantities (five [5] gallon maximum) in "safety cans." Two main features of a safety can are a spring-loaded cap and a flame arrester.

• Flammable or Combustible Liquids shall not be stored in areas used for exits, stairways, or normally used for the safe passage of personnel.

INDOOR STORAGE OF FLAMMABLE AND COMBUSTIBLE LIQUIDS

• No more than twenty five (25) gallons of flammable or combustible liquids are to be stored inside a building unless stored in an approved storage cabinet and labeled "flammable - keep fire away."

• No more than sixty (60) gallons of flammable or one hundred and twenty (120) gallons of combustible liquids may be stored inside of a single storage cabinet inside a building. No more than three (3) storage cabinets are allowed in a single building when containing the maximum amount allowed.

• Quantities of flammable or combustible liquids stored inside a building which exceed the amount of three storage cabinets must be stored in an approved storage room which meets the applicable requirements of The National Fire Protection Association. An aisle space of three feet wide must be maintained at all times in inside storage rooms.

• Materials which react with water shall not be stored in the same location as flammable or combustible liquids. A separate storage area should be provided for water reactive materials and conspicuously marked as such.

• Electrical wiring and equipment located in inside flammable and combustible liquid storage rooms shall be approved for hazardous locations.

STORAGE OF FLAMMABLE AND COMBUSTIBLE LIQUIDS OUTSIDE OF BUILDINGS

• No more than 1,100 gallons of flammable or combustible liquids may be stored in any one outside storage area unless separated by a minimum aisle space of five (5) feet. Groups of containers shall not be nearer than twenty (20) feet to a building. Each

container or outside storage area must be accessible by a twelve (12) foot wide access for a maximum distance of 200 feet.

HANDLING FLAMMABLE AND COMBUSTIBLE LIQUIDS

• Dispensing of flammable or combustible liquids from one container to another shall be separated from other operations by a distance of not less than twenty five (25) feet.

• Dispensing of flammable or combustible liquids from one container to another shall be separated from other operations by a distance of not less than twenty five (25) feet.

• Containers shall be bonded when transferring flammable liquids from one container to another.

• Approved self-closing valves shall be used for dispensing of flammable or combustible liquids.

• Flammable or combustible liquids shall be drawn or transferred by either gravity or pump only. Never transfer by means of air pressure on the container or portable tank.

• Flammable liquids shall be kept in closed containers when not actually in use.

• Precautions shall be taken to eliminate leakage or spillage of flammable and combustible liquids where necessary such as the use of funnels.

• Leakage or spillage from flammable and combustible liquids must be promptly cleaned up and properly disposed of.

TRAINING

• Work environments, classified as hot work, sometimes require the use of a trained fire watch. Whenever personnel are assigned as fire watch they shall be properly trained. Fire

watches are to be at the site prior to beginning hot work and thirty minutes after hot work is complete.

• All personnel which may be required to use fire extinguishers shall be trained in the proper type, use, care, and technique for incipient fire fighting.

FIRE EXTINGUISHERS - MOUNTING AND ACCESS

Extinguishers are not to be left on the floor, or a scaffold, or on the ground. They are to be mounted on a wall, handrail, barricade, etc.

Extinguishers that have a total weight of more than forty (40) pounds are to be mounted with the top of the extinguisher no more than forty two (42) inches above the floor. Extinguishers weighing forty (40) pounds or less may be mounted with the top as high as five (5) feet above the floor. (Mounting all extinguishers at the forty two (42) inch height is a good habit.)

Extinguishers should be located where they can be easily seen. In cases where this is not practical, signs or red paint marking, need to be added to identify the location of the extinguisher.

Keep trash and stored material away from extinguishers to prevent blockage of the access to the extinguisher.

FIRE EXTINGUISHERS - INSPECTION AND TESTING

Monthly Inspections
Every fire extinguisher is to be visually inspected at least once a month. The inspection is to include:

1. Proper location?
2. Fully charged?
3. Seal wire not broken?
4. Free of any obvious defects or damage?

Annual inspections:
A through examination of each extinguisher is to be conducted annually by an individual trained to examine, repair, and recharge extinguishers. An inspection tag is to be attached to each extinguisher showing the date of the annual examination, the date of the recharge, and the initials of the individual making the examination.

Hydrostatic Tests:
Extinguishers more than five (5) years old may need a hydrostatic test if they are to remain in service.

FIRE EXTINGUISHERS - TYPES AND LOCATIONS

Buildings (Offices, Shops, Warehouses) (2-A UL Rating):
• Hazard Wood, paper, etc.

• Use 2000 gallon pressured water type extinguisher. For cold climates, specify anti-freeze.
• Number One extinguisher required for each three thousand (3000) square feet of floor space. Each floor is measured separately.
Location Mount the extinguisher so that the travel distance from any point is not more than seventy five (75) feet. Mount along the normal walkways.

Temporary offices, trailers, sheds (2-A):
• Hazard Lumber, wooden boxes, etc.
• Use 2000 gallon pressured water type extinguisher.
• Number One extinguisher in each trailer or temporary building. If the trailer or building is divided into separate sections with solid partitions without doors, then each section needs one extinguisher.
• Location Mount inside, near the door.

Combustible material storage (outside) (2-A):
• Hazard Lumber, wooden boxes, etc.
• Use 2000 gallon pressured water type extinguisher.
• Number Not specified by OSHA, but approximately one extinguisher for each 25,000 square feet of storage area.
• Location Mount so that travel distance from any point is not more than one hundred (100) feet.

Combustible material storage (inside) (2-A):
• Hazard Lumber, packing material, cardboard boxes
• Use 2000 gallon pressured water type extinguisher.
• Number In addition to the extinguishers required for building for the building protection, provide one more extinguisher for every five thousand (5000) square feet of area occupied by combustible material storage.
• Location Mount extinguisher so that every point within the storage area is no more than seventy five (75) feet from an extinguisher.

Flammable liquid storage (inside) (20-B):
• Hazard Gasoline and diesel tanks, drums, etc.
• Use Twenty (20) pound dry chemical extinguisher
• Number One extinguisher for each eleven hundred (1100) gallons of
flammable liquid.
• Location Mount between twenty five (25) and seventy five (75) feet from the storage area.

Flammable liquid storage (inside) (20-B):
• Hazard Small quantities of solvent, paint, etc.
• Use Twenty (20) pound dry chemical extinguisher

• Number One extinguisher for each storage area. This is in addition to the extinguishers required for general building protection.
• Location Mount between ten (10) and twenty five (25) feet from the storage area.

Flammable liquids (in use) (10-B):
• Hazard Flammable adhesives, solvent-cleaning vats, fuel fired heaters, etc.
• Use Ten (10) pound dry chemical extinguisher
• Number One extinguisher is needed within fifty (50) feet of the operation.
• If other dry chemical extinguishers are not needed for these hazards.

Gasoline and diesel pumps (20-B:C):
• Hazard Refueling trucks, etc.
• Use Twenty (20) pound dry chemical or use fifty (50) pound carbon dioxide extinguisher on wheels.
• Number One extinguisher
• Location Mount within seventy five (75) feet of the pumps.

Trucks dispensing flammable liquids (20-B:C):
• Hazard - Refueling cranes, air compressors, etc.
• Use Twenty (20) pound dry chemical. Order these extinguishers with a vehicle mounting bracket.
• Number One extinguisher on each truck
• Location Mount so it is accessible from the ground

Compressed gas cylinder storage (outside) (20B:C):
• Hazard - Propane, acetylene, etc.
• Use Twenty (20) pound dry chemical
• Number One extinguisher for each storage area, to be mounted within seventy five (75) feet. If a 20-B:C extinguisher already exists with seventy five (75) feet because of an adjacent storage area, etc., no additional extinguisher is needed for this site.

Welding and cutting operations:
• Hazard Sparks, slag, open flame, etc.
• Use - Any type of extinguisher or water hose
• Number - At least one extinguisher or water hose within seventy five (75) feet of each operation, and in the same room or area.
• Location - Existing extinguishers in the area can be used for this protection. Working at or near a combustible partition also requires fire protection on the other side of the partition.

Electrical - main supply panels - (10-B:C):
• Hazard Energized electrical parts
• Use - Fifteen (15) pound carbon dioxide extinguisher. Order the extinguisher with a non-metallic discharge horn.
• Number - Mount one extinguisher with fifty (50) feet.
• Location - If several main panels are widely separated, each panel will need a separate extinguisher.

Cranes, tower cranes, hoist engines - (5-B:C):
• Hazard Flammable liquids, electric
• Use - 20 pound dry chemical extinguisher.
• Number - One extinguisher for each piece of equipment
• Location - Mount near the operator's platform. Order vehicle mounting brackets for extinguishers on mobile equipment.

Wooden forms, scaffolds, etc. (2-A):
• Hazard Forms and scaffolding that are separated from other work areas
• such as cooling tower veils, chimney top-work platforms, etc.
• Use - 20 gallon pressured water type extinguisher.
• Number - Mount extinguishers so that one extinguisher is within seventy
• five (75) feet of any location.

Spray booths (20-B:C):
• Hazard - Flammable liquid particles. An automatic sprinkler system is required for spray booths. In addition, portable extinguishers are required.
• Use - Twenty (20) pound dry chemical or use fifty (50) pound
• Number - One extinguisher for each spray booth
• Location - Mount within twenty-five (25) feet of the spray booth.

FORKLIFT SAFETY
POWERED INDUSTRIAL TRUCKS

Applicable OSHA Standards: 29 CFR 1910.178

PURPOSE

This program contains safety requirements relating to maintenance, and use of fork trucks, tractors, platform lift trucks, motorized hand trucks, and other specialized industrial trucks powered by electric motors or internal combustion engines.

SCOPE

This program applies to all employees and subcontractors working within company controlled worksites.

GENERAL

Only trained and authorized operators shall be permitted to operate a powered industrial truck.

Modifications and additions which affect capacity and safe operation shall not be performed by the customer or user without manufacturers prior written approval. Capacity, operation, and maintenance instruction plates, tags, or decals shall be updated accordingly.

If the truck is equipped with front-end attachments other than factory installed attachments, the user shall request that the truck be marked to identify the attachments and show the approximate weight of the truck and attachment combination at maximum elevation with load laterally centered.

The user shall see that all nameplates and markings are in place and are maintained in a legible condition.

Where general lighting is less than 2 lumens per square foot, auxiliary directional lighting shall be provided on the truck.

The brakes of highway trucks shall be set and wheel chocks placed under the rear wheels to prevent the trucks from rolling while they are boarded with powered industrial trucks.

Wheel stops or other recognized positive protection shall be provided to prevent railroad cars from moving during loading or unloading operations.

Fork trucks shall not be driven up to anyone standing in front of a bench or other fixed object.

No person shall be allowed to stand or pass under the elevated portion of any truck, whether loaded or empty.

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

Do not place arms or legs between the uprights of the mast or outside the running lines of the truck.

When a powered industrial truck is left unattended, load engaging means shall be fully lowered, controls shall be neutralized, power shall be shut off, and brakes set. Wheels shall be blocked if the truck is parked on an incline.

A powered industrial truck is unattended when the operator is 25 ft. or more away from the vehicle which remains in his view, or whenever the operator leaves the vehicle and it is not in his view.

When the operator of an industrial truck is dismounted and within 25 ft. of the truck still in his view, the load engaging means shall be fully lowered, controls neutralized, and the brakes set to prevent movement.

A safe distance shall be maintained from the edge of ramps or platforms while on any elevated dock, or platform or freight car. Trucks shall not be used for opening or closing freight doors.

Only approved industrial trucks shall be used in hazardous locations.

Industrial trucks shall be used on stable grade unless designed for operation off-road.

TRAVELING

All traffic regulations shall be observed, including authorized plant speed limits. A safe distance shall be maintained approximately three truck lengths from the truck ahead, and the truck shall be kept under control at all times.

The right of way shall be yielded to ambulances, fire trucks, or other vehicles in emergency situations.

Other trucks traveling in the same direction at intersections, blind spots, or other dangerous locations shall not be passed.

The driver is required to slow down and sound the horn at cross aisles and other locations where vision is obstructed. If the load being carried obstructs forward view, the driver shall be required to travel with the load trailing.

Railroad tracks shall be crossed diagonally wherever possible. Parking closer than 8 feet from the center of railroad tracks is prohibited.

The driver is required to look in the direction of, and keep a clear view of the path of travel.

Grades shall be ascended or descended slowly.

When ascending or descending grades in excess of 10 percent, loaded trucks shall be driven with the load upgrade.

On all grades the load and load engaging means shall be tilted back if applicable, and raised only as far as necessary to clear the road surface.

Under all travel conditions the truck shall be operated at a speed that will permit it to be brought to a stop in a safe manner.

Stunt driving and horseplay shall not be permitted.

The driver is required to slow down for wet and slippery floors.

Dockboard or bridgeplates, shall be properly secured before they are driven over. Dockboard or bridgeplates shall be driven over carefully and slowly and their rated capacity never exceeded.

Running over loose objects on the roadway surface shall be avoided.

While negotiating turns, speed shall be reduced to a safe level by means of turning the hand steering wheel in a smooth, sweeping motion. Except when maneuvering at a very low speed, the hand steering wheel shall be turned at a moderate, even rate.

LOADING

Only stable or safely arranged loads shall be handled. Caution shall be exercised when handling off-center loads which cannot be centered.

Only loads within the rated capacity of the truck shall be handled.

The long or high (including multiple-tiered) loads which may affect capacity shall be adjusted.

Trucks equipped with attachments shall be operated as partially loaded trucks when not handling a load.

Extreme care shall be used when tilting the load forward or backward, particularly when high tiering. Tilting forward with load engaging means elevated shall be prohibited except to pick up a load. An elevated load shall not be tilted forward except when the load is in a deposit position over a rack or stack. When stacking or tiering, only enough backward tilt to stabilize the load shall be used.

OPERATION OF THE TRUCK

If at any time a powered industrial truck is found to be in need of repair, defective, or in any way unsafe, the truck shall be taken out of service until it has been restored to safe operating condition.

Fuel tanks shall not be filled while the engine is running. Spillage shall be avoided.

Spillage of oil or fuel shall be carefully washed away or completely evaporated and the fuel tank cap replaced before restarting engine.

No truck shall be operated with a leak in the fuel system until the leak has been corrected.

Open flames shall not be used for checking electrolyte level in storage batteries or gasoline level in fuel tanks.

MAINTENANCE OF INDUSTRIAL TRUCKS

Any power-operated industrial truck not in safe operating condition shall be removed from service. All repairs shall be made by authorized personnel.

Those repairs to the fuel and ignition systems of industrial trucks which involve fire hazards shall be conducted only in locations designated for such repairs.

Trucks in need of repairs to the electrical system shall have the battery disconnected prior to such repairs.

All parts of any such industrial truck requiring replacement shall be replaced only by parts equivalent as to safety with those used in the original design.

Industrial trucks shall not be altered so that the relative positions of the various parts are different from what they were when originally received from the manufacturer, nor shall they be altered either by the addition of extra parts not provided by the manufacturer or by the elimination of any parts. Additional counterweighting of fork trucks shall not be done unless approved by the truck manufacturer.

Industrial trucks shall be examined before being placed in service, and shall not be placed in service if the examination shows any condition adversely affecting the safety of the vehicle. Such examination shall be made at least daily. Where industrial trucks are used

on a round-the-clock basis, they shall be examined after each shift. Defects when found shall 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 shall be removed from service and not returned to service until the cause for such overheating has been eliminated.

Industrial trucks shall be kept in a clean condition, free of lint, excess oil, and grease. Noncombustible agents should be used for cleaning trucks. Low flash point (below 100 deg. F.) solvents shall not be used. High flash point (at or above 100 deg. F.) solvents may be used. Precautions regarding toxicity, ventilation, and fire hazard shall be consonant with the agent or solvent used.

TRAINING

All operators will be trained on the contents of this program:

- Before initial assignment;
- At least annually thereafter;
- When an operator is involved in an incident with a fork truck;

All operators must be certified through the company Powered Industrial Truck - Forklift Certification Program.

HEARING CONSERVATION PROGRAM

Applicable OSHA Standards: 29 CFR 1910.95(c)

PURPOSE

This is a developed hearing conservation program to comply with CFR 1910.95 and to provide guidelines to protect employees from potential hearing loss.

SCOPE

This program will establish the minimum hearing protection requirements for employees.

RESPONSIBILITIES

Contractors will be responsible for the enforcement and disciplinary action resulting from violation or failure of assigned persons to implement the requirements of this program.

The Director of Safety or designee will be responsible to provide for the monitoring of work activities to assure compliance to the requirements of this program.

The primary responsibility for the implementation of the requirements of this program will rest with the Supervisor.

REQUIREMENTS

The standard permits an unprotected, 8-hour permissible exposure limit (PEL) of 90 decibel-A scale (dBA) for continuous noise. Higher unprotected exposure is allowed provided there are sufficient periods of noise exposure low enough to maintain a PEL below 90 dBA. The maximum allowable exposure level is 110 dBA for thirty minutes. Unprotected exposures above 110 dBA are not permitted regardless of duration.

OSHA Continuous Noise Exposure Limits Equaling 100% Dose – Table G-16

OSHA PEL, dBA	Maximum Duration Minutes (hrs.)
85	690 (16)
87	720 (12)
90	480 (8)
92	360 (6)
95	240 (4)
97	180 (3)
100	120 (2)
102	90 (1½)

105	60	(1)
110	30	(1/2)
115	15	(1/4)

The PEL is based on 100% dose of the allowed exposure. Table G-16 shows the noise level and corresponding time limits that result in a dose of 100%. 92 decibels for 8 hours is the same dose as 110 dBA for two hours.

The standard defines impact or impulse noise as noise with the duration of one second or less. The PEL for impact noise is 140 dBA, peak sound level.

The OSHA standard requires that employees be included in a hearing conservation program if their full shift exposure exceeds the action level by 50%. Employees working 12 hour shifts exceed the action level with a 12 hour average noise exposure of 82 dBA. Employees working 12 hour shifts exceed the permissible exposure limit of 100% dose at 87 dBA.

HEARING PROTECTION

Hearing protection devices are available to employees who are exposed to noise above the action level. Employees who have shown a standard threshold shift measured on their annual audiogram must wear hearing protection at all times in the workplace. Hearing protection must be worn when an employee is working in an area above 90 dBA.

There are two types of hearing protection devices available. These are the circumoral device, better known as an ear-muff, and the insert device. Each type provides a different degree of protection and the employee must be properly trained in its use to obtain the maximum protection.

A. Circumoral or "Ear Muffs"

Circumoral hearing protection seals the area around the entry to the ear canal by means of a liquid or foam filled cushion and has a band connecting each muff. Some models may also be attached to hard hats. This type of protection is easily donned and requires minimal training. It does not require fitting. They provide noise attenuation in a range of 15-25 dBA. The effectiveness of these devices is dependent on the seal around the ear. Temple bars on safety glasses can reduce the protection factor of ear muffs. One advantage of ear muffs is that they may be used in conjunction with insert type hearing protectors to maximize protection.

B. Insert or "Ear Plugs"

Insert devices or "plugs" are available in pre-formed or user-formed styles and may be disposable or non-disposable. Insert plugs provide noise reductions in the

20-30 decibel range. These devices are inserted into the ear canal by the user and their effectiveness depends on proper insertion. Providing training to the user and practice by the user are imperative to insuring a good fit to insure maximum protection.

AUDIOMETRIC TESTING

Audiometric testing is a means of determining if an employee's hearing is being adversely affected by noise exposure in the workplace.

A. Baseline Audiogram (when applicable) - will be established against which subsequent audiogram can be compared. This should be accomplished at time of hiring.

Audiometric testing is to establish a baseline, which must be preceded by at least 14 hours without exposure to high noise levels. Hearing protection may be used prior to the audiometric test to insure the employee is not exposed to high noise levels.

An annual audiogram may be substituted for the baseline audiogram when in the judgment of the audiologist or physician making the evaluation:

1. The standard threshold shift revealed by the audiogram is persistent; or

2. The hearing threshold shown in the annual audiogram indicates significant improvement over the baseline audiogram.

B. Annual Audiometric Testing (when applicable) - results should be compared to the baseline to identify any changes in an individual's hearing threshold. If the audiogram shows a 10 decibel reduction of hearing capability at 2000, 3000, or 4000 Hertz, a repeat audiometric test should be done within 30 days. This 10 dBA reduction at these frequencies is referred to as a "Standard Threshold Shift" (STS).

A repeat audiogram that shows a permanent threshold shift requires that a full assessment of the hearing loss be completed. Unless a physician has determined that the STS is not work related or aggravated by occupation noise exposure, the employer should insure that:

1. The employee is notified in writing within 21 days of the determination that the STS is permanent.

2. Employees should be trained in the use of hearing protection and required to use the protection devices.

3. The employee should be referred for a clinical audiological or otological

examination if additional testing is needed or if Contractors suspects a medical condition is caused or aggravated by wearing hearing protection.

EMPLOYEE TRAINING AND INFORMATION

Hearing conservation training should be given to all employees. Training should consist of information on the physical nature of sounds, the effects of noise on the ear and the proper use of hearing protection. Employees that work in high noise areas (>85 dBA) should also be trained for a basic understanding of noise monitoring, work areas with high noise levels, and the purpose of audiometric testing.

Each employee that should be required to work in an area above the action level must complete and obtain an acceptable score on the Hearing Conservation Exam.

A. Record keeping

This exam must be maintained in the employee training files at the Corporate Office.

Noise exposure monitoring records should be retained for at least two years. Audiometric test results should be retained for the duration of the employee(s) employment plus 30 years.

B. Access to Records

Employees may have access to the noise exposure monitoring records and audiometric test results under the OSHA standard "Access to Employee Exposure and Medical Records", 29 CFR 1910.20. For access to these records, a written request for the records must be made to the Corporate Safety Department. Written request form will be distributed upon request.

ILLUMINATION

Applicable OSHA Standards: 29 CFR 1926 Subpart D

PURPOSE

The purpose of this policy is to comply with the OSHA standard to ensure work areas have sufficient lighting.

SCOPE

This program applies to all of our controlled worksites where one of our, or a subcontract employee may be occupationally exposed to Illumination hazards.

GENERAL WORKING CONDITIONS

General Construction areas, ramps, runways, corridors, offices, shops, and storage areas shall be lighted to not less than the minimum illumination intensities listed in Table D-3 while any work is in progress:

TABLE D-3 - MINIMUM ILLUMINATION INTENSITIES IN FOOT-CANDLES

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

The lighting intensity shall be measured at the task/working surface in the plane in which the task/working surface is present. Lights shall, so far as possible, be placed so that they will not shine in the eyes of employees.

TEMPORARY LIGHTS

Shall meet the following requirements:

Temporary lights shall be equipped with guards to prevent accidental contact with the bulb, except that guards are not required when the construction of the reflector is such that the bulb is deeply recessed.

Temporary lights shall be equipped with heavy-duty electric cords with connections and insulation maintained in safe condition. Temporary lights shall not be suspended by their electric cords, unless cords and lights are designed for this means of suspension. Splices, which have insulation equal to that of the cable, are permitted.

Cords shall be kept clear of working spaces and walkways or other locations in which they are readily exposed to damage.

Exposed non-current-carrying metal parts of temporary lights furnished by the employer shall be grounded either through a third wire in the cable containing the circuit conductors or through a separate wire which is grounded at the source of the current. Grounding shall be in accordance with the requirements of 1915.132(b).

Where temporary lighting from sources outside the vessel is the only means of illumination, portable emergency lighting equipment shall be available to provide illumination for safe movement of employees.

Employees shall not be permitted to enter dark spaces without a suitable portable light. The use of matches and open flame lights is prohibited. In non-gas free spaces, portable lights shall meet the requirements of 1915.13.

Temporary lighting stringers or streamers shall be so arranged as to avoid overloading of branch circuits. Each branch circuit shall be equipped with over-current protection of capacity not exceeding the rated current carrying capacity of the cord used.

GLOBAL HARMONIZATION

Applicable OSHA Standard: 29 CFR 1910.1200, and 29 CFR 1926.59

PURPOSE

The purpose of this program is to ensure that the hazards of all chemicals produced or imported are evaluated, and that information concerning their hazards is transmitted to company and our employees.

SCOPE

This applies to any chemical, which is known to be present in any of our workplaces in such a manner that employees may be exposed under normal conditions of use or in a foreseeable emergency.

GENERAL

The following written Global Harmonization System (GHS) is to be implemented for our personnel. The originals will be kept on file by the Corporate Office. The Safety Director will be responsible for ensuring the program is current and enforced.

A copy of this program is to be made available to an employee(s) upon hiring, and a copy will be supplied to any employee(s) upon written request.

The Safety Director will be contacted when a copy of the program is needed or required.

The program will be updated when new chemicals or hazards are introduced into the working environment, and reviewed annually.

The Purchasing Manager will check all chemical purchase requests to be sure a statement requesting a Safety Data Sheet (SDS) appears on the purchase request before being processed.

CONTAINER LABELING

The tool room supervisor/attendant will be responsible for all containers of hazardous chemicals entering the workplace and will assure that the chemical containers are properly labeled with:

- Chemical name;
- Hazard warnings; and
- Name and address of the manufacturer,
- Importer, or responsible party.
- HMIS labels properly marked

No container(s) will be used until it has been checked, by the tool supervisor or competent person and an SDS is reviewed by Safety dept. and in file. If the chemical is to be transferred to a separate container, the tool attendant will ensure that the new container is properly labeled; i.e., that all secondary containers are labeled with an extra copy of the original manufacturer's label or with generic labels which have a block for identity and blocks for the hazard warning. For help with labeling, please contact the Site Safety Supervisor/Representative. The Vice President and Safety Director will review the labeling system annually and update as required.

The Site Safety Supervisor/Representative and craft foreman will ensure that the contents of material has properly identified. The foreman will also inform employees of the hazards associated with chemicals contained in material within the work areas.

SAFETY DATA SHEETS (SDS'S)

The purchasing faction will be responsible for obtaining SDS's. The field clerical staff will maintain the SDS system at the construction site. The Site Safety Supervisor/Representative will review incoming data sheets for new and significant health/safety information and will ensure that the new information is given to the affected employees. Copies of all SDS sheets will be kept by the field clerks. The Site Safety Supervisor/Representative will review each SDS annually for accuracy and completeness.

The SDS system shall include:

- Current master inventory list of all SDS's indexed alphabetically and by vendor.
- The identity used on the SDS shall be the same as used on the container label.
- The chemical and common name of all ingredients determined to present a hazard shall appear on all SDS.
- The SDS shall list:
    - The physical and chemical characteristics of the chemical including vapor pressure, flash point, etc.
    - The fire, explosion, and reactivity hazard(s) of the chemical mixture including the boiling point, flash point and auto ignition temperature.
    - Health hazards of the chemical mixture including signs and symptoms of exposure and medical conditions recognized as aggravated by exposure with primary route(s) of entry.
    - Permissible exposure limit (PEL) or any other exposure limit used or recommended by the manufacturer, importer, or employer.
    - Whether on carcinogen listing (NTP) or has been found to be a potential carcinogen (IARC listing) or by OSHA.
    - Control measures including fire, engineering, proper personal protective equipment.

- General precautions for safe handling and use including protective measures during repair and maintenance and procedures for clean-up of spills and leaks.
- Emergency and first aid procedures.
- Date prepared or changed.
- Name, address, telephone numbers of manufacturer, importer, or responsible party to call in an emergency.

The SDS will be available for use by employees. Each Project Superintendent will keep a current and up-to-date copy of the program on file. New chemicals will not be used until a SDS has been obtained and reviewed for health hazards by the Site Safety Supervisor/Representative or Safety Director-Corporate.

EMPLOYEE TRAINING AND EDUCATION

Before starting work, the respective supervisor/foreman of a new employee will go over their copy of the each SDS applicable to their job, i.e. handouts, video tapes, etc. Before any new chemical is used, all effected employees will be informed of its use. Employees will

Be instructed on safe use, and will be trained on hazards associated with the new chemical. All employees will attend additional training, as appropriate, to review the SDS. Appropriate reference material will also be discussed during the training session(s).

The minimum orientation and training for a new employee is as follows:

- An overview of the requirements contained in the Hazard Communication standard.
- Chemicals present in their workplace operations and this office.
- Location and availability of the written GHS.
- Physical and health effects of the hazardous chemicals listed on the inventory list of this program.
- Methods and observation techniques used to determine the presence or release of hazardous chemicals in the work area.
- How to lessen or prevent exposure to these hazardous chemicals through usage of control/work practices and personal protective equipment.
- Steps taken by company, to lessen or prevent exposure to the chemicals listed on the inventory list.
- Emergency procedures to follow if exposed to any chemicals, and Location of SDS files and location of hazardous inventory list.

Prior to a new chemical being introduced into any section of the workplace, each employee will be given information and training as outlined above and/or as outlined on the attached Employee Training Guidelines by the Site Safety Supervisor/Representative or Project Superintendent. SDS must be available prior to use.

After attending the training class, each employee will sign a form to verify that they attended the training, that the written GHS is made available for review, and that he/she understands the GHS.

Before entering an establishment, the Site Safety Supervisor/Representative will ascertain what hazards employees may be exposed to and then take appropriate action to protect the employees. If the employee has any question about what protection is needed, they should contact their foreman/Site Safety Supervisor/Representative immediately.

NON-ROUTINE TASKS

Before any non-routine task is performed, employees must be advised and/or they must contact the Site Safety Supervisor/Representative for special precautions to follow and the foreman shall inform any other personnel who could be exposed.

In the event that such tasks are required, the Site Safety Supervisor/Representative or Project Superintendent/designee will provide the following information about such activity as it relates to the specific chemicals expected to be encountered:

- Specific chemical name(s) and hazard(s).
- Protective personal equipment required and safety measures to be taken.
- Measures that have been taken to lessen the hazards including ventilation, respirators, presence of other employee(s), and emergency procedures.

OTHER PERSONNEL EXPOSURE: (CONTRACTORS/SUBCONTRACTORS)

It will be the responsibility of the Site Safety Supervisor/Representative to provide other personnel or outside contractors or subcontractors with the following information as follows:

- Hazardous chemicals to which they may be exposed to while in the workplace
- Measures to lessen the possibility of exposure.
- Location of SDS for all hazardous chemicals; and
  Procedures to be follow if they are exposed.

The Project Superintendent/Site Safety Supervisor/Representative will also be responsible for contacting each contractor or subcontractors before work is started to gather and disseminate any information concerning chemical hazards the contractor or subcontractors bringing into the workplace, and vice versa.

SDS INVENTORY

NUMBER	CHEMICAL NAME	STREET NAME
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LADDERS

Applicable OSHA Standards: 29 CFR 1910.25, 1926.1053

PURPOSE

This program is to ensure the safe use, care and serviceability of portable ladders used in the workplace.

SCOPE

This program applies to all employees and subcontractors working within Contractor controlled worksites.

TYPES OF LADDERS

Just as jobs and people are different, so are ladders. Most workers don't realize that factory built ladders are classified by the weight that they are designed to hold. Ladder types include:

Type III	lightweight, holds a maximum of 200 pounds.
Type II	holds a maximum of 225 pounds.
Type I	holds a maximum of 250 pounds.
Type IA	holds up to 300 pounds.

Be sure to use a ladder that is strong enough to support your weight plus your tools and clothing.

Also, the material the ladder is made of should be taken into consideration. It is recommended that metal ladders not be used around energized electrical circuits or equipment or in places where they may come in contact with such circuits. If the ladder is fiberglass, avoid extreme heat; if it is wood, never paint it -- this could hide serious defects.

CARE OF LADDERS

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

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

Frayed or badly worn rope shall be replaced.

Safety feet and other auxiliary equipment shall be kept in good condition to insure

proper performance.

Before each use, employees shall inspect the ladder and those which have developed defects shall be withdrawn from service for repair or destruction and tagged or marked as "Dangerous, Do Not Use."

Rungs should be kept free of grease and oil.

Ladder components shall be surfaced so as to prevent injury to an employee from punctures or lacerations, and to prevent snagging of clothing.

Wood ladders shall not be coated with any opaque covering, except for identification or warning labels which may be placed on one face only of a side rail.

USE OF LADDERS

Portable rung and cleat ladders shall, where possible, be used at such a pitch that the horizontal distance from the top support to the foot of the ladder is one-quarter of the working length of the ladder (the length along the ladder between the foot and the top support).

The ladder shall be so placed as to prevent slipping, and it shall be lashed, or held in position. Ladders shall not be used in a horizontal position as platforms, runways, or scaffolds.

Portable ladders shall be so placed that the side rails have a secure footing.

Ladder rungs, cleats, and steps shall be parallel, level, and uniformly spaced when the ladder is in position for use.

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

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

Ladders with broken or missing steps, rungs, or cleats, broken side rails, or other faulty equipment shall not be used; improvised repairs shall not be made.

A metal spreader or locking device shall be provided on each stepladder to hold the front and back sections in an open position when the ladder is being used.

Short ladders shall not be spliced together to provide long sections.

Ladders made by fastening cleats across a single rail shall not be used.

Ladders shall not be used as guys, braces, or skids, or for other than their intended purposes.

Tops of the ordinary types of stepladders shall not be used as steps.

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

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

Ladder should be used to gain access to a roof unless the top of the ladder shall extend at least 3 feet above the point of support, at eave, gutter, or roofline.

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

When ascending or descending, the climber must face the ladder.

Portable ladders shall have nonconductive siderails if they are used where the employee or the ladder could contact exposed energized parts.

Metal ladders shall not be used.

Except when portable ladders are used to gain access to fixed ladders (such as those on utility towers, billboards, and other structures where the bottom of the fixed ladder is elevated to limit access), when two or more separate ladders are used to reach an elevated work area, the ladders shall be offset with a platform or landing between the ladders.

Each employee shall use at least one hand to grasp the ladder when progressing up and/or down the ladder.

An employee shall not carry any object or load that could cause the employee to lose balance and fall.

TRAINING

Contractor shall provide a training program for each employee using ladders and stairways, as necessary. The program shall enable each employee to recognize hazards related to ladders and stairways, and shall train each employee in the procedures to be followed to minimize these hazards.

The Project Superintendent shall ensure that each employee has been trained by a

competent person in the following areas, as applicable:

- The nature of fall hazards in the work area;
- The correct procedures for erecting, maintaining, and disassembling the fall protection systems to be used;
- The proper construction, use, placement, and care in handling of all stairways and ladders;
- The maximum intended load-carrying capacities of ladders and - The standards contained in 1926.1053 Subpart X.

Retraining shall be provided for each employee as necessary so that the employee maintains the understanding and knowledge acquired through compliance with this guideline.

LOCKOUT / TAGOUT

Applicable OSHA Standards: 29 CFR 1910.147

PURPOSE

The purpose of this policy is to comply with the OSHA standard when working on equipment from injury caused by unexpected release of stored energy and any accidental start – up.

SCOPE

This program applies to all of our controlled worksites where one of our, or a subcontract employee may be occupationally exposed to an unexpected release of stored energy and any accidental start – up.

DEFINITIONS

Acceptance - The acknowledgment by the persons performing tasks that all isolating devices that may expose them to an unexpected release of energy are properly positioned and that all hazards associated with the job have been addressed and communicated by the owner.

Addendum - A shortened term for the Red Tag Master Addendum, a form on which all testing within the isolated system are recorded.

Cable Tie - A non-reusable, hand attached, self-locking device with a minimum breaking strength of no less than fifty pounds. (50 lb.) It is used to attach red tags to isolating devices.

Crew Contact - A person that has the responsibility of being the focal point of communication for a work crew.

Energy Source - Any source of energy that can be harmful to personnel, including chemical, electrical, thermal, mechanical, pneumatic, hydraulic, gravity, and radioactive.

Exclusive Control - When an individual performing a task is in continual attendance of, has visual contact with, and is in arms length of the isolating device(s).

Individual Tag - Lock and/or tag to be attached by an individual that can only be removed by that individual, except for provisions set forth in this document.

Isolating Device - A physical device that prevents the transmissionor release of energy or materials. Examples include slide gates, slip blinds air gaps, valves, physical blocks, and

electrical disconnects.

Isolation Procedure - A documented energy control procedure which must contain, as a minimum:

- The intended use of the procedure.
- Steps for shutting down, isolating, blocking, and securing the isolated system.
- Steps for placing, removing, and transferring lockout/tagout devices, and the responsibility for them.
- Procedures for testing the isolated system to verify the effectiveness of the energy control and lockout/tagout procedures.

Job Representative - The person representing the workers performing the job. They assure that the requirements of this standard are met, including sufficient isolation. (A Job Representative can be a crew contact, a worker, or a supervisor.)

Lockout - The process of securing an isolating device to prevent accidental energizing, by using a lock or bolting. Lockout can also be used to provide "one-plus" protection on devices that would not normally be considered isolating devices.

"One-Plus Lockout/Tagout" - The requirement of an additional means of isolation or restraint, whenever tagout is used without locks, to prevent inadvertent operation of an isolating device. "One Plus" requires that two separate, unrelated actions must occur to defeat the source isolation.

Operations Representative - A person representing company operations that is qualified to isolate, lock and/or tag equipment. This person must have a full and clear understanding of the work to be performed.

Operations Lock and/or Tag - The first lock and /or tag to be attached to, and the last lock and/or tag to be removed from an isolating device by a qualified operations representative.

Owner - An individual who is in control of a specific piece of equipment or process.

Red Tag - The tag used for identifying all isolating devices in use for energy control. All locks will have red tags unless exempted by this standard. The tag will be of standardized design.

Red Tag Master - A document that is used to control an isolated system and provide information on that system.

Red Tag Master Addendum - A document that describes any equipment testing that may release energy within the isolated system. It can also be used to describe a minor scope change that will take place during a job.

Release - Certification by the person performing work that they have completed their task and will no longer be working on the isolated equipment.

Red Tag Master Roster - A form which contains individual "Acceptance" and "Release" for each person that will be working on isolated equipment under the Red Tag Master.

Tagout - The attachment of a standardized Red Tag to an isolating device. These tags indicate that the equipment must not be operated until the Red Tag is properly removed.

Worker - An individual directly responsible for an operation, service or maintenance task.

LOCKOUT/TAGOUT SPECIFICATIONS

Locking and/or tagging a piece of equipment involves securing an isolating device to prohibit repositioning of the isolating device. There are certain specifications that must be followed when a piece of equipment is locked and/or tagged out.

For the purpose of tagging equipment, a Red Tag shall be affixed to each isolating device.

When line blinds and other isolating devices are used, they must be designed to adequately isolate the maximum amount of energy possible for the system being isolated.

In the case of slip blinds, they must be made visible, distinguishable from orifice plates, easily identifiable, compatible with the process materials, and capable of holding a cable tie for the purpose of attaching a Red Tag.

Red Tags must be legible.

Red Tags shall be attached to all isolating devices with a cable tie. In the case of locks, the Red Tag may be attached to the lock or shackle.

A Red Tag numbering system must be used, with each Red Tag number being unique. The Red Tag number must be recorded on the Red Tag when the Master System is used.

No Red Tags should be used longer than 90 days. Periods, which may exceed 90 days, shall require additional considerations such as permanent isolation or periodic replacement of Red Tags.

All Individual Red Tags shall be identified prior to installation. A qualified person shall install all Individual Red Tags. They must be removed before any Operations Tags.

Prior to any work being performed on an isolated system, there shall be a written procedure.

Any physical device that may be inadvertently repositioned must be made safe using the "One Plus Lockout/Tagout" system. "One Plus" requires an additional means of isolation or restraint whenever tagout is used without locks.

EXCEPTIONS:

While there are specifications for every lock and/or tag procedure, there are a few exceptions. These exceptions can include:

- Minor tool changes and adjustments. When routine, repetitive tool changes and adjustments that are integral to the use of the equipment for production take place during normal productions operations they are not subject to the Lockout/Tagout procedures outlined in this standard.

- Minor servicing operations. If minor servicing activities are routine, repetitive and integral to the use of the equipment for production they are not subject to the Lockout/Tagout standard. The work to be performed must be done using different measures which prevent accidental activation or moving of the device. These measures can include push buttons that have to be twisted and pulled out to activate, key-locked switches, or interlocks.

- Exclusive control. If a worker has exclusive control over a piece of equipment it means that the worker is in continual attendance of, has visual contact with, and is in arms reach of the isolating device.

- All Exceptions have to be approved by Form Works, Inc. Safety Department and shall have a documented safe operating procedure.

RESPONSIBILITIES

OWNER RESPONSIBILITIES:

An individual who is in control of a specific piece of equipment or process is considered the owner.

As a minimum, the Owner must:

- Establish an isolation procedure for equipment. The steps that need to be taken to isolate the equipment, including who is responsible for each step, are a part of the isolation procedure.

- Specify and buy lockable equipment when available. The owner determines what type of new equipment is necessary to successfully administer a lock and/or tag.

OPERATIONS REPRESENTATIVE RESPONSIBILITIES:

The Operations Representative for a lockout/tagout procedure is the person representing plant operations who is qualified to isolate, lock and/or tag equipment. This representative must have a full and clear understanding of the work to be performed. As a minimum the Operations Representative for a Lockout/Tagout Procedure must:

- Attach the operations locks and/or tags on equipment requiring isolation. The Operations Representative is responsible for not only making sure that the locks and/or tags are on isolating devices, but also that the right locks and/or tags are used. This includes using "One-Plus" when necessary.

- Physically verify that residual energy and/or materials have been relieved, drained, disconnected, restrained or otherwise rendered safe. This verification can take place through inspections and testing.

- Review the condition of equipment with Job Representative and workers assigned to do the job before any work is started and assure proper accountability is in place. The Operations Representative is responsible for making sure that the workers know what’s going on, and what each of their roles in the lockout/tagout procedure is.

- Address any concerns expressed by the workers and/or Job Representative regarding equipment isolation and preparation. The Operations Representative shall follow up concerns expressed by workers.

- Reviewing all addenda and communicate to Job Representative. The Operations Representative is responsible for communicating all information about the job, including any changes or additions to the procedures, to the Job Representative.

- Verify the "Release" and removal of locks and/or tags after the work is completed, and that equipment is returned to a safe operable condition.

- Notify personnel in the area that equipment is being placed back into service. This notification can be done over the radio, in the logbooks or in person.

JOB REPRESENTATIVE RESPONSIBILITIES:

The person representing the workers performing the job is the Job Representative. It is the Job Representative's responsibility to ensure that the requirements of the Lockout/Tagout Safety Standard are met. A Crew Contact, a worker, or an operator can all be Job Representatives, however, the Job Representative cannot be the same person as the Operations Representative for any Red Tag Master. As a minimum, the Job Representative must:

- Review scope of job with the Operations Representative. The scope of the job includes the dates that the job will take place, a description of the job, and the reason that the job is being done.

- Resolve any differences with Operations Representative as they apply to the isolation of the systems. If the Job Representative has a concern about the isolation of the system, the differences must be brought to the attention of the Operations Representative and resolved.

- Review, verify, and confirm isolation of the system (by signing the Master). Once the Job Representative has read and signed the Red Tag Master, the isolation of the system is confirmed.

WORKER RESPONSIBILITIES:

Any individual who is directly responsible for an operation, service or maintenance task falls into the category of Worker. As a minimum the Worker must:

- Review the status of the equipment prior to signing "Acceptance" of the job (as in the Red Tag Master System), and/or attaching individual locks and/or tags. Signing "Accepted" or attaching locks and/or tags means the Worker is aware of the isolation that is to take place and is in agreement with it.

- Communicate any concerns regarding equipment isolation and preparation to the Operations Representative. This communication must take place before a safe work permit is issued and work begins.

- Notify the Operations Representative of completion of work, any changes in job scope, or identification of any new hazards. The Worker must communicate with the Operations Representative concerning all aspects of the job.

- Sign "Release" for the Master System and/or remove individual locks and/or tags. This indicates completion of assigned tasks or intention not to work on the system.

- Return the equipment to a safe operable status relative to the work that was performed. (Replacing guards, housekeeping, etc.)

CORE LOCKOUT/TAGOUT PROCEDURE

The Core Lockout/Tagout procedure is common to all lockout/tagout procedures. These common steps can be used to achieve 100% control and 100% accountability of all-isolating devices and personnel. As a common base for all other lockout/tagout procedures, personnel involved should complete their required steps in the order given:

OPERATIONS:

- Establishes isolation procedure. (Master or Individual)
- Creates tag location listings and completes Operations Red Tags.
- Isolates the system.
- Verifies and tests isolation, and attaches operations locks and/or tags.
- Reviews jobs to be performed with Job Representative or Workers.
- Issues addenda as needed.

JOB REPRESENTATIVE: (Worker is Job Representative if the Individual System is used.)

- Verifies isolation.
- Reconciles any difference and updates tag location listing with Operations Representative.

WORKER:

- Reviews isolation, signs "Acceptance" if the Master System is used, and, if desired, attaches Individual Tags.
- Completes a tag location listing if Individual Tags are to be used.
- Obtains Safe Work Permit.
- Begins work.
- Initiates Addendum if needed.
- Returns completed Safe Work Permit.
- Signs "Release" if Master System is used.
- Removes and signs Individual Tags.

OPERATIONS:

- Removes and signs Operations Tags.
- Reconciles Tags.
- Makes equipment operable.

INDIVIDUAL LOCKOUT/TAGOUT

The Individual Lockout/Tagout System requires that every person working within the isolated system attach his or her Individual lock and/or tag to each isolating device. The Individual System is mandatory for simple jobs. When this system is used the following rules must be followed:

- The Operations Representative must fully complete all information requested on the Red Tag. Once all of the information has been filled out, the

- Operations Representative is required to attach operation locks and or tags to each isolating device. After the Red Tags have been attached, the Operations Representative lists all attached tag numbers and their location. This is stored in a central location.

- Each Worker shall complete a required information on the Red Tag. Each worker is required to attach and Individual lock and/or tag to all appropriate isolating devices that have an Operations Tag attached. After the Red Tags have been attached, the worker must list all tag numbers and locations. This list must be displayed in a central location.

- After completing the work, the worker(s) must remove their locks and/or tags and fully reconcile with the Red Tag Location Listing. If the worker cannot account for all Red Tags, this must be brought to the attention of the Operations Representative. Successful removal of all Red Tags attached by the Worker must be noted on the Safe Work Permit.

- The Operations Representative removes the Operations locks and/or tags. The Red Tags must be signed to identify who removed them. The Operations Representative must have full reconciliation with the location listing prior to putting equipment back into service.

- The Operations Representative documents the reconciliation, removal and completion of the Lockout/Tagout by signing the "Tags Removed" section of the Red Tag Master. Any deficiencies found should be addressed promptly. The Red Tags must be retained for seven (7) days after the completion of the review.

Note: Troubleshooting or testing of equipment may require that the equipment be energized. If this is the case, a Red Tag Addendum must be used and all affected

workers must be notified prior to testing.

LOCKOUT/TAGOUT MASTER SYSTEM

Jobs that are too complex to be managed under the Individual System must use the Red Tag Master System. This system consists of four parts:

RED TAG MASTER:

- The Red Tag Master is the document that is used to control an isolated system and provide information on the system. When a Red Tag Master is used the following rules must be followed:

- One Red Tag Master must be completed for each system that is to be isolated. The attachment of locks and/or tags to isolating devices is the responsibility of the Operations Representative. All Red Tag Masters must be displayed in a central location.

- The location of all Red Tags (including Individual), locks, and line blinds must be listed on, or attached to, the Red Tag Master.

- The Red Tag Master number must be a documented unique number and not re-used within the department, or the job site.

- The use of an addendum must be noted on the Red Tag Master. Minor scope changes that may occur due to unforeseen circumstances must be communicated to all workers covered by the Red Tag Master. A description of the scope change, and "Acceptance" by the crew contact of the scope change must be recorded on the Red Tag Addendum. Multiple scope changes that have taken place within the isolated system, or major scope changes will require that a new Red Tag Master be issued.

- The Red Tag Master must list each crew that will be working on the isolated system and the task they will perform. Prior to any work being done, all workers must sign "Acceptance" on the Red Tag Master or Crew Roster to indicate that they fully understand the job to be performed and that they have reviewed, understood, and approved the isolation of the equipment. Once any worker has signed "Acceptance", Operations can no longer alter or remove Red Tags or test the system without using the Addendum or having all workers "Release" the system.

- A Crew Roster may be used as an extension of the master when additional space for signatures is required. In this case, the crew contact must sign the Red Tag Master and be identified on the Roster as the crew contact. All crewmembers must also sign the Crew Roster.

- A listing of all locks and/or tags must be maintained in a central location with the Red Tag Master.

- After each job is completed, all Red Tags will be accounted for, signed, "removed by," matched with the Red Tag Master and reviewed for accuracy. The crews contact whom closes the Crew Roster first makes sure that all personnel who have signed "Acceptance" on the Roster have also signed "Released". The crew contact then either writes "CLOSED" across the Roster or draws a large "X" through the bottom section of the Roster to indicate that the Roster is closed. Finally, the crew contact sings his individual "Release" on the Red Tag Master.

Any discrepancy in the reconciliation of the Red Tags must be addressed promptly. The Red Tag Master and associated Red Tags must be retained for seven days after the completion of the review.

RED TAGS/LOCKS:

Red Tags are to be used for identifying all isolating devices in use for energy control. When Red Tags/Locks are used, the following rules must be followed:

- Operations Tags and/or locks must not be removed until all workers have signed "Release" on the Red Tag Master and or the Red Tag Roster and removed any Individual Tags. The removal of Operations tags must be the last operation prior to putting the equipment back into service.

- Workers may attach their Individual locks and/or tags to isolating devices. All Individual Tags must be identified as such, and the location of all locks and/or tags must be recorded on a location listing with the Red Tag Master.

- All operating units must have a procedure to account for all keys.

- Red Tags cannot be altered, removed, or any system tested without using the Red Addendum. The addendum is used to communicate all activity once the workers have signed "Acceptance" on the Red Tag Master.

- All Red Tags must be retained with the Master seven days after completion of work.

RED TAG MASTER ADDENDUM:

The Red Tag Master Addendum is used for recording tags that are added or removed from an already isolated system or those temporarily removed for testing of equipment. When the Red Tag Master Addendum is used, the following rules must be followed:

- The Addendum can be used only when authorized by an Operations Representative in conjunction with either a Job Representative or a Crew Contact. The Operations Representative and either the Job Representative or Crew Contact are responsible for the accurate completion of the form. If the Operations Representative authorizes the Addendum and a Crew Contact, then the Job Representative must be notified prior to the job task being performed.

- The Addendum must be used in cases where it is desirable to test certain equipment prior to full system clearance. (pump rotation, etc.). Operations may temporarily remove one or more tags to perform this check or position change when accompanied by a qualified person from the crew performing the work. In all cases, it will require that the workers present at the work site covered under the Red Tag Master be notified. This notification will include information on the nature of the Addendum, status of equipment, and duration of the test. Before any work interrupted by the Addendum may continue, the test must be completed in its entirety. The system must be returned to the safe pre-check condition.

- The Addendum must be displayed with the Red Tag Master.

RED TAG MASTER ROSTER:

The Red Tag Master Roster contains individual "Acceptance" and "Release" for each person that will working on isolated equipment under the Red Tag Master. When using the Red Tag Master Roster the following rules must be observed:

- Prior to starting work, each person who will be working on the isolated system that may be affected by the addition or removal of Red Tags must sign "Acceptance" on the Roster. The Crew Contact is responsible for making sure that all workers have signed the Roster. The Crew Contact must be identified on the Roster.

- The Roster must be attached to the Red Tag Master.

- There will only be one Roster per Crew Contact working under a given Master. Workers may sign onto the Roster at any time as long as the Crew Contact has not closed the Roster and signed "Release" on the Master. Prior to beginning work, the workers must have specific details of the job to be performed and understand the isolation procedure through the use of the Safety Work Permit. It is the Crew Contact's responsibility to make sure all workers are on the Red Tag Master Roster.

- After prior agreement with Operations, workers are not required to "Release" the system until their task is complete, even if the task crosses shifts.

- Individuals who have attached their Individual locks and/or tags must sign "Accepted" and "Released" on the Red Tag Master Roster. Individual locks and/or tag numbers and the locations must be recorded and located with the Red Tag Master.

TAG AND/OR LOCK REMOVAL FOR UNAVAILABLE WORKER

Procedures for the removal of locks and/or tags when an individual has failed to sign off of a completed job, or remove their individual locks and/ or tags, must include:

- Some form of verification that the individual is not at the facility. This verification should include contacting the supervisor.

- Attempted contact of the individual for verbal "Release". If release is obtained, only the person receiving the release can remove the lock and/or tag.

- If the employee cannot be contacted:

    1. Verify that the system is safe for removal or Red Tags and /or Locks.

    2. Approval by the Owners Representative or his documented designee is required before work can be released for that individual employee who failed to release or remove locks/tags.

    3. Notify the individual upon his or her return to the facility that locks and/or tags have been removed.

AUDITS

An audit is a formal examination or review. As a minimum, the procedures listed below must be followed:

- At least annually, there will be audits of compliance at the Corporate level for this standard. This audit will be documented.

- Interviews of all persons around or performing a job task must be conducted. These interviews will be documented.

- Audits must include a representative sample of lockout/tagout work done. These audits will be documented.

- A qualified person not directly involved in the job that is being done must perform audits.

TRAINING

Training on lockout/tagout procedures is required for all workers, both users and non-users.

- Training must be fully documented. The name of the trainer, the trainee, the dates of training, and whether the employee was trained as a user or a non-user of Lockout/Tagout Procedures needs to be documented.

- Training will be given to all new personnel concerning the Lockout/Tagout Process.

- Each work site shall provide training on an annual basis to ensure that everyone understands the purpose and function of the Lockout/Tagout Program.

- Retraining will be required annually. Retraining will also be required under the following special circumstances:

    1. When there is a change in the Lockout/Tagout Procedure.

    2. When an audit or incident reveals deviations from procedures.

    3. When either audit or incidents determine that inadequacies exist in personnel knowledge of or adherence to energy policies and/or procedures.

    4. When there are changes in equipment or job assignments (only the workers affected).

DRIVERS POLICY

Individuals assigned to company vehicles are responsible for the safer operation and maintenance of that vehicle. Company vehicles consist of the following:

- All vehicles that are owned, leased, rented, or hired by the company

The following has been prepared to protect the public, company and its employees and will serve as a guide in the operation of all company vehicles. Failure to comply with these guidelines will require revocation of company driving privileges.

USERS OF COMPANY VEHICLES:

- Only authorized employees are permitted to operate company vehicles. No employees may drive a vehicle for the company unless prior authorization has been received from the Safety Director. Those authorized employees can be confirmed through the Safety Director or the current Driver authorization list.

- Non employee use of company vehicles is strictly prohibited.

- The employee must have a valid Drivers License with the proper endorsements.

- The employee must have the proper class of drivers' license to operate the vehicle he or she is driving. The proper drivers license classes are as follows:

  Class A: Any tractor trailer combination that has an actual weight, declared weight or GVWR (gross vehicle weight rating) or 26,001 LBS, or provided towed vehicle is more than 10,000.

  Class B: Any single motor vehicle that has an actual weight, declared weight or GVWR of 26,001 LBS. or more, or any such vehicle towing a vehicle in excess of, 10,000 LBS or less.

  Class C: Any motor vehicle that has an actual weight, declared weight or GVWR of less than 26,000 LBS. when endorsements "H"(Hazardous Materials) or "P" (Passenger Transport of 16 or more persons), would be required on the drivers license OR any combination of motor vehicles where the towing vehicle is less than 26,001 LBS GVWR and the towed vehicle has a GVWR of 10,000 LBS or less, but together they weight 26,001 LBS or more.

  Class D: Any truck or truck tractor that has an actual weight, declared weight or GVWR of 8000 LBS or more but less than 26,001 LBS, or is more than 80 inches wide.

  Class E: Motor vehicles less that 8,000 LBS

- The employee must not have in excess of six points as per the attached evaluation form.

- An employee operating a company vehicle while under the influence of an intoxicating beverage or drugs will be immediately terminated.

- An employee is required to report every vehicle violation and/or accident immediately upon its occurrence.

USAGE

- Company vehicles are to be used for company business only.

- Drivers of company vehicles must observe and obey all traffic laws. In the event a citation is issued for a traffic infraction, the driver will be responsible for the payment of the fine.

- Seat belts must be worn when operating a company vehicle. If employees are involved in an accident and are not wearing a seat belt, it will be considered a blatant disregard of the Safety Policy. Failure to wear seatbelts while operating or riding passenger in a company vehicle may result in disciplinary action up to and including termination.

- Company Vehicles may be garaged only:

  Where parking of the vehicle is not in violation of the law.
  Where the vehicle is secure from vandalism and/or theft
  Where permission is secured from the management

- All loads must be securely tied down to prevent shifting or dropping onto roadways.

- The transporting of combustible liquids is approved in approved containers only

- Non employee passengers are prohibited unless on company business

- Keys are never to be left in the ignition. Vehicle doors are to be locked when the vehicle is unattended

MAINTENANCE

- Employees assigned a company vehicle are responsible for the routine maintenance of the company vehicle.

- All outside repairs or maintenance of the Company vehicle must be approved through the company's maintenance department.

- Employees assigned a company vehicle are responsible for keeping it clean, both inside and out.

- Only fuel recommended by the manufacture is to be used.

MISCELLANEOUS

- Private vehicles are not to be used for transporting materials or company tools unless authorized by the Project Manager or Superintendent.

- Vehicle license plates must be mounted securely and display a valid sticker.

- Vehicle insurance and registration cards must be kept in the glove box of the vehicle. The registration form number must correspond with the license plate.

- In the event of an accident, adhere to the accident procedure and notify the Safety Director immediately.

- Company issued fuel cards are to be used by authorized personnel only.

- Fuel cards are to be used for company vehicles or vehicles authorized by the company only.

ADMINISTRATION AND TRAINING

- Prior to an employee being given driving privileges for a company vehicle, the Safety Director will review that the employee's motor vehicle record for compliance with the guidelines established on the Driver Evaluation Form.

- Upon receipt of a reported accident or violation, the Safety Director will review the employees driving record and compliance with the Driver Evaluation Form.

- All employees driving a company vehicle will have their motor vehicle record reviewed annually by the Safety Director for compliance with company policy.

ACCIDENT PROCEDURE

- Stop
  - Check for injuries and call for medical attention if necessary
  - Get witness information if possible
  - Call the local police jurisdiction
  - Notify the Safety Director and your Supervisor as soon as possible
- Complete the necessary company reports and submit to the Safety Director as soon as possible.
- Provide information required but do not, under any circumstances admit guilt, responsibility or offer a settlement of any kind.
- Once again, notify the Safety Director immediately, especially if there are injuries.

DEVIATION FROM THIS POLICY COULD RESULT IN DISCIPLINARY ACTION UP TO AND INCLUDING TERMINATION.

DRIVER EVALUATION FORM

DATE REQUESTED: _____

EMPLOYEE NAME: _____

EMPLOYEES NUMBER: _____

- This is an updating procedure for the continual evaluation of a driving employee.
- The point procedure is the method used to evaluate all drivers of company vehicles.
- If the driver has an evaluation score in the excess of five points, serious consideration will be given to their qualifications to continue driving a company vehicle.

Factors Considered :

Number of accidents (within 3 years)

1 or 2	1 point per occurrence
3 or more	2 points per occurrence

Major moving infractions (within 3 years)

Driving under the influence of drugs/alcohol	7 points
Any driving alcohol related offense	7 points
Driving with a suspended license	7 points
Reckless Driving	7 Points
Speeding in excess of 21 over the posted limit	2 points
Hit and run	7 points

1. Other moving infractions or points.

1 or 2	1 Point per Occurrence
3 or more	2 Points per Occurrence

2. Non moving violations (within 3 years)

   1 point per occurrence

3. 3 or more suspensions of a license (within 3 years) 7 points

Grading points Best: 0-2 points Average: 3-4 points Probation 5-6

MOBILE CRANES AND HOIST

Applicable OSHA Standards: 29 CFR 1926.251, 1926.1400

PURPOSE

To provide a guideline for the safe operation, use and inspection of mobile cranes and hoist.

SCOPE

This program applies to crawler cranes, locomotive cranes, wheel mounted cranes of both truck and self-propelled wheel type, and any variations thereof which retain the same fundamental characteristics used at our worksites.

DEFINITIONS

Accessory- A secondary part or assembly of parts which contributes to the overall function and usefulness of a machine.

Axis of Rotation- The vertical axis around which the crane superstructure rotates.

Base- The traveling base or carrier on which the rotating superstructure is mounted such as a car, truck, crawlers, or wheel platform.

Boom Angle- The angle between the longitudinal centerline of the boom and the horizontal. The boom longitudinal centerline is a straight line between the boom foot pin (heel pin) centerline and boom point sheave pin centerline.

Boom Hoist- A hoist drum and rope reaving system used to raise and lower the boom. The rope system may be all live reaving or a combination of live reaving and pendants.

Boom- Member hinged to the front of the rotating superstructure with the outer end supported by ropes leading to a gantry or A-frame and used for supporting the hoisting tackle.

Boom Stop- A device used to limit the angle of the boom at the highest position.

Brake- A device used for retarding or stopping motion by friction or power means.

Cab- A housing which covers the rotating superstructure machinery and/or operator's station. On truck-crane trucks a separate cab covers the driver's station.

Clutch- A friction, electromagnetic, hydraulic, pneumatic, or positive mechanical device for engagement or disengagement of power.

Counterweight- A weight used to supplement the weight of the machine in providing stability for lifting working loads.

Crane Safe Work Permit - The permit issued by the Project Superintendent or Site Crane Competent Person to the crane operator before any mobile hoisting work is performed.

Crawler Crane- Consists of a rotating superstructure with power plant, operating machinery, and boom, mounted on a base, equipped with crawler treads for travel. Its function is to hoist and swing loads at various radii.

Critical Lift - A lift where:

1. The load exceeds 80% of the crane's capacity.
2. Weight of the lift exceeds 50% of the load chart rating of the equipment being used and the lift is over power lines, process equipment, piping, or personnel are being lifted.
3. Two booms are required.
4. Poles or derricks have been erected.
5. Personnel are being lifted.
6. Crane is traveling with load.
7. Any lift in a Critical Lift Area.

Designated- Means selected or assigned by the company representative as being qualified to perform specific duties.

Drum- Cylindrical members around which ropes are wound for raising and lowering the load or boom.

Dynamic- Means loads introduced into the machine or its components by forces in motion.
for hoisting and lowering loads.

Gantry- Structural frame, extending above the superstructure, to which the boom support ropes are reaved.

Jib- An extension attached to the boom point to provide added boom length for lifting specified loads. The jib may be in line with the boom or offset to various angles.

Load (working) - Means the external load, in pounds, applied to the crane, including the weight of load-attaching equipment such as load blocks, shackles, and slings.

Load block [lower] - Means the assembly of hook or shackle, swivel, sheaves, pins, and frame suspended by the hoisting ropes.

Load block [upper] - Means the assembly of hook or shackle, swivel, sheaves, pins, and frame suspended from the boom point.

Load hoist- A hoist drum and rope reaving system.

Load Ratings- Crane ratings in pounds established by the manufacturer.

Locomotive Crane- Consists of a rotating superstructure with power-plant, operating machinery and boom, mounted on a base or car equipped for travel on railroad track. It may be self-propelled or propelled by an outside source. Its function is to hoist and swing loads at various radii.

Mobile Hoisting Equipment - Conventional rigid boom cranes, hydraulic cranes, and flex-lifts.

Outriggers- Extendable or fixed metal arms, attached to the mounting base, which rest on supports at the outer ends.

Reaving- Means a rope system in which the rope travels around drums and sheaves.

Rigging- Any cables, chokes, slings, hooks, beams, spreaders, or other device used to attach or lift the load.

Rope- Refers to a wire rope unless otherwise specified.

Side Loading- A load applied at an angle to the vertical plane of the boom.

Superstructure- The rotating upper frame structure of the machine and the operating machinery mounted thereon.

Swing- Means the rotation of the superstructure for movement of loads in a horizontal direction about the axis of rotation.

Swing Mechanism- The machinery involved in providing rotation of the superstructure.

Tackle- Assembly of ropes and sheaves arranged for hoisting and pulling.

Truck Crane- Consists of a rotating superstructure with powerplant, operating machinery and boom, mounted on an automotive truck equipped with a powerplant for travel. Its function is to hoist and swing loads at various radii.

Wheel Mounted Crane- Consists of a rotating superstructure with powerplant, operating machinery and boom, mounted on a base or platform equipped with axles and rubber-tired

wheels for travel. The base is usually propelled by the engine in the superstructure, but it may be equipped with a separate engine controlled from the superstructure. Its function is to hoist and swing loads at various radii.

Whipline- A separate hoist rope system of lighter load capacity and higher speed than provided by the main hoist.

Winch Head- A power driven spool for handling of loads by means of friction between fiber or wire rope and spool.

RESPONSIBILITIES

PROJECT SUPERINTENDENT:

The Project Superintendent or his/her designate is responsible for assuring that:

- Employees know, understand, and comply with the requirements of this SHG.
- Employees are trained in the procedures and use of equipment they are to use to complete the job.
- Audit and inspect for compliance of this SHG.
- Each crane is on a regular (daily, monthly, annual) inspection schedule.
- Proof of regular inspections using the checklist in this Safety Guideline or equivalent are available.
- Rental or leased cranes have a valid annual certification sticker or other documents prior to the use of the cranes.
- Competent, qualified operators are used when lifting.
- A Crane Safe Work Permit is issued for the following:
    a. All lifts with cranes having a capacity greater than ten (10) tons.
    b. All critical lifts.
- Joint responsibility with the crane operator for the safe operation of the

crane(s) and the safety of the lift is maintained.

- Failure to comply with this SHG will result in disciplinary action, up to and including discharge.

CRANE OPERATORS:

The crane operator is responsible for:

- Knowing, understanding, and complying with this program.
- Inspecting cranes on a daily basis and reporting defects noted during these inspections.
- Reporting any unsafe conditions to supervision.
- Knowing the weight of loads PRIOR to lifting.
- Knowing the wind speed PRIOR to lifting.
- Performing a daily inspection using the Attachment D "Daily Operators Inspection Report" at the beginning of each days work PRIOR to the crane use. Any deficiencies that affect the safe operations of the crane shall be repaired PRIOR to use. Each daily inspection report shall remain with the operator during the operation of the crane and turned in at the end of the work day.
- Perform a lifting job specific pre-task using Attachment An "Operators Lift Pre-Task" for each lift.
- Insure the load, rigging, procedures, and lift are safe to use. The operator is responsible for the load and lift when the crane is connected to the load.
- Assume joint responsibility with the Site Superintendent for the safe operation of the crane(s) and the safety of the lift.
- Understand that failure to comply with this program will result in disciplinary action, up to and including discharge.

GENERAL REQUIREMENTS

PRE-LIFT:

Manufacture's lifting procedures and methods shall be observed at all times.

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

All cranes shall have a qualified competent operator.

Inspect cranes when they arrive on site for mechanical integrity, load chart, operating manual and annual certification decal/sticker.

The crane operator must complete an "Operator's Lift Pre-Task" (Attachment A) and "Mobil Hoisting Safe Work Procedure" (Attachment G) PRIOR to lifting.

Rated load capacities, recommended operating speeds, special hazard warnings, or instructions shall be in a conspicuously place on all equipment, as required, and shall be visible to the operator while at the control station.

Inspect all rigging devices before use. Follow manufacturer's capacities and recommendations.

Obtain a Crane Safe Work Permit (Attachment E) for all cranes with capacities of ten (10) tons or more and critical lifts.

Work with lifts, cranes, or any hoisting equipment must be supervised at all times.

A qualified Signal Person and Qualified Rigger must be provided.

Wooden pads on outriggers will be used on all non-concrete surfaces. Mats will be used as needed.

The rear of the rotating superstructure of a crane will be barricaded to warn of the pinch point hazard.

The area where an overhead lift is made will be barricaded if personnel can have access and walk under the load.

Load block, headache ball, hooks, boom tip, and anti-two block devices shall be marked with highly visible fluorescent orange paint.

All jibs shall have positive stops to prevent their movement of more than 5 deg above the straight line of the jib and boom on conventional type crane booms. The use of cable type belly slings does not constitute compliance with this rule.

LIFTING:

Hand signals to crane operators will be given by a qualified signalman, shall be those prescribed by the applicable ANSI standard for the type of crane in use. An illustration of the signals shall be posted at the job site.

Rigging will be done by a qualified rigger.

All employees shall be kept clear of loads about to be lifted and of suspended loads.

There shall be no sudden acceleration or deceleration of the moving load.

Side loading of booms shall be limited to freely suspended loads. Cranes shall not be used for dragging loads sideways.

No hoisting, lowering, swinging, or traveling shall be done while anyone is on the load or hook.

On truck-mounted cranes, no loads shall be lifted over the front area except as approved by the crane manufacturer.

The operator shall test the brakes each time a load approaching the rated load is handled by raising it a few inches and applying the brakes.

Outriggers shall be used when the load to be handled at that particular radius exceeds the rated load without outriggers as given by the manufacturer for that crane. Where floats are used they shall be securely attached to the outriggers. Wood blocks used to support outriggers shall:

- Be strong enough to prevent crushing.
- Be free from defects.
- Be of sufficient width and length to prevent shifting or toppling under load.

Neither the load nor the boom shall be lowered below the point where less than two full wraps of rope remain on their respective drums.

When two or more cranes are used to lift one load, one designated person shall be responsible for the operation. He/she shall be required to analyze the operation and instruct all personnel involved in the proper positioning, rigging of the load, and the movements to be made.

In transit the following additional precautions shall be exercised:

- The boom shall be carried in line with the direction of motion.
- The superstructure shall be secured against rotation, except when negotiating turns when there is an operator in the cab or the boom is supported on a dolly.
- The empty hook shall be lashed or otherwise restrained so that it cannot swing freely.

Before traveling a crane with load, a designated person shall be responsible for determining and controlling safety. Decisions such as position of load, boom location, ground support, travel route, and speed of movement shall be in accord with his determinations.

A crane with or without load shall not be traveled with the boom so high that it may bounce back over the cab.

When rotating the crane, sudden starts and stops shall be avoided. Rotational speed shall be such that the load does not swing out beyond the radii at which it can be controlled. A tag or restraint line shall be used when rotation of the load is hazardous.

When a crane is to be operated at a fixed radius, the boom-hoist pawl or other positive locking device shall be engaged.

Ropes shall not be handled on a winch head without the knowledge of the operator.

While a winch head is being used, the operator shall be within convenient reach of the power unit control lever.

The operator shall not be permitted to leave his position at the controls while the load is suspended.

No person should be permitted to stand or pass under a load on the hook.

If the load must remain suspended for any considerable length of time, the operator shall hold the drum from rotating in the lowering direction by activating the positive controllable means of the operator's station.

OTHER REQUIREMENTS:

Cranes shall not be operated without the full amount of any ballast or counterweight in place as specified by the maker, but truck cranes that have dropped the ballast or counterweight may be operated temporarily with special care and only for light loads without full ballast or counterweight in place. The ballast or counterweight in place specified by the manufacturer shall not be exceeded.

Necessary clothing and personal belongings shall be stored in such a manner as to not interfere with access or operation.

Tools, oil cans, waste, extra fuses, and other necessary articles shall be stored in the tool box, and shall not be permitted to lie loose in or about the cab.

Refueling with small portable containers shall be done with an approved safety type can equipped with an automatic closing cap and flame arrester.

Machines shall not be refueled with the engine running.

A carbon dioxide, dry chemical or equivalent fire extinguisher shall be kept in the cab or vicinity of the crane.

Operating and maintenance personnel shall be made familiar with the use and care of the fire extinguishers provided.

OPERATIONS NEAR OVERHEAD ELECTRICAL LINES:

Except where electrical distribution and transmission lines have been de-energized and visibly grounded at point of work or where insulating barriers, not a part of or an attachment to the equipment or machinery, have been erected to prevent physical contact with the lines, equipment or machines shall be operated proximate to power lines only in accordance with the following:

Clearances of overhead power lines shall conform with OSHA standard 1926.1408

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

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

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

Prior to work near transmitter towers where an electrical charge can be induced in the equipment or materials being handled, the transmitter shall be de-energized or tests shall be made to determine if electrical charge is

induced on the crane. The following precautions shall be taken when necessary to dissipate induced voltages:

- The equipment shall be provided with an electrical ground directly to the upper rotating structure supporting the boom; and
- Ground jumper cables shall be attached to materials being handled by boom equipment when electrical charge is induced while working near energized transmitters. Crews shall be provided with nonconductive poles having large alligator clips or other similar protection to attach the ground cable to the load.
- Combustible and flammable materials shall be removed from the immediate area prior to operations.

INSPECTION REQUIREMENTS

The Crane Operator and the Crane Competent Person is responsible for performing inspections using Attachment D Daily Operators Inspection Report- Mobile Crane Operation, Attachment B Monthly Hydraulic Crane Inspection Report and Attachment C Monthly Inspection of Crawler, Locomotive & Truck Cranes.

A thorough, annual inspection of the hoisting machinery shall be made by a competent person, or by a government or private agency recognized by the U.S. Department of Labor. Form Works Inc. hall maintain a record of the dates and results of inspections for each hoisting machine and piece of equipment.

Any defects found will be repaired by a qualified person before the crane is used.

Wire rope shall be taken out of service when any of the following conditions exist:

- In running ropes, six randomly distributed broken wires in one lay or three broken wires in one strand in one lay;
- Wear of one-third the original diameter of outside individual wires.
- Kinking, crushing, bird caging, or any other damage resulting in distortion of the rope structure;
- Evidence of any heat damage from any cause;
- Reductions from nominal diameter of more than one-sixty-fourth inch for diameters up to and including five-sixteenths inch, one-thirty-second inch for diameters three-eighths inch to and including one-half inch, three-sixty-fourths inch for diameters nine-sixteenths inch to and including three-fourths inch, one-sixteenth inch for diameters seven-eighths inch to 1 1/8 inches inclusive, three-thirty-seconds inch for diameters 1 1/4 to 1 1/2 inches inclusive;
- In standing ropes, more than two broken wires in one lay in sections beyond end connections or more than one broken wire at an end connection.
- Wire rope safety factors shall be in accordance with American National Standards Institute

TRAINING REQUIREMENTS

Training will be conducted on the requirements of this program annually, whenever this program is revised, and for new crane operators or newly hired operators.

Crane operators and the rigging crew will review this program prior to lifts. If the job has multiple lifts this program will be reviewed once prior to the jobs starting. All new crane operators and rigging crew members will review this program prior to starting work. Documentation of this review will be filed with the Site Superintendent or Site Safety Representative using Attachment F "Safe Work Practice Review Roster" of this program.

ATTACHMENTS

A. Operators Lift Pre-Task
B. Monthly Hydraulic Crane Inspection Report
C. Monthly Inspection of Crawler, Locomotive & Truck Cranes
D. Daily Operators Inspection Report
E. Crane Safe Work Permit
F. Review Roster
G. Mobil Hoisting Safe Work Procedure

ATTACHMENT A

OPERATORS LIFT PRE-TASK

To be filled out by operator of equipment and rigger foreman/lead person and signed by both.

DATE:_____ **Area of Work**:_____
Operators name (Printed):_____
Riggers name (Printed):_____
Equipment being used:_____
Load Description:_____
Load Total Weight:_____
Type of slings or Separators to be used and their maximum capacity:
_____

A) What line will be used:
   1. Whip Line - Line Size:_____
      Max. Capacity in lbs.:_____
      Max. Boom Angle MINUS 10% for Safety Factor:_____
   2. Block Line - Line Size:_____
      Max. Capacity in lbs.:_____
      Max Boom Angle MINUS 10% for Safety Factor:_____
   3. Swing Radius:_____

B) What type of signal will be used? (Circle **YES** or **NO**)
   1. Hand Signal - **YES** or **NO** - Will signal Person be in FULL View at ALL Times - **YES** or **NO** - OR - Will Signal Person Be Relay Person - **YES** or **NO**
      Signal Persons Name:_____
   2. Two-Way Radio Used: **YES** or **NO**
      Signal Person Name:_____
   3. What Type of Warning will be given By Crane Operator when Swing Begins:_____

C) Type of Surface Crane is on AND is it within one degree of Level:_____

D) Has Pre-Lift Meeting been held with all involved with Lift and Crew in Area of Lift: **YES** or **NO**

E)
Operator Signature:_____

Rigger Signature:_____

Competent Person Signature:_____

ATTACHMENT B

MONTHLY HYDRAULIC CRANE INSPECTION REPORT

Owner:_____Date:_____ Equipment No:_____
Manufacturer/Model:_____
Serial Number:_____ Date of Manufacture:_____
Maximum Capacity:_____tons
Boom Length at Maximum Capacity:_____ft.
Capacity Chart Posted in Cab: **( ) YES ( ) NO**

		CONDITION
1.	Identification & High-visibility Markings	_____
2.	Hooks (pins-swivels)	_____
3.	Hook block (pins-grease fittings)	_____
4.	Boom Tip Sheaves	_____
5.	Cable Drum (facing & becket)	_____
6.	Hoist Line (Condition of cable, age)	_____
7.	Main Boom (structural members-pins)	_____
8.	Boom Extensions (structural members-pins)	_____
9.	Cable Guides	_____
10.	Boom Hoist Safety Device (check valve)	_____
11.	Hydraulic System (hoses, pump, controls, reservoir)	_____
12.	Hydraulic Outriggers	_____
13.	Power Unit Instrumentation	_____
14.	Tires (air pressure/damage)	_____
15.	Steering Mechanism	_____
16.	Cab, Platforms, Handrail, Steps, Glass, Access	_____
17.	Lighting System	_____
18.	Painting	_____
19.	Fire Extinguisher	_____
20.	Housekeeping	_____

OVERALL EVALUATION OF CONDITION **( )Good,Safe ( )Fair,Safe ( )Unsafe**

Comments:_____
_____
_____

Operators Signature:_____

Competent Persons Signature:_____

ATTACHMENT C

MONTHLY INSPECTION OF CRAWLER, LOCOMOTIVE & TRUCK CRANES

Date:_____Manufacturer:_____
Type:_____ Serial Number:_____

The following items must be inspected on a monthly basis including cranes that have been idle for six months or less:

		Satisfactory	**Unsatisfactory**
1.	All control mechanisms for maladjustment interfering with proper operation:	_____	_____
2.	All control mechanisms for excessive wear of components and contamination by lubricants or other foreign matter:	_____	_____
3.	All safety devices for malfunction:	_____	_____
4.	Deterioration or leakage in air or hydraulic systems:	_____	_____
5.	Crane hooks with deformations or cracks. For hooks w/cracks or having more than 15% in excess of normal throat opening or more than 10 degree twist from the plane of the unbent hook:	_____	_____
6.	Electrical apparatus for mal-functioning, signs of excessive deterioration, dirt, & moisture accumulation:	_____	_____
7.	Deformed, cracked or corroded members, in the crane structure and boom:	_____	_____
8.	Cracked or worn sheaves and drums:	_____	_____

9. Worn, cracked or distorted parts (pins, bearings, shafts, gears, rollers and locking devices): _____ _____

10. Excessive wear of chain-drive sprockets and excessive chain stretch: _____ _____

11. Excessive wear on brake and clutch system parts, linings, pawls, and ratchets: _____ _____

12. Travel steering, braking, and locking devices for malfunction: _____ _____

13. Excessively worn, damaged or under inflated tires: _____ _____

14. Load, boom angle, and other indicators over their full range for and significant inaccuracies: _____ _____

15. All ropes in use for deterioration or loss of original strength such as: _____ _____

A. Reduction of rope diameter below nominal diameter due to loss of core support, internal or external corrosion, or wear of outside wires:

B. A number of broken outside wires and the degree of distribution of concentration of such broken wires.

C. Worn outside wires.

D. Corroded or broken wires at end connections.

E. Corroded, cracked, bent, worn, or improperly applied end connections.

F. Severe kinking, crushing, cutting, or unstranding.

NOTE: Rope sections in contact with equalizer sheaves or other sheaves where rope travel is limited or with saddles.

16. Hand signals poster: _____ _____

17. Rated load capacities and operating instruction posted: _____ _____

Operator Signature:_____

Competent Person Signature:_____

ATTACHMENT D

DAILY OPERATORS INSPECTION REPORT - MOBIL CRANE OPERATION

Date:_____ Manufacturer/Model:_____
Weight:_____ Capacity:_____tons
Monthly Inspection Date:_____ Annual Cert. Date:_____

		Acceptable	Not Acceptable	Not Applicable
1.	Load line - lubricated, wound properly on drum, condition:			
2.	Whip line - lubricated, wound properly on drum, condition:			
3.	Hook and safety latches on load block:			
4.	Hook and safety latches on headache ball:			
5.	Cable at wear points:			
6.	Pins in becket:			
7.	Wedges installed:			
8.	Clamps on dead ends:			
9.	Boom line (Conventional booms) lubricated, wound on drum properly, condition:			
10.	Hydraulic oil lines:			
11.	Outriggers, pads and pins:			
12.	Lights, turn signals:			
13.	Horn:			
14.	Backup alarm:			
15.	Oil:			
16.	Water:			
17.	Boom pins:			
18.	Cotter pins:			
19.	Steering:			
20.	Tires/tracks:			
21.	Controls operation:			
22.	Brakes - swing winch - operate against engine power:			
23.	Instruments:			
24.	Legible load chart:			
25.	Energized line warning marker			
26.	Clean windshield, windows, Check wipers:			

27. Swing radius barricaded: _____ _____ _____
28. Operators certification card expiration date:_____
29. Overall evaluation of crane:

( ) Good-Safe ( ) Fair-Safe ( ) Unsafe

Operator Signature:_____

Competent Person Signature:_____

ATTACHMENT E

CRANE SAFE WORK PERMIT

To Be Developed With Each Written Site Specific Plan

ATTACHMENT F

REVIEW ROSTER

Date:_____

Completion of this roster is required for crane operator(s), rigging crew(s), and crane competent person(s) PRIOR to lifts being made. For multiple jobs in progress a single review can be performed before starting the project. Each "new" member of the lifting crew, as they arrive on site, will review this SHG and sign off on the roster.

The roster will be kept on file with the Site Superintendent or Site Safety Representative.

It will the responsibility of the Site Superintendent and crane competent person(s) to insure completion of this roster.

	PRINT:	SIGNATURE:
Operator(s)		
Rigging Crew		
Competent Person:		

ATTACHMENT G

MOBIL HOISTING SAFE WORK PROCEDURE

This safe work procedure is designed to assist both crane operators and rigging crews in performing their jobs safely. It is not intended to replace any checklist or specific safe work procedures for critical lifts. Since it may be impractical to write a specific safe work procedure for each job and safe rigging and operating techniques are used to safely accomplish many different jobs the following safe work procedure shall apply.

BEFORE LEAVING STAGING AREA AT JOB SITE

1. Obtain job line up. This should be a question and answer session that eliminates doubts about the job(s) to be performed. Complete Attachment A "Operators Lift Pre-Task" form.

2. Visually inspect crane and test for safe operating condition using attachment D "Daily Operators Inspection Report".

3. Inspect slings, hooks, shackles, and other lifting equipment.

4. Crane operator must be familiar with the crane and qualified to operate it safely.

AT JOB SITE

1. Obtain a Safe Work Permit from client representative, as required.

2. Determine a safe work procedure. Write a specific safe work procedure for critical lifts and any non-routine lifts.

3. Know, OR ACCURATELY CALCULATE, the weight of the load. **NEVER MAKE A LIFT IF WEIGHT IS UNKNOWN.**

4. Check and verify the load radius - keep this distance as short as possible. The radius is measured with a tape from the center of rotation to the center of gravity of the load. Remember to allow for boom pull-down when lifting or the radius will increase, decreasing capacity.

5. Check the boom length and verify with the load chart. With hydraulic cranes this may be an estimate because the boom may not be marked with number indicators.

6. Verify crane's net capacity with the manufacturer's capacity chart for radius and boom length being used. Net capacity is obtained by subtracting the weight of ALL load handling devices (block, hook, ball, slings, wire rope, etc.) from the gross capacity listed on the manufacturer's capacity chart.

7. Inspect ground support conditions and use mats as necessary to support the crane.

8. Fully extend outriggers.

9. Insure crane deck is level. Remember most manufacturer's state "For every degree the crane is out of level you must subtract capacity by as much as 25%.

10. Complete a Crane Safe Work Permit (Attachment E) and a Critical Lift Check Sheet and Personnel Lifting Checklist .

11. Rig to prevent damage to equipment - use softeners and tag lines. Protect the load and the slings.

12. Inspect eye bolts before using and lift straight up only.

13. Rig to keep the load balanced. Use necessary slings, hitches, and tag lines to control the load.

14. Avoid sudden starts/stops and do not jerk the load. Failure to do this increases the shock load on the crane and rigging equipment, decreasing capacity.

15. Watch the vertical angle. A vertical angle is the angle formed by one leg of a two-legged sling and an imaginary vertical line extending down from the lifting hook. When this angle is more than 60 degrees the load on EACH sling leg increases greatly. Larger slings, hooks, shackles, etc. may be required. Use sling charts from standard rigging books or sling manufacturer's charts for sling capacity.

16. Lift with the load directly under the boom point. Cranes are designed to lift freely suspended loads and the capacity chart is not figured on side loads or loads to the front or rear of boom.

17. Always expect the unexpected. Be prepared to take evasive action.

18. Report problems to supervision.

Operator:_____ Date:_____

Rigging Crew: _____ _____

_____ _____

_____ _____

PERSONNEL LIFTING / PERSONNEL PLATFORMS

Applicable OSHA Standards: 29 CFR 1926.550(g)

PURPOSE

The purpose of this program is to provide direction and guide lines and to establish the general requirements to implemented when Lifting Personnel with Mobile Cranes and Derricks.

SCOPE

The scope of this program applies to all job site locations where Personnel Lifting is required. The requirements set forth in this program, shall be implemented to the fullest extent possible and shall be considered as a minimum requirement.

RESPONSIBILITIES

Lifting Personnel with Mobile Cranes and Derricks

The use of a crane or derrick to hoist workers on a platform is prohibited, except when the erection, use, and dismantling of conventional means of reaching the work site, such as a personnel hoist, ladder, stairway, aerial lift, elevated work platform or scaffold, would be more hazardous, or is not possible because of structure design or worksite conditions.

In the event that a personnel lift is required, the following will be followed to provide for the safe design, construction, testing, use and maintenance of personnel platforms, and hoisting of personnel platforms on the load lines of cranes or derricks.

Critical Lift – is defined as the following:

- The load exceeds 80% of the crane capacity; or
- Weight of the lift exceeds 50% of the load chart rating for the equipment being used And the lift is over power lines, process equipment, piping, or personnel are being lifted; or
- Two booms are required; or
- Poles or derricks have been erected; or
- Personnel are being lifted; or

- Crane is traveling with a load; or

- Any lift in a Critical Lift Area.

Critical Lift Area – An area where hazardous chemicals are stored, transferred, or processed where the dropping of lifted load would pose a serious threat to personnel, environment, or the general public and areas over power lines.

Failure – means load refusal, breakage, or separation of components.

Live Booms – booms which lowering is controlled by a brake without aid from other devices which slow the lowering speeds.

Maximum Intended Load – means the total load of all workers, tools, materials, and other loads reasonably anticipated to be applied to a personnal platform or personnel platform components at any time.

Personnel Lift Areas – are areas where the use of a crane suspended personnel platform is the safest method and the use of any other device is not possible because of structural design or work site conditions.

Prohibited Lift – is defined as the following:

- A lift over personnel or a building occupied by personnel where dropping of the load would endanger occupants, unless building is vacated and a pre job critical lift form has been filled out and signed by a Supervisor, Site Safety Representative or Client; or

- The load exceeds 85% of the load chart of the crane, and a critical lift form can not be completed due to client signature refusal; or

- Soil or ground conditions are such that stability of the crane during the lift OR traveling with a load, cannot be guaranteed; or

- The wind speed is greater than thirty (30) mph, twenty (20) mph for personnel lifts, as measured by not greater than 6, 5 or greater for personnel lifts, on the Beauford Scale, using weather service, wind speed indicators, wind vanes, flags, smoke, steam vents, or large wind socks; or

- Dangerous weather conditions or other impending danger; or

- Traveling with personnel suspended in a personnel platform.

Procedures:

Lifting:

- Prohibited lifts shall not be made at any time.
- Areas where Critical Lifts are being performed shall be entirely barricaded or a standby person(s) shall be stationed in the area to keep unauthorized personnel from entering the lift area.
- Critical Lifts must be approved by the Project Superintendent, Site Safety Supervisor/Representative, and Client PRIOR to lifting.
- Equipment without lifting lugs, structural steel, and pipe shall not be lifted by a single choker in Critical Lift Areas unless precautions are taken to prevent the load from slipping out of the choker. Such precautions may require attaching stopping devices to the load or using two chokers when making the lift.
- Straight pieces of equipment, steel or pipe, lifted in a Critical Lift Area by a single choker, must have a secondary means of securing to prevent equipment from sliding out of the choker.
- The Critical Lift Checklist (Attachment – A) shall be used for critical lifts.
- A come-along or chain fall shall not be used as a lifting device.

Wind Speed:

- Crane lifts will be suspended when the wind speeds reach 30 mph. (sustained or gusts)
- Personnel Lifts will be suspended when the wind speed reaches 20 mph. (sustained or gusts)
- Oversize loads which create a “sail effect” on the crane, regardless of wind speed, will be evaluated on a case by case basis to insure the safety of the lift. The Site Superintendent and Safety Representative will make the evaluation.
- Lifts where the wind speed is 30 mph or greater and the crane and load are “shielded” from the wind force by structures will be evaluated on a case by case basis to insure the safety of the lift. The Site

Superintendent and the Safety Representative will make the evaluation.

- The following Beaufort Scale will be used whenever other means of measuring the wind force are not available. The Beaufort Scale is defined as a scale in which numbers form 0 to 12 indicates the force of the wind.

Beaufort Scale

Beaufort Number	Wind Cond.	Miles Per Hour	Description
0	Calm	less than 1	calm, smoke rises vertically
1	light air	1 to 3	direction of wind shown by smoke but not by wind vanes.
2	light	4 to 7	wind felt on face; leaves rustle; ordinary vane moved by wind.
3	gentle	8 to 12	leaves and small twigs in breeze constant motion; wind extends light flag.
4	moderate breeze	13 to 18	raises dust and loose paper, small branches are moved.
5*	fresh	19 to 24	small trees being to sway, crested wavelets form on inlet waters.
6**	strong breeze	25 to 31	large branches in motion; electrical wire whistle, umbrella used with difficulty.
7	moderate	32 to 38	whole tree in motion; (inconvenience walking against wind)
8	fresh gale (or gale)	39 to 46	breaks twigs off tree; generally impedes progress.
9	strong gale	47 to 54	slight structure damage occurs; chimney pots and slates removed.

10	whole gale	55 to 63	trees uprooted; considerable structural damage occurs.
11	storm (or violent storm)	64 to 72	very rarely experienced; accompanied by wide spread damage.
12***	hurricane	73 to 136	devastation occurs

* = Personnel lifts are prohibited at 20 mph level or greater
** = Crane lifts are prohibited at 30 mph level or greater
*** = The United States uses 74 statute mph as the speed criteria for hurricane.

Operational Requirements:

- Cranes used for hoisting personnel must have a current inspection sticker.
- Load lines shall be capable of supporting, without failure, at least seven (7) times the maximum intended load, except where rotation resistance rope is used, the lines shall then be capable of supporting without failure, at least ten (10) times the maximum load intended.
- Load and boom hoist drum brakes, swing brakes, and locking devices such as pawls, or dogs shall be engaged and set when occupied personnel platform is in a stationary position.
- The load line hoist drum shall have a system or device on the power train, other than the load hoist brake, which regulates the lowering rate or speed of the hoist mechanism (controlled load lowering). Free fall is prohibited.
- The crane shall be uniformly level within one percent of level grade and located on firm footing. Cranes equipped with outriggers shall have them fully deployed following manufacturer's specifications, in so far as applicable, when hoisting personnel.
- The total weight of the loaded personnel platform and related rigging shall not exceed 50 percent of the rated capacity for the radius and configuration of the crane or derrick and must be reviewed during the critical lift plan.
- The use of machines having live booms (booms in which lowering is controlled by a brake without aid from other devices which slow the lowering speed) is prohibited.
- Cranes and Derricks with angle booms shall be equipped with a boom angle indicator, readily visible to the equipment operator.

- Canes with telescope booms shall be equipped with a device to indicate clearly to the operator, at all times, the boom's extended length, or an accurate determination of the load radius to be used during the lift shall be made prior to hoisting any personnel.

Personnel Platform Design and Specifications:

- Personnel platform and suspension systems shall be designed by a Qualified Professional Engineer or a qualified person competent in structural design.

- The suspension systems shall be designed to minimize tipping of the platform due to movement of personnel and tools or equipment occupying the platform.

- The personnel platform shall be capable of supporting, without failure, its own weight and at least five (5) times the maximum load intended.

- Each Personnel platform shall be equipped with a top guardrail approximately 42 inches high, a midrail and toeboards.

- The platform shall be enclosed at least from the toeboard to the midrail with either solid construction or expanded metal having openings no greater than ½ inch.

- A grabrail shall be installed inside the entire perimeter of the personnel platform. Access gates. If installed, shall not swing outward during hoisting. Access gates, including sliding or folding gates, shall be equipped with a restraining device to prevent accidental opening.

- Headroom shall be provided which allows personnel to stand upright in the platform

- In addition to the use of hard hats, workers shall be protected by overhead protection on the personnel platform when workers are exposed to falling objects.

- All welding of the personnel platform and its components shall be performed by a qualified welder familiar with the weld grades, types and material specified in the platform design.

- The personnel platform shall be conspicuously posted with a plate or other permanent marking which indicates the weight of the platform and its rated load capacity or maximum intended load. The platform must not be loaded in excess of its rated load capacity.

- Personnel platform shall not be used to hoist materials or tools when not hoisting personnel.

Personnel Platform Loading:

- The personnel platform shall not be loaded in excess of its rated load capacity. When a personnel platform does not have a rated capacity then the personnel platform shall not be loaded in excess of its maximum intended load.

- The number of workers occupying the personnel platform shall not exceed the number required for the work being performed.

- Personnel platforms shall be used only for workers, their tools and the materials necessary to do their work.

- Materials and tools for use during personnel lift shall be secured to prevent displacement and evenly distributed within the confines of the platform while the platform is suspended.

Rigging:

- When a wire rope bridle is used to connect the personnel platform to the load line, each bridle leg shall be connected to a master link or shackle in such a manner to ensure that the load is evenly divided among the bridle legs.

- Hooks on overhaul ball assemblies, lower load blocks, or other attachment assemblies shall be of a type that can be closed and locked, eliminating the hook throat opening. Alternatively, an alloy anchor type shackle with a bolt, nut and retaining pin may be used.

- Wire rope, shackles, rings, master links, and other rigging hardware must be capable of supporting, without failure, at least five (5) times the maximum intended load applied or transmitted to that component.

- Bridles and associated rigging for attaching personnel platforms to the hoist line shall be used only for the personnel platform and shall not be used for any other purpose when not hoisting personnel.

Trial Lift, Inspection, and Testing:

- A trial lift with the unoccupied personnel platform loaded at least to the anticipated lift weight shall be made from ground level, or any other location where personnel will enter the platform, to each location at which the personnel platform is to be hoisted and positioned. This trial lift is to be

performed immediately prior to placing personnel on the platform. The operator shall determine that all systems, controls, and safety devices are activated and functioning properly; that no interference exist; and that all configurations necessary to reach those work locations will allow the operator to remain under the 50% limit of the hoist's or cranes rated capacity. A single trial lift may be performed at one time for all locations that are to be reached from a single set up location.

- The trial shall be repeated whenever the crane or derrick is moved and set up in a new location or returned to a previously used location or if the lift route is changed.

- After the trial lift and just prior to hoisting personnel, the platform shall be hoisted a few inches and inspected to ensure that it is secure and properly balanced.

- Workers shall not be hoisted unless the following conditions are determined to exist:

    a. Hoist ropes or lines shall be free of kinks.
    b. Multiple part lines shall not be twisted around each other.
    c. The primary attachment shall be centered over the platform.
    d. The hoisting system shall be inspected if the load rope is slack to ensure all ropes are properly stated on drum and in sheaves.

- A visual inspection of the crane or derrick, rigging, personnel platform, and the crane or derrick base support or ground shall be constructed by a competent person immediately after the trial lift to determine whether the testing has exposed and defects or produced any adverse effects upon any component or structure. Any defects found must be corrected before hoisting personnel.

- At each job site, prior to hoisting workers in the personnel platform, and after any repair or modification, the platform and rigging shall be proof tested to 125% of the platforms rated capacity by holding it in a suspended position for five (5) minutes with the test load evenly distributed on the platform (this may be done concurrently with the trial lift). After proof testing, a competent person shall inspect the platform and rigging. Deficiencies found must be corrected and another proof test conducted. Do not lift personnel until proof testing requirements are satisfied.

Work Practices:

- Workers shall keep all parts of the body inside the platform during raising, lowering, and positioning. This provision does not apply to an occupant of the platform performing the duties of a signal person.

- Before workers exit or enter a hoisted personnel platform that is not landed, the platform shall be secured to the structure where the work is to be performed, unless securing to the structure creates an unsafe situation.

- Tag lines shall be used unless their use creates an unsafe condition.

- The crane or derrick operator shall remain at the controls at all times when the crane engine is running or the platform is occupied.

- Hoisting of workers shall be promptly discontinued upon indication of any dangerous weather conditions or other impending danger.

- Workers being hoisted shall remain in continuous sight of and in direct communication with the operator or signal person. Standard signals, hand or verbal, must be used and must be visible or audible to the operator at all times.

- Assure that the signal person(s) are knowledgeable in standard signals. In those situations where direct visual contact with the operator is not possible, and the use of a signal person would create a greater hazard for that person, direct communication alone such as radio may be used.

- Workers occupying the personnel platform shall use a body harness system with the lanyard appropriately attached to the lower load block or overhaul ball, or to a structural member within the personnel platform capable of supporting a fall impact for workers using the anchorage.

- If the lift is to be made adjacent to or over water and the danger of drowning exists the following condition shall apply:

    a. Workers working over or near water, where the danger of drowning exists, shall be provided with U. U. Coast Guard approved life jackets or inflatable buoyant work vests.
    b. Prior to and after each use, the buoyant work vest or life preserver shall be inspected for defects which would alter their strength or buoyancy. Defective vests will not be used.
    c. Ring buoys with at least 90 feet of line shall be provided and readily available for emergency rescue operations. Distance between ring buoys shall not exceed 200 feet.

d. At least one (1) lifesaving skiff shall be immediately available at locations where workers are working over or adjacent to water.

- No lifts shall be made on another of the crane's or derrick's load lines while personnel are suspended on a platform.

- Cranes shall not travel while personnel are hoisted.

- An additional person must be positioned to obverse for proper winding of the cable on the winch drum during the hoisting and lowering operation.

Pre-Lift Meeting:

- A meeting attended by the crane or derrick operator, signal person(s)(if necessary for the lift), workers (persons to be lifted), Site Superintendent, Safety Representative, crane competent person, and client representative shall be held, PRIOR to the lift, to review the job and assure all the requirements have been met and documented.

- This meeting shall be held PRIOR to the trial lift at each new work location, and shall be repeated for any workers newly assigned to the operation.

- Critical Lift Checklist and Daily Operator Inspection Report must be issued or completed for each job requiring the lifting of personnel.

- The attached checklist for lifting personnel must be completed to insure a safe lift. It shall be signed by the client representative, the crane operator, and the personnel being lifted.

Audits/Inspection Requirements:

- All equipment must be inspected prior to use.

- Supervision will inspect equipment and individual performance as work is being performed.

ATTACHMENT 'A'

PERSONNEL LIFTING CHECKLIST

Consideration must be given to other means of getting the job done and decisions shall be for the safest method available with the least exposure.

This checklist must be completed by all required representatives PRIOR to each job requiring lifting of personnel. This permit must be renewed if job scope, conditions, personnel, or equipment change. The lift must not be made or attempted until all questions can be answered "YES."

1. Have all chemical, electrical, fire, or temperature hazards been considered?

   ☐ Yes ☐ No

2. Are personnel wearing the required safety equipment to do the job; and has the proper safety equipment been supplied if working over or near water?

   ☐ Yes ☐ No

3. Has the anti-two block system been tested and found to be operable prior to this job?

   ☐ Yes ☐ No

4. Has the crane been visually inspected for safety and does it have a current legible inspection tag?

   Crane tag date: _____

   ☐ Yes ☐ No

5. Is the load to be lifted on the platform within the load capacity of the Personnel Platform?

   ☐ Yes ☐ No

6. Have the lifting cables been inspected and in good condition?

   ☐ Yes ☐ No

7. Is the cable wound on the drum correctly and smoothly?

   ☐ Yes ☐ No

8. Is the cable running free and not fouled?

☐ Yes ☐ No

9. Are the wedges, becket, and clamp in good condition and secure?

☐ Yes ☐ No

10. Is the crane on solid foundation and/or mats?

☐ Yes ☐ No

11. Are the outriggers extended and the crane level?

☐ Yes ☐ No

12. Is the safety lock on the hook in good condition?

☐ Yes ☐ No

13. Do flag person(s) and operator understand hand signals to be used?

☐ Yes ☐ No

14. Are personnel in the platform wearing fall protection?

☐ Yes ☐ No

15. Has the operator been instructed to remain at the crane controls while the personnel are in the platform?

☐ Yes ☐ No

16. If it is necessary to telescope the boom while hoisting personnel, have precautions been taken to prevent two-blocking?

☐ Yes ☐ No

17. Have calculations been made to assure that the load does not exceed 50% of the crane capacity while hoisting personnel? (attach calculations to this form)

☐ Yes ☐ No

18. Is the work platform properly secured to the load line?

☐ Yes ☐ No

19. Has the work platform been load tested prior to hoisting personnel? (attach copy of load testing calculations)

☐ Yes ☐ No

20. Has a trial lift and 125% proof test been made prior to hoisting personnel? (attach copy of proof testing results)

☐ Yes ☐ No

21. Has an observer been selected to observe for proper cable wrapping during lift?

☐ Yes ☐ No

22. Will the crane operator, flag person and/or personnel being lifted be able to maintain visual or verbal contact?

☐ Yes ☐ No

23. Has a Safe Work Permit been issued for the job?

☐ Yes ☐ No

24. Barricades up around all areas to cover swing radius, lifting area, work areas and landing areas?

☐ Yes ☐ No

_____ _____

Crane Operator Client Representative or Permit Writer

_____

Rigging Forman

Personnel Hoisted: (each individual must be in attendance and sign off)

_____	_____
_____	_____
_____	_____
_____	_____

_____
Site Superintendent/Supervisor

_____
Safety Supervisor/Safety Representative

Date: _____ Time: _____

RESPIRATORY PROTECTION PROGRAM

Applicable OSHA Standards: 29 CFR 1910.134

PURPOSE

The purpose of this policy is to comply with the OSHA standards on Respiratory Protection.

SCOPE

This program applies to all of our controlled worksites where one of our, or a subcontract employee may be occupationally exposed to respiratory hazards.

RESPONSIBILITIES

MANAGEMENT - It is management's responsibility to determine what specific applications require use of respiratory equipment. Management must also provide proper respiratory equipment to meet the needs of each specific application. Employees must be provided with adequate training and instructions on all equipment.

MANAGEMENT/SUPERVISORY - Superintendents, supervisors, foremen, or group leaders of each area are responsible for insuring that all personnel under their control are completely knowledgeable of the respiratory protection requirements for the areas in which they work. They are also responsible for insuring that their subordinates comply with all facets of this respiratory program, including respirator inspection and maintenance.

EMPLOYEES - It is the responsibility of the employee to have an awareness of the respiratory protection requirements for their work areas (as explained by management), according to proper instruction, and for maintaining the equipment in a clean and operable condition.

GUIDELINES

The guidelines in this program are designed to help reduce employee exposures against occupational dusts, fumes, mists, radionuclides, gases and vapors.

The primary objective is to prevent atmospheric exposure to these contaminants.

Where feasible, exposure to contaminants will be eliminated by engineering controls (example, general and local ventilation, enclosure or isolation, and substitution of a less hazardous process or material).

When effective engineering controls are not feasible, use of personal respiratory protective equipment may be required to achieve this goal and shall include the following sections, as applicable:

- Selection of respirators
- Medical evaluation
- Fit testing
- Types of respiratory equipment and their use
- Maintenance and care of respirators
- Breathing air quality and use
- Identification of filters, cartridges, and canisters
- Employee training and information
- Program evaluation

SELECTION OF RESPIRATORS

Respirators are selected and approved by management. The selection is based upon the physical and chemical properties of the air contaminants and the concentration level likely to be encountered by the employee. The respirator program administrator will make a respirator available immediately to each employee who is placed as a new hire or as a transferee in a job that requires respiratory protection. Replacement respirators/pre-filters will be made available as required.

The Respirator Program Administrator for the company is the Safety Director.

More than one hazard may exist for a given operation and more than one respirator could be used to protect against a number of different air contaminant. Correct respirator selection for each situation however, is a complex job. Before proper respiratory protection can be assigned, we must consider the nature of the hazard, extent and limitations of respirators. It is important to select the right equipment for the job.

Evaluation of exposure to a toxic air-borne material necessitates:

- Identifying the type of contaminant (mist, dust, vapor, gas, and fume).
- Logging the name of the contaminant.

- Listing pertinent physical and chemical properties (LEL, Flash Point, etc.)

- Estimating or monitoring the concentration of the contaminant in the breathing zone and immediate work area.

- Noticing the Threshold Limit Value (TLV) both OSHA and ACGIH recommended levels.

- Comparing the surveyed levels to the recommended exposure limits. (Ceiling, short term, time-weighted average).

- Noting odor threshold, IDLH level, warning properties and if contaminant is an eye irritant.

- Evaluating whether the contaminant can be trapped by a given sorbent, efficiently; or would react with filter media.

- Recording if the contaminant may cause systemic poisoning by absorption through the skin.

The toxicology of a given contaminant can be assessed when all information outlined above is evaluated on a respirator selection work sheet.

The overall protection afforded by a given respirator design (and mode of operation) may be defined in terms of its assigned protection factor (APF) (To be Determined- Reserved by OSHA). The APF is a measure of the degree of protection afforded by a respirator, defined as the ratio of the concentration of contaminant in the ambient atmosphere to that inside the enclosure (usually inside the face piece) under conditions of use. Respirators should be selected so that the concentration inhaled by the APF's are selection and use guides, and should only be used when the employer has established a minimal acceptable respirator program as defined in Section 3 of the ANSI Z88.2-1969 Standard.

In addition to face pieces, this includes any type of enclosure or covering of the wearer's breathing zone, such as supplied-air hoods, helmets or suits.

Includes dusts, mists, and fumes only. Does not apply when gases or vapors area absorbed on particulates and may be volatilized or for particulates volatile at room temperature. Example: coke oven emissions.

Any single-use dust respirator (with or without valve) not specifically tested against a specified contaminant.

Dust filter refers to a dust respirator approved by the silica dust and includes all types of media, that is, both nondegradable mechanical type media and degradable resin-impregnated wool felt or combination wool-synthetic felt media.

Fume filter refers to a fume respirator approved by the lead fume test. All types of media are included.

High-efficiency filter refers to a high-efficiency particulate respirator. The filter must be at least 99.9% efficiency against 0.3 um DOP to be approved. Or P-100 series filters.

To be assigned based on dust or fume filter efficiency for specific contaminant.

For gases and vapors, an APF should only be assigned when published test data indicate the cartridge or canister has adequate sorbent efficiency and service life for a specific gas or vapor. In addition, the APF should not be applied in gas or vapor concentrations that are: (1) immediately dangerous to life, (2) above the lower explosive limit, and (3) cause eye irritation when using a half mask.

A positive pressure supplied-air respirator equipped with a half-mask face piece may not be as stable on the face as a full face piece. Therefore, the APF recommended is half that for a similar device equipped with a full face piece.

A positive pressure supplied-air respirator equipped with a full face piece provides eye protection but is not approved for use in atmosphere immediately dangerous to life. It is recognized that the face piece leakage, when a positive pressure mode. However, to emphasize that it basically is not for emergency use, the APF is limited to 100 x APF.

The design of the supplied-air hood, suit, or helmet (with a minimum of 170 liters/min. of air) may determine its overall efficiency and protection. For example, when working with the arms over the head, some hoods draw the contaminant into the hood-breathing zone. This may be overcome by wearing a short hood under a coat or overalls. Other limitations specified by the approval agency must be considered before using in certain types of atmospheres.

The SCBA operated in the positive pressure mode has been tested on a selected 31-man panel and the face piece recorded as < 0.01% penetration. Therefore, a PF of 1,000 + is recommended. At this time, the lower limit of detection 0.01% does not warrant listing a higher number. A positive pressure SCBA for an unknown concentration is recommended. This is consistent with the 1,000 + that is listed. It is essential to have an emergency device for use in unknown concentrations. A combination supplied-air respirator in pressure-demand or other positive pressure mode, with auxiliary self-contained air supply, is also recommended for use in unknown concentrations of contaminants immediately dangerous to life. Other limitations, such as skin absorption of HCN or tritium, must be considered.

The protection a respirator may provide for a worker is dependent upon he type of unit and the fit. A respirator protection factor is an indicator of how much protection a respirator may
provide. The factor is the ratio of the contaminant concentrations outside vs. inside the respirator, P = C/C. This is determined by quantitative testing. The general rule of

thumb; however, says the protection factor is the approximate average effectiveness of a given respirator
in qualitative tests with good face seal. Under normal operating conditions, the time-weighted average (TWA) concentration x protection factor = maximum concentration of a contaminant against which a particular type of respirator may be used.

For example: If an employee were spray painting with an enamel paint cut with toluol solvent and the measured TWA concentration was 200 ppm, and the TLV (ACGIH) is 100 ppm, then a half mask air purifying respirator with organic vapor trapping cartridges is satisfactory. Table II outlines protection factors for air-purifying and atmosphere-supply respirators. These protection factors serve as guidelines only, and should be used in conjunction with all sections of this respirator-training guide.

WORK AREA MONITORING

To assure the adequacy of a respiratory protection program, monitoring shall be conducted on exposure hazards as a basis to provide for a continuing healthful environment for employees. Personal sampling equipment may be used in accordance with accepted industrial hygiene standards to sample each work area. Results of these samples will pinpoint areas where respiratory protection is required. A "Job Description - - Respirator Specification" Form will also document what type of equipment should be worn for specific hazards present.

CARTRIDGE CHANGE SCHEDULE

Using the present available air monitoring data, cartridges will be changed as follows

PER MANUFACTURES SPECIFICATIONS

GUIDES FOR THE SELECTION OF RESPIRATOR

Hazard	**Respirator**
GAS OR VAPOR CONTAMINANTS	
Oxygen Deficiency	Self-contained breathing apparatus. Combination air-line respirator auxiliary positive pressure self-contained air supply.
Immediately dangerous to life or health	Self-contained breathing apparatus positive pressure mode.

	Air-purifying, full face piece respirator with chemical canister (gas mask) escape only. Self-rescue mouth piece respirator (escape only). Combination air-line respirator with auxiliary positive pressure self-contained air supply.
Not immediately dangerous to life or health	Air-line respirator. Air-purifying, half-mask of full face piece respirator with chemical cartridge(s) or canister.
PARTICULATE CONTAMINANTS	
Immediately dangerous to life or health	Self-contained breathing apparatus positive pressure mode. Air-purifying full face piece respirator with appropriate filter (for escape only). Combination air-line respirator with auxiliary positive pressure self-contained air supply.
Not immediately dangerous	Air-purifying, half-mask or full to life or health face piece respirator with filter pad cartridge(s). Air-line respirator. Air-line abrasive-blasting respirator
COMBINATION GAS, VAPOR, AND PARTICULATE CONTAMINANTS	
Immediately dangerous to life or health	Self-contained breathing apparatus positive pressure mode. Air-purifying full face piece respirator with chemical canister and appropriate filter (for escape only). Combination air-line respirator (for escape only).

	Combination air-line respirator with auxiliary positive pressure self-contained air supply.
Not immediately dangerous to life or health	Air-line respirator. Air-purifying, half-mask or full face piece respirator with chemical cartridge or canister and appropriate filter.

CLASSIFICATION OF RESPIRATORY HAZARDS TO THEIR PROPERTIES WHICH INFLUENCE RESPIRATOR SELECTION

Gas or Vapor Contaminants	Particulate Contaminants
Inert: They do not react with substances under most conditions and create a respiratory hazard by displacing air and producing oxygen deficiency (for example, helium, neon, argon).	Particles are produced by mechanical means by the disintegration processes of grinding, crushing, drilling, blasting and spraying; or by the physiochemical reactions such as combustion, vaporization, distillation, sublimation, cacination, and condensation. Particulate are classified as follows
Acidic: Substances that are acids or that react with water to produce positively charged hydrogen ions. They taste sour and many are corrosive to produced tissues (for example, hydrogen chloride, sulfur dioxide, fluorine, nitrogen dioxide, hydrogen sulfide, and hydrogen cyanide).	*Dust*: A solid mechanically particle with sizes varying from submicroscopic to visible or macroscopic.
Alkaline: Substances that are alkalis or that react with water to produce an alkali. When in water solutions, they taste bitter, and many are corrosive to tissues (for example,	*Spray*: A liquid mechanically processed particle with size generally in the visible or macroscopic range
ammonia, amines, phosphine, arsine, and stibine).	*Fume*: A solid condensation particle. Extremely small particle size, generally less than one micron in diameter.
	Mist: A liquid condensation particle with sizes ranging from

submicroscopic to visible or macroscopic

Organic: These are the compounds of carbon. Examples are saturated hydrocarbon (methane, ethane, butane),

unsaturated hydrocarbons (ethylene, acetylene), alcohols (methyl alcohol, proply alcohol), ethers (methyle ether, ethyl ether), aldehydes (formaldehyde), ketones (dimethyl ketone), organic acids (formic acid, acetic acid), halides (choro-form, carbon tetrachloride), amides (formamide, acetamide), nitriles (acetonitrile), isocyanates (toluene di-isocyanate), amines methylamine), epoxies (epoxy-ethane, propylene oxide), and aromatics (benzene, toluene,

xylene).

Hydrides: Compounds in which hydrogen is chemically bonded to metals and certain other elements (for example, diborane and lithium hydride).

Fog: A mist of sufficient concentration to perceptibly obscure vision.

Smoke: A system which includes the product of incomplete combustion of organic substances in the form of solid and liquid particles and gaseous products in air. Smoke is usually of sufficient concentration to perceptible obscure vision.

PROTECTION FACTORS FOR RESPIRATORS - RESERVED (3)

Concentrations in multiples of permissible exposure	Face Piece Pressure	Permissible Respirators limits
5X	-	Single use dust-Quarter- mask dust
10X	-	Half or quarter mask, high efficiency

50X	-	Full face piece, high efficiency
	-	Full face piece, supplied air
		Self-contained breathing apparatus (SCBA)
100X	+	Powered, high-efficiency, enclosures.
		Half-mask supplied air, Type C positive pressure demand mode.
1,000X	+	Supplied air with full face piece supplied air and auxiliary self-contained air support.
Emergency entry into unknown concentrations or fire fighting	+	Full face piece SCBA
Escape only 1/	+	Any SCBA - Any self rescuer

1/ In an atmosphere which is immediately dangerous to life or health.

NOTES:

1. Half-mask and quarter mask respirators should not be used if particulate matter causes eye irritation at the use concentrations.
2. Full face piece supplied-air respirators should not be used in an atmosphere which is immediately dangerous to life or health unless it is equipped with an auxiliary air supply which can be operated in the positive pressure.
3. Since OSHA has not updated their standard we are adopting the old standard.

Source: "Respirator Protection Factors," E. Hyatt. Los Alamos Scientific Laboratory Publication LA - 6084-MS, January 1976.

MEDICAL EVALUATION

Each employee required to wear a respirator will fill out a Medical Evaluation Questionnaire. The Medical Evaluation Questionnaire will be read by a PLHCP. If the PLHCP determines a follow-up examination is necessary, the employee shall make themselves available, during regular business hours, for the follow-up examination. Once the PLHCP has performed all the required duties a written recommendation shall be rendered by the PLHCP for the type of respirator which can be worn.

Medical Evaluation Questionnaires are attached as Attachment II - English, and Attachment III - Spanish.

LIMITATIONS AND SURVEILLANCE

Employees should be physically fit and able to perform job duties while wearing a respirator. If a physician determines that a worker has a severe cardiovascular or pulmonary dysfunction that would be aggravated by wearing a respirator; then by a written PLHCP opinion, that person would be exempted from a job requiring the use of a respirator.

Conditions that may prevent a person from using an atmosphere supplying respirator may include:

- Emphysema
- Chronic pulmonary obstructive disease
- X-ray evidence of pneumoconiosis
- Coronary artery disease
- Heart attack
- Bronchial asthma
- High blood pressure
- Epilepsy
- Diabetes
- Restrictive heart abnormalities
- Experiencing anxiety or any problems when wearing a respirator

- Open hole in the eardrum

"Persons should not be assigned to tasks requiring the use of respirators unless it has been determined that they are physically able to perform the work and use the equipment. A "yes" answer to any of the preceding questions would constitute a warning sign regarding the use of respirators. A medical opinion to confirm any of the above situations (answered "yes") should then be obtained. The respirator user's medical status should be reviewed periodically (for instance, annually)."

No beards or facial hair should interfere with the sealing surfaces of any respirator. If respiratory protective equipment is required for a job, no beards or long sideburns will be allowed, as they will not permit a good face seal.

Contact lenses cannot be worn in an atmosphere that necessitates the use of respirators. No glasses
may be worn with a full face piece respirator, unless the face piece is fitted with an adapter.

Should a worker have exposure to certain toxic materials, periodic medical examinations such as urinalysis, blood chemistries, or bioassay may be required even though the employee wears the proper respiratory protective equipment.

FIT TESTING

OSHA Issues Final Rule on Respiratory Protection Fit-Testing Protocol

The U.S. Department of Labor's Occupational Safety and Health Administration (OSHA) Aug. 4 issued a final rule detailing new quantitative fit-testing procedures to assist workers and employers in the proper fit and selection of respirators.

OSHA said the new Controlled Negative Pressure (CNP) REDON protocol is intended to focus on obtaining the best-fitting respirator. Additionally, the agency noted that the new protocol is less time-consuming than current approved fit-testing protocols.

The new rule requires three different test exercises followed by two redonnings of the respirator. The

three test exercises, listed in order of administration, are normal breathing, bending over and head shaking. The procedures for administering the CNP REDON protocol are summarized below:

- **Facing forward.** In a normal standing position, without talking, breathe normally for 30 seconds; then, while facing forward, hold breath for 10 seconds during sampling.
- **Bending over.** Bend at waist for 30 seconds and hold breath for 10 seconds during sampling.
- **Head shaking.** Shake head back and forth vigorously several times while shouting for approximately three seconds and, while facing forward, hold breath for 10 seconds during sampling.
- **First redonning.** Remove respirator, loosen all face-piece straps, and then redon the respirator mask; after redonning the mask, face forward and hold breath for 10 seconds during sampling.
- **Second redonning.** Remove respirator, loosen all face-piece straps, and then redon the respirator mask again; after redonning the mask, face forward and hold breath for 10 seconds during sampling.

Employees required to wear a respirator must be fitted properly and tested for a face seal prior to use of the respirator in a contaminated area. Manufacturers provide fitting instructions and use limitations on the product packaging.

Qualitative fit testing is acceptable for most hazards in the work place. (Refer to OSHA standards for specific direction.)

Fitting - For a respirator to work effectively, it must fit well and feel comfortable. All the care that went into proper respirator selection will not protect the worker if the face piece does not fit properly. Fitting is most critical for self-contained breathing apparatus and respirators used in IDLH atmospheres. There are two categories of fitting tests,

Qualitative and Q*uantitative*.

1. Qualitative tests include:

Negative Pressure Test - Close off air inlet of canister, cartridge, or filter with palms, inhale gently so that the face piece collapses. Hold breath for 10 seconds, if the face piece remains slightly collapsed and no inward leakage is detected, the respirator probably has an adequate fit.

b. Positive Pressure Test - Close off exhalation valve, exhale gently into the face piece. If a positive pressure can be built up inside the face piece without excess outward leakage, the fit is good. Take care not to disturb placement of the face piece by placing undue pressure on the mask with hand.

c. Banana Oil Testing - A worker is subjected to isoamyl acetate vapor (banana oil) adjacent to sealing surfaces of the respirator face piece. If there is a detectable odor inside the mask, then the face piece should be refitted in clean air; and the test repeated, switching respirators if necessary, until a fit is made.

d. Irritant Smoke Test - Stannic chloride is impregnated on pumice in glass tubes. When the tube ends are broken, irritant smoke is released. The tester puffs smoke towards the wearer from increasingly shorter distances until the tube is within about 6 inches of the respirator, where the smoke is then directed toward potential sources of leakage. At this point, if no leakage has been detected, the wearer may cautiously begin various head movements to simulate use in particular job. This test has an advantage in that the wearer usually reacts involuntarily to leakage by coughing or sneezing. If there is a reaction, stop producing smoke immediately. The irritant smoke test is valid for testing both air-purifying and atmosphere-supplying respirators; but an air-purifying respirator must have high efficiency filters.

2. Quantitative test uses instruments to measure (quantify) the amount of test chemical outside vs. inside of the respirator. This type of test expresses the amount of leakage as a percentage of the challenge atmosphere outside of the mask. This test is excellent when face piece leakage must be minimized for work in IDLH atmospheres. A quantitative test may be required when employees are exposed to chemical agents like acrylonitrile, benzene, coal tar pitch volatiles or vinyl chloride.

When fitting any face piece the headstraps must be comfortable. Tightening the straps will sometimes reduce leakage, but the wearer may be unable to tolerate the respirator for any length of time; thus invalidating the fitting test for a normal job routine.

AIRLINE RESPIRATOR WITH ESCAPE BOTTLE

The airline respirator with full face piece in the pressure- demand mode is designed for use in atmospheres immediately dangerous to life or health when used with an approved emergency

escape system. With the potential hazards involved when using this respirator, it is imperative that this type of equipment be inspected before and after each use.
Before entry into a hazardous area, check the following:

- Hose length to the escape unit from a compressor or bottle cascade system should be adequate to perform all types of work, but not greater than 300 feet.
- All connections should be tight and free of leaks. Rubber hose from the face piece to the regulator and hand disconnect union should be hand tight only.
- The face piece and all hoses should be free of cracks and the regulators functioning normally at recommended pressures.
- The air pressure in the emergency escape bottle should be approximately 2100 pounds per square inch (PSI).
- Face seal on respirator should be good by using negative pressure test (See Section 5).
- Make sure the respirator works properly before entering a contaminated area.

When using an airline respirator with an emergency escape bottle:

- Never over-pressure the regulator.
- The bottle should be used for escape from a hazardous atmosphere. Do not breathe from the bottle during normal work. Do not turn on the air supply from the bottle except to escape from a hazardous area, if the main air supply has been cut off.

- After the escape cylinder has been used or the air pressure is below the recommended level (2100 psi), the foreman at the job site should be notified and the foreman should then see that this equipment is refilled with certified breathing air.

- Exposure to high levels of contaminants requires that all exposed skin be properly protected.

SELF CONTAINED BREATHING APPARATUS

Self contained breathing apparatus (SCBA) should be used for emergencies like clean-up of a large spill, fire fighting, or rescue from a hazardous area. The equipment must be checked before and after each use and at least monthly. Routine inspection of this equipment assures that it will be ready for use in an emergency.

Thirty (30) minute SCBA units provide protection against most air-borne agents and are an excellent back-up system when tank cleaning, vessel entry or breaking into lines is done with airline-SCBA equipment.

Before Using Any SCBA Equipment:

- Inspect the connections for tight fit and possible leaks.

- Inspect all parts of the respirator for damage or excessive wear. Check low air pressure alarm.

- Check the air pressure in the cylinder, it should read approximately 2100 psi, and check the air flow to the face piece.

- Make sure you can get a good face seal. Use the negative pressure fitting test* to check the fit. Do not wear this apparatus if you have a beard, long side burns or wear glasses.

- Be sure you have been properly instructed before using this equipment.

When Using SCBA Equipment:

- Do not attach the hose from the respirator face piece until you are ready to enter the contaminated area. This will conserve the air supply in the cylinder.

- If the alarm bell rings, signaling a lowered air supply, **LEAVE THIS CONTAMINATED AREA AT ONCE**!

- If air flow is insufficient for any reason, turn on the bypass valve to increase air flow to the face piece and leave the area immediately. Do not return to the hazardous area until the equipment is repaired or a new SCBA unit is issued.

After Using SCBA Equipment:

- Close all valves and then de-pressure the hose through the by-pass valve.

- Tell the foreman that the cylinder has been discharged. The foreman should then see that the cylinder is properly charged with certified breathing air.

- This equipment should be inspected, tagged and properly stored to protect against damage and to insure ready use.

EMERGENCIES AND SPECIAL OPERATIONS

Self-contained breathing apparatus may be required in specific areas for emergency use. This equipment will be used only by trained personnel when it is necessary to enter hazardous atmospheres. The following points should be considered:

- All potential users will be fully trained in the use of this equipment.

- When the equipment is used, it will be tested in an uncontaminated atmosphere prior to entering the hazardous area if possible.

- An employee will not work with this apparatus in a hazardous atmosphere on an individual basis. At least one additional employee suitably equipped with a similar breathing apparatus must be in contact with the first employee and must be available to render assistance if necessary.

- This equipment will be inspected monthly by trained department or group personnel.

There are certain situations where only one type of respiratory protection should be considered. For fire fighting and rescue from a hazardous atmosphere only self-contained breathing apparatus is acceptable. In confined spaces with IDLH atmospheres only SCBA, airline with escape bottle or other approved equipment should be used.

Emergencies, such as explosion and fire, release of high concentrations of toxic gas or vapor, and rescue will be discussed at those locations where incidents occur.

Special operations like tank cleaning, tower maintenance, turnarounds, clean up of large spills, etc., and the use of appropriate respirators, will be covered by safety personnel, superintendents or foremen.

Before entering areas that could be oxygen deficient or have chemical contaminants of unknown concentration, the work environment should be monitored with available equipment to determine exposure levels. If the proper equipment is not on hand or

special monitoring is required, contact our contract Safety Coordinator; if unavailable, contact Corporate Safety or customer's Safety personnel.

ADDITIONAL RESPIRATOR INFORMATION

Canister Gas Masks

Some operations require the use of canister masks to protect against chemical contaminants. This equipment is designed to filter harmful chemical agents from the air; however, this is not multi-purpose equipment and will not afford protection for all exposures. Each gas mask canister is made for protection from a certain agent or group of agents with similar properties. The manufacturer's instructions for proper use should be followed carefully.

Gas masks should not be used if any of the following conditions exists:

- Oxygen content in work area is below 19.5%.
- If contaminant concentrations are unknown or are likely to be very high.
- If the atmosphere has been determined to be immediately dangerous to life or health (IDLH).
- If any chemical agent in the work area has poor odor warning properties or is odorless like carbon monoxide.
- If the gas mask is not effective in filtering the chemical agent, i.e.: H2S - hydrogen sulfide.

If gas masks are used, then:

- Canisters must be used prior to the expiration date.
- Wearer must leave the contaminated area if:
- Any odor is detected within mask.
- The canister is noticeably causing an increase in breathing resistance.
- Gas mask canisters should be changed after each use.

- All instructions for proper use should be followed.

MAINTENANCE AND CARE OF RESPIRATORS

The following points should be considered for respirator inspection and maintenance:

- The wearer of a respirator will inspect it daily whenever it is in use.
- Supervisor, foreman, or group leader will periodically spot check respirators for fit, usage, and condition:
- Respirators not discarded after one shift use, will be cleaned on a daily basis, according to the manufacturer's instructions, by the assigned employee or other person designated by the respirator program coordinator.
- Respirators not discarded after one shift use, will be stored in a suitable container away from areas of contamination.
- Whenever feasible, respirators not discarded after one shift use, will be marked or stored in such a manner to assure that they are worn only by the assigned employee. If used by more than one employee is required, the respirator will be cleaned between uses.

Maintenance of respiratory protective equipment is essential to the overall effectiveness of the program. Wearing a poorly maintained or malfunctioning respirator could be more hazardous than not having any respirators available. A worker wearing a defective respirator thinks he is fully protected when, in reality, he may not be. Emergency equipment must be maintained routinely. Self-contained breathing apparatus is generally used in the most hazardous and demanding circumstances; wearing a defective unit could have lethal results.

Equipment should be repaired by trained personnel or the manufacturer. Only designated replacement parts should be used when assembling respirators. Substitution of parts from a different brand or type of respirator invalidates approval of the device. All respiratory protective equipment should be cleaned and disinfected. Fore most respirators, hot soap and water and a hot rinse is adequate. Manufactured disinfectant

solutions aid in sterilization. Respirators used in atmospheres immediately dangerous to life or health or for emergencies or rescue should be cleaned after each use.

Respirators should be stored to protect against dust, sunlight, heat, extreme cold, high humidity, corrosive the respirator face pieces protected or store face pieces in sealed plastic bags in a metal cabinet. If equipment is issued to an employee, it is his/her

responsibility to keep it clean and store it in the proper manner. Emergency equipment should be readily available for use, not under lock and key, and strategically placed for ready access in an emergency.

All respirators should be inspected to check for tightness of the connections, fit of component parts and adjustment of straps on the face piece as follows:

- Air purifying - when inspecting this type of respirator, be sure to check the headstraps for wear and cracks; face piece for broken element holders or split lens, sealing of exhalation valve, and air purifying elements for correct type, expiration date, gasket seal, and previous use. Reusable air purifying respirators should be inspected before and after each use.

- Atmosphere supplying - although units differ in construction, examination should include: a check of headstraps and face piece, condition of lines or hoses and connections, and inspection of regulators, valve, cylinders and warning alarms. Most important- respirators for emergency use should be inspected monthly; and the person initializing the record tag should make certain that the SCBA equipment is in good working order. Atmosphere supplying equipment not used routinely should be inspected after use before it is put back into service.

BREATHING AIR QUALITY AND USE

This section will assure that breathing air for atmosphere supplied-air respirators is of high quality. When supplied-air is used the following will be required:

- Compressed and liquid oxygen will meet Federal requirements

- Compressed breathing will be Type 1 - Grade D as described in ANSI/Compressed Gas Association Commodity Specification for Air, G-7.1-1989

- Compressors used to supply breathing air will be constructed and situated to prevent entry of contaminated air into the air-supply system, Minimize moisture, Have suitable in-line air filters, have a tag on the filter showing last date changed and signature of person changing filter

- Oil lubricated compressors shall have a high temperature alarm or CO alarm, or both; if only a high temperature alarm is used the air supply shall be monitored at intervals sufficient to prevent CO in the breathing air from exceeding 10 ppm

- Breathing air line couplings shall be incompatible with nonrespirable worksite air or gas systems. No asphyxiating substances shall be introduced into the breathing air system.

IDENTIFICATION OF FILTERS, CARTRIDGES, AND CANISTERS

All filters, cartridges and canisters used in the workplace shall be labeled and color coded with the NIOSH approved label and that label will not be removed and will remain legible.

EMPLOYEE TRAINING AND INFORMATION

Each employee, upon assignment to an area requiring respirators, must be instructed by his superintendent, supervisor, foreman, or group leader relative to their responsibilities in the respiratory program. The "Respirator Issuance and Training" card will be reviewed on a periodic basis with each employee. They will also be instructed in need, use, limitations, and care of their respirator(s).

There are basic components of training that are common to both workers and supervisors. Each person must have an opportunity to handle the respirator, check different fitting techniques, test face piece-to-face seal, and to wear the respirator in normal air prior to starting a job. In addition there should be a discussion of engineering and administrative controls in use, and why respirators also are needed. The nature of the respiratory hazard and what happens if the respirator is not worn, or used improperly should be explained. The employees should be informed why a particular type of respirator has been selected; and how to use respirators in emergencies and special operations.

1. Supervisors who oversee the daily activities of workers who wear respirators should be familiar with the following:

    a. Work requirements and conditions necessitating the use of respirator protective equipment. These may include:

        (1) Time of exposure to a contaminant
        (2) The activity and mobility of the worker
        (3) Eye protection needed
        (4) Temperature extremes
        (5) Face piece-to-face seal of various types of equipment

    b. Nature and extent of hazards to which a worker may be exposed.

        (1) Type of contaminant and its concentration
        (2) Acute (short term) or chronic (long term) exposure potential

    c. The general operation of the program; maintenance and inspection of equipment, issuance of respirators, and control of their use.

d. Legal requirements pertinent to the use of respirators in a capacity as supervisor.

A Supervisor can get help and information from the Respirator Training Guide, Material Safety Data Sheets, or the Safety Department.

2. Since the worker will be directly exposed to contaminants, he/she must know:

   a. The nature of the hazard and what might happen if a selected respirator is not worn.

   b. What control measures are being considered in addition to wearing personal protective equipment?

   c. Why a particular respirator was selected for that job.

   d. The limitations of a specific respirator.

   e. How to use any respirator assigned to him/her and to adjust the unit for a proper fit.

   f. Maintenance, storage and cleaning of respirators.

   g. How to recognize an emergency and use the proper equipment.

The supervisor will provide training with help from the Safety Department

3. The most effective respiratory protective equipment is that equipment which is worn. The best way to insure that the respirators will be worn is to handle objections to wearing the equipment. The worker must be motivated to wear the respirator by instilling in him the desire and need to wear the proper equipment. If objections to fit, size, type, etc., are handled, then there will be a greater likelihood that the worker will wear the respirator provided.

PROGRAM EVALUATION

This program will be reviewed annually, or sooner if needed, to insure a state of the art Respiratory Protection Program.

SANITATION

Applicable OSHA Standard: 29 CFR 1910.141, 29 CFR 1926.51

PURPOSE

The purpose of this program is to provide directions and instructions for company requirements to be met for sanitation purposes.

SCOPE

The scope of this program applies to all company jobsite locations where sanitation facilities are required. The requirements, as set forth in this program, should be implemented to the fullest extent possible.

RESPONSIBILITIES

The primary responsibility for the implementation of the requirements of this program shall rest with the jobsite Supervisor, Foreman, or Leadman of record.

The Director of Safety or designee shall be responsible to provide for the monitoring of work activities to assure compliance to the requirements of this program and compliance to the Customer/Client safety requirements.

REQUIREMENTS

Potable Water:

An adequate supply of potable water shall be provided in all places of employment.

Portable drinking water dispensers shall be designed, constructed, and serviced so that sanitary conditions are maintained, shall be capable of being tightly closed, and shall be equipped with a tap.

Any container used to distribute drinking water shall be clearly marked as to the nature of its contents and not used for any other purpose.

Open containers such as barrels, pails or tanks for drinking water from which the water must be dipped or poured, whether or not they are fitted with a cover, are prohibited.

Non-potable water shall not be used for washing any portion of the person, cooking or eating utensils, or clothing. Non-potable water may be used for cleaning work premises, other than food processing and preparation premises. Non-potable water outlets shall be identified by signs meeting the requirements of subpart G of 29 CFR 1926, to indicate clearly that the water is unsafe and is not to be used for drinking, washing, or cooking purposes.

Toilet Facilities:

General:

Toilet facilities, in toilet rooms separate for each sex, shall be provided in all places of employment in accordance the Table 1 below**.** The number of facilities to be provided for each sex shall be based on the number of employees of that sex for whom the facilities are furnished. Where toilet rooms will be occupied by nor more than one person at a time, can be locked from the inside, and contain at least one water closet, separate toilet rooms for each sex need not be provided. Where such single-occupancy rooms have more than one toilet facility, only one such facility in each toilet room shall be counted for the purpose of Table 1

Table 1

Number of Employee:	Number of water closets
1 to 15	1
16 to 35	2
36 to 55	3
56 to 80	4
81 to 110	5
110 to 150	6
over 150	1 additional fixture for each additional 40 employees

Each water closet shall occupy a separate compartment with a door and walls or partitions between fixtures sufficiently high to assure privacy. The sewage disposal method shall not endanger the health of employees.

Construction Jobsites:

Toilets shall be provided for employees, at a minimum, according to Table 2:

Table 2

Number of Employees	Minimum Number of Facilities
20 or less	1
20 or more	1 toilet seat and 1 urinal per 40 workers
200 or more	1 toilet seat and 1 urinal per 50 workers

Toilet facilities are not required on site if there is transportation readily available to nearby toilet facilities.

Lavatories:

Each lavatory will be provided with hot and cold running water or tepid running water and each lavatory shall also be provided with hand soaps or other cleansing agents.

Individual hand towels or sections thereof, of cloth or paper, warm air blowers or clean individual sections of continuous cloth toweling, convenient to the lavatories, shall be provided.

Showers:

Whenever showers are required by a particular standard, the showers shall have hot and cold running water or tepid running water.

Each shower shall be provided with body soap or other appropriate cleansing agents convenient to the shower.

One shower shall be provided for each 10 employees of each sex.

Employees who use shower shall be provided with individual clean towels

Waste disposal:

Any receptacle used for putrescible solid or liquid waste or refuse shall be so constructed that it does not leak and may be thoroughly cleaned and maintained in a sanitary condition. Such a receptacle shall be equipped with a solid, tight fitting cover, unless it can be maintained in a sanitary condition without a cover.

SCAFFOLDS

Applicable OSHA Standard: 29 CFR 1926 Subpart L

PURPOSE

The purpose of this program is to provide directions and instructions for company requirements to be implemented with the construction, erection, and dismantling of scaffolds and ladders.

SCOPE

The scope of this program applies to all company jobsite locations where scaffolds and ladders may be used. The requirements, as set forth in this program, should be implemented to the fullest extent possible.

RESPONSIBILITIES

The primary responsibility for the implementation of the requirements of this program shall rest with the jobsite Supervisor, Foreman, or Leadman of record.

The Director of Safety or designee shall be responsible to provide for the monitoring of work activities to assure compliance to the requirements of this program and compliance to the Customer/Client safety requirements.

The Project Manager, Vice President, or Chief Executive Office shall be responsible for the enforcement and disciplinary action resulting from violation or failure of assigned persons to implement the requirements of this program.

REQUIREMENTS

The following requirements are applicable to all scaffolds:

Guardrails and Toeboards:

- Guardrails shall be constructed of 2" X 4" lumber, 1/2 inch wire rope, angle iron or the prefabricated rail(s) supplied by the scaffold manufacturer.

- Toprails shall be approximately 42 inches above the working surface.

- Midrails shall be approximately 21 inches above the working surface.

- Wire rope toprails and midrails shall be stretched tight with no more than an approximate 3 inch deflection.

- Toeboards shall extend a minimum of 4 inches above the working surface.

- When the placement of the scaffold work platform prevent the installation of guardrails, other fall protection equipment shall be used.

- Guardrails and toeboards shall be installed on all open sides and ends of scaffolds.

- Scaffolds and work platforms 4 feet to 10 feet high with a working surface of less than 45 inches shall have standard guardrails installed on all open sides and ends of the scaffold or platform.

Working Surfaces:

- Working surfaces shall be constructed of scaffold plank, aluminum deck boards or 3/4" construction grade plywood.

- Scaffold planking shall be scaffold grades or equivalent as recognized by approved grading rules for the species of wood used under the American Lumber Standards.

- Working surfaces shall be secured by nails, double wrap of #9 wire or cleats.

- Lumber sizes, when used in this program, refer to nominal size/thickness except where otherwise stated.

- Scaffold planks shall extend a minimum of 6 inches and a maximum of 12 inches over the end supports.

- If required, an access/egress ladder shall be provided.

- Scaffold planks shall not span more than 8 feet between supports/vertical legs.

- Scaffold planks and plywood shall be free of splits and burns.

Scaffold Footing and Anchorage:

- The footing or anchorage shall be capable of carrying the maximum intended load without settling or displacement.

- The uprights/vertical legs shall be plumb and securely braced to prevent swaying and displacement.

NOTE: The requirements for specific types of scaffolds and ladders are described below.

Tubular Welded Frame:

- Scaffold shall be cross-braced to assure scaffold is plumb, square, and rigid.

- Stacking pins shall only be secured with the manufacturer's pins or recommended bolts.

- Cross braces shall be secured, as designed by the manufacturer.

- Stationary scaffolds must be secured horizontally, every 26 feet of height and 30 feet horizontally, to prevent tipping.

- The height of rolling scaffolds, measured from the ground to the toprail, shall be no more than four times the minimum base dimension (length times the width).

- All wheels/casters shall be the same size, equipped with a positive locking device, and in good working condition.

- Wheels shall be locked while personnel are working from the scaffold.

- Personnel shall not be permitted on mobile scaffold while the scaffold is being moved.

Tube and Coupler (Tube-Lock):

- Uprights shall have a maximum spacing of 8 feet.

- Uprights shall be placed on secure bases and maintained plumb.

- Scaffolds shall be limited in heights and working levels to those permitted in Tables 2-10, 11, and 12 of OSHA 29 CFR 1926.451.

- Horizontal braces shall be installed completely around all exterior uprights and between interior uprights. Braces shall be installed every 6 feet of height.

- Platform supports shall be coupled/clamped directly to the horizontal braces and extend 4 inches to 12 inches beyond the horizontal braces.

- All horizontal bracing shall be coupled/clamped directly to the uprights.

- Diagonal bracing shall be installed at alternating 45 degree angles beginning with the corner upright and repeating every 5th upright on the perimeter. An alternating bracing pattern should be used.

One and Two Point Suspension Scaffolds:

- Cable shall be securely anchored and softeners shall be used when necessary.

- Cable shall be insulated at the anchor point from the motor to 4 feet above the motor and wherever the cable comes in contact with metal to prevent electrical arcing.

- Two-point suspension scaffold platforms shall remain level while being raised or lowered.

- Each employee shall wear a full body harness and be tied off to an **independent lifeline**. A lifeline shall be supplied for each employee.

Knee Brace/Cantilever:

- Knee brace/cantilever scaffolding shall be welded by a qualified welder and visually inspected before use.

Ladders:

- Ladders shall extend 36 inches above the landing.

- Extension and job-built ladders shall be secured to prevent movement or falling.

- Manufactured ladders shall be Class I or Class IA with properly working feet.

- The slope of the ladder from the base of the support shall be one(1) foot for every 4 feet of ladder length.
- All ladders shall be set on a firm base to prevent shifting and tipping.
- Ladders with broken or missing rungs or steps, broken or split side rails, or faulty or defective construction, shall not be used.
- Metal ladders shall not be used.
- Step ladders shall not be used as a leaning ladder.
- Employees shall not work off the top two steps of a stepladder.
- Personnel shall have both hands free of tools, materials, or equipment, while climbing and descending ladders.
- Personnel shall face the ladder when climbing and descending.

TRAINING REQUIREMENTS

The Project Manager will be responsible for implementing the employee training and information program. The format for the program may include classroom instruction, safety tool box meetings, and other forms of group or singular instructions.

Instructions are normally communicated verbally or in writing through the employee's Supervisor. The Project Manager is responsible for assuring Supervisors are qualified or competent in the following areas:

- Fall hazards and falling object hazards.
- Electrical hazards (protection from electrical hazards for erecting, maintaining, and dismantling).
- Fall protection and protection systems.
- Proper and safe handling of materials.
- Trained in the maximum intended loads and load-carrying capacities.
- Any other pertinent requirements.
- All company employees will be trained in the above mentioned, along with any additional basic or site requirements.

- The company will insure that each employee follows the safety guidelines as set forth in Safe Work Practices.

SCAFFOLDING INSPECTION REPORT

Client:_____
Job No:_____ Date:_____

Scaffold
Location:_____Time:_____:____AM/PM

Inspected by:_____

NOTE: Scaffold shall not be used unless these items are found satisfactory.

SECTION 1.		Yes	No	Comments
1.	Base plates/screw jacks on firm contact with sills/deck to prevent settling.	____		_____
2.	Scaffold appears to be level and verticals are plumb.	____	____	_____
3.	Safe, proper access and egress provided to all work platforms.	____	____	_____
4.	All platforms properly/tightly planked and secured from movement.	____	_____	_____
5.	All toeboards secured in place.	_____	_____	_____
6.	All guardrails and midrails in place.	_____	_____	_____
7.	Are vertical legs rigidly braced to prevent swaying.	____	____	_____
8.	Scaffold anchored or equalized (4 to 1) to prevent movement (butts/ties installed).	____	____	_____
9.	No energized, unprotected electrical is within 12 feet of the scaffold.	____	____	_____
10.	Has the scaffold been tagged and has not been altered.	____	_____	_____

SECTION 2.

		Yes	No	Comments
1.	Scaffold planks construction grade lumber and in sound condition.	____	____	_____
2.	Are all planking and toeboards in place and secured.	____	____	_____
3.	All guardrails and midrails in place and secured.	____	____	_____
4.	All tools and material raised and lowered to locations just carried by employees.	____	____	_____
5.	Working platforms clear of all loose tools, cords, material, etc.	____	____	_____
6.	Exit ways and ladders clear and unobstructed.	____	____	_____
7.	Stair and planks free of debris or slippery surface.	____	____	_____
8.	Work being performed on the scaffold in accordance with load ratings.	____	____	_____
9.	Have barricades been installed, scaffold tags been placed properly.	____	____	_____

Inspector:_____ _____
Print Sign

Supervisor:_____ _____
Print Sign

Scaffold Size:_____

NOTES:_____

_____

_____

SCAFFOLD SAFETY AND COMPLIANCE TEST

NAME:_____ DATE:_____ SCORE:_____

SSN:_____

_____ 1. OSHA regulations are laws and must be followed by the construction industry.

True or False

_____ 2. The safe use of a scaffold is the responsibility of all people involved with the scaffold.

True or False

_____ 3. Scaffolds may only be erected, altered, or dismantled under the supervision of a/an

A. Authorized Person
B. Competent Person
C. Skilled Person
D. Qualified Person

_____ 4. All scaffolds must be built on

A. Anything that looks like it will hold the intended load firmly.
B. Base plates, mud sills, or other adequate firm foundation.
C. It makes no real difference as long as it is braced properly.
D. Solid ground.

_____ 5. Scaffold mud sills help distribute the leg or vertical loads to the soil, asphalt, concrete, etc.

True or False

_____ 6. Where should the bottom runners be placed on the scaffold?

A. Four inches from the bottom of the legs.
B. About knee high.
C. As close to the base as possible.
D. They should always be attached to the screw jacks.

_____ 7. X-Bracing means to attach two braces on each side of the scaffold to form an X shape at all angles.

True or False

_____ 8. How high above the base should handrails be?

A. 38 to 42 inches
B. 36 to 45 inches
C. 42 to 45 inches
D. None of the above

_____ 9. An access ladder should be installed on all scaffolds more than

A. 4 feet above or below a point of access
B. 3 feet above or below a point of access
C. 2 feet above or below a point of access
D. 1 foot above or below a point of access

_____ 10. Ladders should be attached at a place on the scaffold that is less likely to cause

A. Swaying
B. Damage
C. Tripping
D. Injury

_____ 11. Each scaffold deck shall be fully planked so that the gap between each plank is no more than

A. 2 inches
B. 1 inch
C. 3 inches
D. There can be no gaps

_____ 12. The minimum board overhang is 10 inches past the bearer bar.

True or False

_____ 13. The maximum overhang of a board 10 feet or less is

A. 18 inches
B. 10 inches
C. 12 inches
D. 9 inches

_____ 14. When planks are overlapped, the minimum overlap is

A. 14 inches
B. 12 inches
C. 16 inches
D. 8 inches

_____ 15. Toeboards are to be on all open sides of a scaffold when the deck is higher than

A. 6 feet or more
B. 8 feet or more
C. 7½ feet or more
D. 10 feet or more

_____ 16. Toeboards must be at least 3½ inches high and have no more than ¼ inch gap between the toeboard and the deck.

True or False

_____ 17. All scaffold end frames must be locked together to prevent

A. Tipping
B. To help scaffold stay plumb
C. Swaying
D. Uplift

_____ 18. A tube and coupler scaffold more than 125 feet in height must be designed by a competent engineer with at least two years scaffold experience.

True or False

_____ 19. Guys or ties should be placed as close to the verticals as possible.

True or False

_____ 20. The casters on mobile scaffolds should never be locked in case they need to be moved during emergencies.

True or False

_____ 21. Horizontal and diagonal bracing is not preferred on a mobile scaffold.

True or False

_____ 22. A scaffold that is made to be heavy-duty will hold 25 pounds per square foot.

True or False

_____ 23. A screw jack shall be used on scaffolds to help

A. Make it taller
B. Level it
C. Hold it in place
D. Keep it from falling over

_____ 24. Knot holes in planks may be any size as long as they are not loose or missing.

True or False

____ 25. A scaffold plank must weigh at least

A. 45 pounds
B. 55 pounds
C. 65 pounds
D. None of the above is correct

_____ 26. Scaffold planks that are 10 feet long or more may hang beyond the bearer bar by a minimum/maximum of_____per the construction standard 29 CFR 1926.450.

A. 6 - 14 inches
B. 8 - 18 inches
C. 6 - 18 inches
D. 6 - 12 inches

_____ 27. Saw kerfs do not damage the integrity of the plank.

True or False

_____ 28. Scaffold erectors do not need to have an understanding of all the factors which may affect the strength, stability, and the effectiveness of a completed scaffold.

True or False

_____ 29. Scaffolds and their components shall be capable of supporting, without failure, at least four times the maximum intended load. This is known as a 4 to 1 safety factor.

True or False

_____ 30. On tube and coupler scaffold, the bearers shall be at least_____but not more than _____inches longer than the post spacing or runner spacing.

A. Not less than 4", not more than 12"
B. Not less than 2", not more than 6"
C. Not less than 6", not more than 14"
D. None of the above

SCAFFOLD SAFETY AND COMPLIANCE TEST

ANSWER SHEET

1. T
2. T
3. B
4. B
5. T
6. C
7. F
8. D
9. C
10. C
11. B
12. F
13. C
14. B
15. D
16. T
17. D
18. F
19. T
20. F
21. F
22. F
23. B
24. F
25. D
26. D
27. F
28. F
29. T
30. A

TOOL SAFETY
HAND & POWER

Applicable OSHA Standards: 29 CFR 1910 Subpart P

PURPOSE

The purpose of this program is to provide direction and to establish the general requirements to be implemented when using tools, hand or power.

SCOPE

The scope of this program applies to all job site locations where tool operations are or may be conducted. The requirements, as set forth in this program, shall be implemented to the fullest extent possible and shall be considered as the minimum requirements of this program.

RESPONSIBILITIES

The primary responsibilities for the implementation of requirements of this program shall rest with the job site Supervisor, Foreman, or Leadsman of record.

The Director of Safety or designee shall be responsible to provide for the monitoring of the work activities to assure compliance to the requirements of this program and to the Customer/Client safety requirements.

The Project Manager, Vice President, or Chief Executive Officer shall be responsible for disciplinary action resulting from violation or failure of assigned persons to implement the requirements of this program.

SMALL TOOLS AND EQUIPMENT

Many of the accidents and/or injuries which occur each year can be attributed to improper or unsafe use of tools or the use of tools which are in poor condition. The few extra seconds required examining tools and to use them properly can reduce the number of accident/injuries.

NOTE: Condition of tools; all hand, power, and similar equipment, whether furnished by the employee or employer, shall be maintained in a safe working condition.

GENERAL PRECAUTIONS

- Never remove or interfere with the operation of any tool guard or safety features.

- Always use the right tool for the right job.

- Keep tools clean and check their condition prior to using. If heads or striking tools become mushroomed or burred, have them dressed. If handles of tools are splintered, broken, or loose, have them replaced.

- Tools must always be returned to their proper storage place and not left where they create a hazard.

- Do not carry tools in pockets. It is dangerous; especially if tools are sharp or pointed.

- Do not use excessive pressure or force on any hand tool or the use of cheaters to apply more force.

- Metal measuring tapes having metal strands woven into fabric, brassbound rules, wire or metal bound hose, or rope with wire core **shall not be used** when working on or near energized electrical circuits or equipment.

- Tools should either be dropped or thrown from place to place or from employee to employee.

- Tools that must be raised or lowered from one elevation to another shall be placed in an approved tool bucket or firmly attached to hand-line (rope).

NOTE: Handmade or job made tools should not be used. In the event a special tool is needed for a specific task for which no such manufactured tool exists, proper engineering design, specifications, and management approval shall be obtained prior to construction of such a tool.

HAND TOOLS

- Employees shall inspect tools prior to use. Damaged or defective tools shall be tagged "Do not operate" and removed from service as soon as the defect or damage is discovered.

- Wooden handles of tools, such as hammers, picks, etc. **shall not be** taped or covered in such a way as to hide damage or defects.

- Cracked or damaged wooden handles of tools, such as hammers, shall be replaced immediately upon discovery of the damage.

- Hand tools shall be used only for the purpose for which they were intended.

- Tools shall not be altered such as welding extensions on wrench handles or pad eyes on hammer wrenches.

- Every tool was designed to do a certain job. Use it only for its intended purpose! Every tool requires care.

- Keep your hand tools in peak condition, sharp, clean, oiled, and not abused.

- Do not use tools for pry bars.

- Do not use two wrenches to increase leverage capacity.

SCREWDRIVERS

- Use the right size and type screwdriver for the job.

- Do not hold screwdriver tip in palm of hand. The screwdriver may slip causing injury.

- Screwdrivers should be filed properly to prevent slipping.

- Do not use a screwdriver as a pry bar.

HAMMERS

- Hammers shall have a clear path for back swing and the target area shall be free from obstructions.

- Hammers with mushroomed heads shall never be used as they might glance off the target or the damaged head may splinter and send metal fragments flying.

- Never hold, with you hands, any object to be struck with a hammer by another employee. Hold the object with pliers or another tong-type device.

- Wooden handles shall be kept free of splinters or cracks and shall be kept tight in the tool.

FILES

- Do not use a file for a pry or hammer as it is brittle and breaks easily.

- Files should be fitted with wooden handles to protect employees from the pointed file end.

PRY BARS

- Be sure bite of bar is secure under load by first applying a slight pressure.
- Check your own balance before exerting full force.
- A cheater bar **shall not be used** on pry bars.

WRENCHES

- Wrenches should be pushed away from the body, if possible, to reduce the chance of the wrench slipping and striking the user in the face or body.
- Adjustable (crescent) and combination wrenches should be snug on bolts and nuts to avoid slipping.
- Never use a wrench as a hammer or a hammer on a wrench that is not to be used as such.
- **Never** use a cheater on a wrench or "double wrench" a nut. Use a hammer wrench or impact instead.
- Wrenches shall not be used when jaws are sprung to the point that slippage occurs.

DRILL BITS

- Avoid unsafe defects; worn or battered heads, over tempered, and dull cutting edges.
- Do not use drill as a reamer (get a larger bit), use proper bit for drilling steel or brass or copper without removing the lip, or change bits without unplugging cord.

SHOVELS, PICK AXES AND AXES

- Be aware of unsafe defects; rough, loose, cracked, or split handles; dull or nicked edges, over tempered surfaces.
- Do not use a wedge, pry bar, or hammer.

POWER TOOLS

- All tools shall be inspected for defects or damage prior to use. Tools found to be damaged or defective shall be immediately tagged "Do Not Use" and removed from service.

- Protective guards on power tools shall not be removed. **Do not use** tools without guards in place.

- Tools shall not be dropped or allowed to strike another object in such a fashion that damage may occur.

- The power source on tools shall be physically disconnected prior to attempting any repairs or attachment changes. Always double check to make sure no one has come along and plugged the cord back in.

- Employees shall avoid loose fitting clothing when operating power tools. Shirttails must be tucked in the trousers/pants while operating power tools.

- Electrical tools shall be of the double insulated type with Underwriters Laboratory approval or be of the three wires grounded type.

- All electrical tools and power cords must be inspected per the Assured Grounding program guidelines and display the proper color-codes for the current inspection period.

- All electrical tools and power cords must be used with a Ground Fault Interrupter to protect against faulty ground.

- Electrical tools shall not be hoisted or carried by their power cords.

- Employees shall not operate electrical tools while standing in water or wet locations.

- Extension cords shall be of the three wires grounded type and be continuous without splice or repair. Extension cords shall reflect the proper color code.

- Extension cords shall be kept clears of traffic aisles and shall not be placed across vehicle traffic paths unless guarded to prevent damage. (Recommend to run cords 7' over head to prevent tripping hazards).

- Extension cords shall not be placed through doorways unless stops or guards are put in place to prevent pinching of the cord by the door.

- Extension cords shall not be suspended by wire or nails.

- Do not operate power tools without instructions from your supervisor. (Note: Some activities will require permits before work begins).

- Torque: The circular or rotating motion in tools such as drills, impact wrenches, saws, etc. which results in a strong twisting force. Be prepared in case of jamming.

- Have good footing. Use two hands. Ask for help as necessary and be prepared to release the power switch or trigger.

- Flying objects can result from operating almost any power tool, so you must always:

    1. Warn people around you

    2. Use proper personal protective equipment

    3. Avoid contact with moving parts

    4. Keep moving parts directed away from your body

    5. Do not "swing around" with the tool running. Someone might be behind you

- Be sure replacement parts conform to correct specifications. For example, grinder wheels shall be approved for the maximum RPM of the machine, wood cutting bits shall be for woodwork only, etc.

ELECTRICAL SAFETY WITH POWER TOOLS

The use of portable power tools can make a job go faster and easier. The misuse of portable power tools can cause electric shocks, burns, cuts and puncture wounds, severed fingers and limbs, broken bones, loss of eyesight, and even death. The slightest shock when using electrical equipment is an ominous warning of a potentially serious safety hazard. A slight shock when using the equipment in one location might result in electrocution if the body makes a little better contact with the earth or a grounded object in another location.

Electrocution is the leading cause of fatal injury in construction related activities. Most such injuries result from the use of portable tools powered by 110 volt electricity. Here are some things you should know to protect yourself from electric shock hazards:

- HAZARDS OF USING ELECTRICAL POWER TOOLS ARE:

    1. Electrical shock from improper grounding or from attempting to adjust, clean, or service the tool without disconnecting the power.

    2. Contact with rotating and fast moving parts. Poor housekeeping, broken bits and blades, and lack of concentration can lead to serious cuts or amputations.

    3. Fire caused by defective electrical cords, overheated motors, sparking, and working near flammable liquids or gases.

- YOU CAN PROTECT YOURSELF BY:

    1. Choosing the right tool for the job. This will depend on the work to be done. Most commonly used power tools include drills, saws, sanders, routers, and grinders.

    2. Know how to use the tools safely and properly by reading the owner's manual carefully before use, by getting training from an experienced tool user, and be practicing before actually doing the job.

    3. Repair tools when needed. Worn or defective electrical tools should be taken out of service and repaired immediately. Every time you use an improperly grounded or unguarded power tool, you are playing "Russian Roulette".

    4. Transport and store tools properly. Power tools should be transported with extra care. Always hold the handle (not the cord) with your finger off the trigger. Place each tool in a safe storage area after use, preferably in a locked cabinet or tool box.

    5. Keep your work area clean, dry, and orderly. Power tools should not be used when working on slippery floors, in poorly lighted work areas, or near flammable liquids or gases.

    6. Electric cords also deserve attention. They may become frayed leading to electrical shock or fire. Light-duty extension cords may become overheated when improperly used. They can also present tripping hazards.

- GROUND FAULT CURRENT INTERRUPTERS

    1. GFCIs will be required whenever a Form Works Inc.employee uses an extension cord or a receptacle that is not part of a permanent building or structure that exceeds 12 volts.

    2. Employees will visually inspect(pre – use) all cords, receptacles, attachment cap, that has the potential to become damaged.(external defects, such has deformed or missing pins or insulation

    3. GFCIs shall be used on all, 120 volt, single phase, 15 and 20-ampere receptacle outlets, which are not part of the permanent wiring of the building or structure.Receptacles on a two wire, single phase portable or vehicle mounted generator rated not more than 5kw, where the circuit conductors of the generator are insulated from the generator frame and all other grounded surfaces, need not be protected with GFCIs.

Note:
A jobsite close to electrical lines shall be pre-planned and written procedures outlined before attempting to do the job. The Safety Department must review and approve any procedures that involve working in an area that has any electrical exposure.

PNEUMATIC TOOLS (AIR) - General

- When gas or diesel compressors furnish the air source, keep them outside or vent them to the outside to prevent carbon monoxide poisoning.

    1. If you are using a permanent source of air, make sure it is not oxygen. Oxygen mixed with the oil in your air hose and tool will or may cause an instant explosion and fire.

    2. All hoses exceeding 1/2 inch inside diameter shall have a safety device at the source of supply or branch line to reduce pressure in case of hose failure.

- Air hoses and connections shall be checked prior to each use for defects.

- Air hoses should be protected from vehicle traffic, pedestrians, and sharp objects.

- Attachments on air tools shall be secured by retainer pins and rings. The retainer rings should be taped to prevent accidental placement.

- All crows foot type air connections shall be safety wired or pinned.

- Disconnect source and "bleed" hose before breaking connection on any air tool. To insure proper bleeding close the valve at the air source and insure all valves and regulators between the source and the tool are in the open position before bleeding air from tool.

- Never crimp hoses to stop air.

- Do not let your hoses create tripping hazards. Keep out of traffic areas, walkways, stairs, etc.

- Never point a pneumatic hammer at anyone. There is always the chance the retainer may fail.

    1. The bit should be in contact with the work surface before pulling the trigger.

- Governors require strict maintenance to prevent dangerous over speeding of grinders, drills, wrenches, etc.

- Always wear eye, face, and ear protection when using air tools.

- Air used for cleaning machines shall be regulated to 30 psi or less.

1. When compressed air is used for cleaning purposes, a nozzle must be provided with a shut off valve at the outlet of the hose.

- Metatarsal and shin guards should be worn for complete foot protection when using ground tampers that leave the ground such as "pogo sticks". This is in addition to other PPE requirements.

- Metatarsal guards and shin guards should be worn together when using pavement breakers or jackhammers. This is in addition to other PPE requirements.

- Extreme care shall be taken when working with compressed air. It should never be blown against clothing or any part of the body.

- Storage and cleaning are very important with any tool. Keep tools clean and stored properly where they belong.

- Air tools shall not be hoisted or carried by their air hoses.

POWDER ACTIVATED TOOLS

Hilti and Ramset are just two common names of powder activated tools. They should all be used with the same respect as a firearm. Remember the general safety items.

SPECIAL NOTE:
No one is permitted to use any powder activated tool unless the employee has a current operator's license issued by a licensed instructor by the manufacturer.

CHAINFALLS AND COMEALONGS

Employees have to rely on special lifting and hoisting equipment. Most of our work requires moving equipment and materials that can seldom be lifted by hand alone.

These portable hand hoists are very useful. Knowledge of the following portable hoisting tools and their safe use can save you much time in performing work duties and make lifting and pulling bulky items an easier task.

- Chainfalls and comealongs are designed to be operated by one employee only. If it takes two to raise or move a load, chances are the load is greater than the capacity of the lifting device or the device is malfunctioned. Never wrap the chain around the load.

- Know the weight of the load and capacity of the lifting device. **Do Not Exceed!**

- Periodic inspections, for instance monthly, or chainfalls and come along are required and must be documented.

CHAINFALLS

- Lifting chainfalls are low speed, geared for precision lifting, and have built-in, no-slip brakes. There are two lifting hooks; one swivel hook mounted on the housing and the other located at the end of the lifting chain. Chainfalls are available in a variety of weight capacities ranging from 1/4 ton to 10 tons with assorted pulling chain lengths for longer reaches to the work area.

- Chainfalls is designed primarily for vertical lifting. The lifting hooks on the housing and chain are tempered but can be or partially straightened and shall therefore be provided with a safety clip latch to prevent hooks from being dislodged. Before making a lift with the chainfall, be sure the load is rigged properly and the lift area is barricaded and free of personnel. Make all lifts true vertically to prevent a shifting, swaying load and undo wear on the hoist. Never use a chainfall for a horizontal pull. The designed chain sprocket engagement will not be obtained.

COMEALONG

- This compact hoist offers use in close area, toolbox size storage, and versatility in almost any lifting and pulling situation.

- The come along is most popular because of its heavy-duty construction and greater lifting ability. A ratchet lever moves the lifting chain or cable. The lever has three
- positions, **forward** for lifting or pulling, **neutral** for free gear travel, and **reverse** for lowering or releasing tension.

- Come along have one hook attached to the gear housing and one at the end of the lifting chain or cable. They are available in various lifting chain and cable lengths for longer reaching pulls and lifts. They range in capacities from 1/4 ton to 6 tons.

- Considered the most versatile of the hand-operated hoists, the come along can be used in vertical lifting (only in certain situation), pulling, and binding on any plane and in moving heavy objects. A ratchet movement of the hand lever, even under tension accomplishes pulling or releasing. Therefore, if it takes two employees to crank the hand lever, the hoist is overloaded for the job. Avoid using cable-type lever hoists if the cable is frayed or damaged. Never use a cheater bar on the handle of the come along.

PEDESTAL, BENCH, AND PORTABLE GRINDERS - General

- Each employee is responsible for inspection of the grinder he/she is using.
- Wheel rating must exceed the maximum potential RPM of the grinder on which it is mounted.
- No special adapters, arbors, or other improvisation are not permitted, nor may more than one wheel be mounted between a single set of flanges.
- All abrasive wheels shall be mounted between flanges which are at least 1/3 the diameter of the wheel.
- On all portable tools, the control switch shall be instant-pressure controlled without a locking pin.
- Wheels should be stored in a dry place with constant temperature above freezing and protected from physical damage, which could cause cracking.
- Guards shall be installed and maintained.
- The proper respiratory protection shall be used in the event dust hazards exists.
- The proper eye/face, hand, and ear protection shall be used.
- Guards, work rests, eye shields, and other permanent protection devices shall not be removed from any grinding or buffing wheels.
- The tool room shall perform initial inspection and subsequent maintenance of all grinders. Inspections will be made on an established schedule and records maintained by the Tool Room and filed with the Safety Department.
- The using department shall be responsible for installing all wheels and determining that they are designed for the speed of the grinder. (Any questions, you should contact the Tool Room or Main Office).
- The using department shall be responsible for maintaining the maximum distance between the work rest and the wheel - 1/8" and tongue guard 1/4".
- Grinding shall not be performed on the side of the wheel.

MONTHLY TOOL INSPECTION FORM

JOB #_____ FACILITY_____

DATE_____

NOTE: Make a copy of this form and send it to the Safety Department at the Main Office.

DATE	ITEM	ACCEPTABLE		CORRECTIVE ACTION
		YES	NO	

_____ _____

INSPECTOR'S NAME (print) INSPECTOR'S SIGNATURE

_____ _____

SUPERVISOR NAME (print) SUPERVISOR SIGNATURE

ACCIDENT AND INCIDENT PROCEDURES

INTRODUCTION

Any injury or incident that could cause injury must be reported to the Safety, Health and Environmental Department.

Injuries will be documented on the following reports:

1. First Report of Injury or Illness
2. Employer's Supplemental Report of Injury
3. Supervisor's Investigation Report
4. Medical Questionnaire
5. Waiver of Immediate Professional Medical Attention

Incidents that do not result in injury must be thoroughly investigated. Incidents that result in the administering of First Aid will be recorded on the First Aid Register.

For all incidents, the job supervisor will write a summary of events that details the nature, cause and proposed remedy for the situation.

MEDICAL CARE OF AN INJURED EMPLOYEE

When an employee is injured on the job, the company will provide him/her with the proper medical attention. Each job will be provided a listing of physicians, hospitals and ambulances to contact during an emergency.

An injured employee is encouraged to use the listed services because these services are qualified, by experience, to handle trauma cases. The employee, however, has the right to utilize the physician of his choice.

WHEN AN INJURY OCCURS

1. The employee is to report ALL injuries immediately to the job supervisor. The S.H.E. Department maintains a First Aid Register on all injuries.

2. Should the employee require treatment by a physician, the company will provide transportation

3. Employees should not seek further medical treatment from a physician for a job injury without notifying his job supervisor.

EMERGENCY REPORTING OF SERIOUS INJURIES

Contact the Director of Safety

1. When reporting an accident, give the exact location, where the accident occurred, cause and if possible a brief description of the injuries.

2. Supervisors in the accident area will assist in performance of their emergency duties; i.e., clearing area of spectators, gathering witnesses, etc.

4. The injured person or persons should not be moved unless they are exposed to dangerous environment that could cause further injury.

5. Only trained personnel should administer first aid to the injured.

6. Begin accident investigation.

MEDICAL TREATMENT DURING IRREGULAR WORK HOURS

In the event medical treatment is needed at any time other than normal working hours Monday through Friday, the case should be handled as outlined below:

1. If the First-Aid attendant determines that the injured should be seen by a Doctor immediately, supervision of the injured employee will arrange for this, contacting a medical facility from the Authorized Medical Facility list.

2. If none of these Doctors can be contacted, the injured should be taken to the nearest Hospital. The Emergency Room should be called and notified of the emergency that is on its way, and request the Doctor be on hand to administer treatment.

3. Transportation to the hospital will be arranged by the injured employee's supervision.

EMPLOYEE REFUSAL OF MEDICAL ATTENTION

There are times it is important to seek medical attention for an injury, but an employee cannot be forced to accept medical attention, in the event an employee refuses medical

treatment for any reason, the WAIVER OF IMMEDIATE PROFESSIONAL MEDICAL ATTENTION form, Attachment "E", must be filled out.

INCIDENT AND ACCIDENT INVESTIGATION PROCEDURES

The purpose of this procedure is to establish a method of investigating all serious incidents, accidents and lost time cases.

Purpose of Investigation

1. Establish the exact, factual cause of the incident or accident.

2. Determine what steps must be taken to prevent recurrence of the same type of incident and to define exactly who is to initiate these preventive measures.

Investigation Committee

The investigation committee will be composed of the following:

1. Area Safety, Health and Environmental Representative

2. Supervisor

3. All witnesses to the occurrence

4. Other personnel as deemed advisable

Timeliness of the investigation

All investigations will begin on day of occurrence. This will prevent the possible loss of important information. Only on rare occasions will it be necessary to delay the investigation.

Investigating Procedure

1. When the committee convenes and after the Area SHE representative has stated the purpose of the meeting, the supervisor of the crew involved will be asked to describe in detail:

    - The nature of the work being performed prior to and at the time of the incident.

    - The exact instructions given to the crew and especially the employees directly involved.

- The account of how work was planned and any specific safety instructions that were given.

2. During the establishment of facts, factors such as age of employee, length of experience in the type of work they were doing, service on the project, their injury record and all other pertinent information which will serve in formulating plans for the prevention of similar occurrences.

3. Photographs should be taken whenever possible. Assure that time and conditions are noted and how these conditions differ from those at the time of the incident. The photographer should be careful not to take pictures, which may distort the view by an unusual camera angle.

4. Written statements will be taken from witnesses and then the witnesses will be asked to sign the statements after they read them. If this procedure is questioned, explain that statements are being obtained from many people; and it is desirable to be able to read over the statement again, if necessary, to help keep separate the facts observed by different people. The written and signed statements should become a part of the Accident Investigation and made available for future use.

5. Request to take pictures, received from authorities who are legally empowered to investigate accidents, (state, county, etc.) should be granted; however, someone should be assigned to accompany them to observe and protest anything unusual about their conduct.

6. Based on the complete assembly of facts, step to prevent recurrence should be formulated.

REPORTING AN INJURY OR ILLNESS

The following reports must be completed when an employee reports a work related injury or illness.

FIRST REPORT OF INJURY OR ILLNESS

PURPOSE:

The purpose of the First Report of Injury or Illness is to provide the insurance carrier, Industrial Accident Board and the S.H.E. Department with a record of an injury to an employee.

INSTRUCTIONS:

- The First Report of Injury or Illness must be completed on all injuries or illnesses.
- It must be prepared by the job supervisor and submitted to the Safety Department by the end of the shift..
- Forms can be obtained from the Area Offices.

EMPLOYERS SUPPLEMENTAL REPORT OF INJURY

PURPOSE:

To report the change in status of an injured employee from that reported on the employer's First Report of Injury.

INSTRUCTIONS:

This report must be filed as follows:

- After a change in employee's status.
- 2 days after the First Report of Injury if the employee has not returned to work.
- Upon the employee's return to work after a disabling injury.
- In the event of the employee's death.
  This report is completed and filed by the S.H.E. Department.

SUPERVISOR'S INVESTIGATION OF ACCIDENT

- This report will be prepared by the job supervisor and submitted at the same time as the First Report of Injury or Illness.
- This report is for internal use only.
- Forms are available from the Area Offices. See Attachment C.

MEDICAL QUESTIONNAIRE

- The injured employee completes this report. The employee should complete this as soon as possible while the details of the accident are clear.

- Forms are available from the Area Offices. See attached example.

WAIVER OF IMMEDIATE PROFESSIONAL MEDICAL ATTENTION

- In the event that an employee receives a minor injury and refuses medical attention, the attached waiver must be completed and signed by the employee.

- Forms are available from the Area Offices. See attached example.

LATE REPORTING ON AN INJURY OR ILLNESS

The supervisor must complete the First Injury Report of Injury and the Supervisor's Investigation report when an injury is reported late. The First Injury Report will be notated as "ALLEGED". Additionally, the employee must complete the medical questionnaire. Submit all forms to the S.H.E. Department.

FATALITIES

- The President or Safety Director will be the only person to release information.

- The President or Safety Director will notify the next of kin.

- The job supervisor will ensure that all witnesses report to a designated area in order to record their account of the events.

- The general area of the accident should not be changed or any item moved. Of course, appropriate corrective action must be taken if further injury is possible.

ATTACHMENT "A"

FIRST REPORT OF INJURY

Send the specified copies to your
Workers' Compensation Insurance Carrier
and the injured employee.
***Employers - Do not send this form to the**
Texas Workers' Compensation Commission,
Unless the Commission specifically requests a direct filing.

TWCC CLAIM #

CARRIER'S CLAIM #

1. Name (Last, First, M.I.)

2. Sex F ☐ ☐

3. Social Security Number - -

4. Home Phone ( )

5. Date of Birth (m-d-y) - -

6. Does the Employee Speak English? If No, Specify Language
YES ☐ NO ☐

7. Race White ☐ Black ☐ Asian ☐

8. Ethnicity Hispanic ☐ Native American ☐ Other ☐

9. Mailing Address Street or P.O. Box
City State Zip Code County

10. Marital Status
Married ☐ Widowed ☐ Separated ☐ Single ☐ Divorced ☐

11. Number of Dependent Children

12. Spouse's Name

13. Doctor's Name

14. Doctor's Mailing Address (Street or P.O.Box)
City State Zip Code

15. Date of Injury (m-d-y) - -

16. Time of Injury : am ☐ pm ☐

17. Date Lost Time Began (m-d-y) - -

18. Nature of Injury*

19. Part of Body Injured or Exposed*

20. How and Why Injury/Illness Occurred*

21. Was employee doing his regular job? YES ☐ NO ☐

22. Worksite Location of Injury (stairs, dock, etc.)*

23. Address Where Injury or Exposure Occurred Name of business if incident occurred on a business site
Street or P.O. Box County
City State Zip Code

24. Cause of Injury(fall, tool, machine, etc.)*

25. List Witnesses

26. Return to work date/or expected (m-d-y) - -

27. Did employee die? YES ☐ NO ☐

28. Supervisor's Name

29. Date Reported (m-d-y) - -

30. Date of Hire (m-d-y) - -

31. Was employee hired or recruited in Texas? YES ☐ NO ☐

32. Length of Service in Current Position Months_____Years _____

33. Length of Service in Occupation Months_____Years

34. Employee Payroll Classification Code

35. Occupation of Injured Worker

36. Rate of Pay at this Job $_____Hourly $_____Weekly

37. Full Work Week is: _____Hours _____Days

38. Last Paycheck was: $_____for Hours or_____Days

39. Is employee an Owner, Partner, or Corporate Officer? YES ☐ NO ☐

40. Name and Title of Person Completing Form

41. Name of Business

42. Business Mailing Address and Telephone Number
Street or P.O. Box Telephone ( )
City State Zip Code

43. Business Location (If different from mailing address)
Number and Street
City State Zip Code

44. Federal Tax Identification Number

45. Primary Standard Industrial Classification (SIC) Code* (4 digit)

46. Specific SIC Code* (4 digit)

47. Texas Comptroller Taxpayer No.

48. Workers' Compensation Insurance Company

49. Policy Number

50. Did you request accident prevention services in past 12 months?
YES ☐ NO ☐ If yes, did you receive them? YES ☐ NO ☐

51. Signature and Title (READ INSTRUCTIONS ON INSTRUCTION SHEET BEFORE SIGNING)
X_____ Date _____

ATTACHMENT "B"

EMPLOYERS SUPPLEMENTAL REPORT OF INJURY

DO NOT SEND THIS FORM TO TEXAS WORKERS' COMPENSATION COMMISSION UNLESS REQUESTED.

CARRIER'S CLAIM # _____

TWCC # _____

WHEN AND WHERE TO FILE: ***For all injuries occuring January 1, 1991 or after*** that require a TWCC-1, Employer's First Report of Injury, to be filed, the employer must file by first class mail or personal delivery a Supplemental Report of Injury (TWCC-6) with the employer's workers' compensation carrier and the injured employee: 1) within 3 days after the injured employee returns to work; 2) within 3 days when the employee, after returning to work, has an additional day or days of disability because of the injury; 3) within 10 days after the end of each pay period in which the employee has an increase or decrease of earnings during the time the employee is entitled to temporary income benefits; 4) within 10 days after the employee resigns or is terminated. If the injured employee is no longer employed by the employer, the employee is responsible for providing information to the carrier about amounts of earnings or offers of employment. The employee may use a TWCC-6, Employer's Supplemental Report of Injury for this purpose. **An employee has disability if he/she is unable to work as a result of the injury or has returned to work earning less than pre-injury wages because of the injury**.

EMPLOYEE INFORMATION

1. Employee's Name (Last, First M.I.) and Telephone No. ( )	2. Social Security No.	3. Date of Injury (m-d-y)
4. Employee's Mailing Address (Street or P.O. Box)		
City	State	Zip Code

TO EMPLOYER: Based on above rule requirements, check boxes which show reasons for filing Supplemental Report of Injury this date:

☐ ***employee returned to work***	☐ ***change in weekly earnings after injury***	☐ ***employee terminated/resigned***	☐ ***additional day(s) of disability***
Complete Block 5a or 5b Complete Blocks 6 and 7	Complete Blocks 5a or 5b Complete Blocks 7 and 8	Complete Block 5a or 5b Complete Block 7 Complete Block 9	Complete Block 5b Complete Block 7

5. a) If initial filing of TWCC-6, first day of disability due to injury (m-d-y)	5. b) If second or subsequent filing of TWCC-6, give first day of disability due to injury for this period only (m-d-y)
6. Date of Return to Work _____ (Check box) ☐ Full Duty, Full Pay ☐ Limited Duty: Full Pay ☐ Reduced Pay	7. Weekly and Hourly Earnings at Time of This Report $_____ weekly _____ (Check box) ☐ Same as Preinjury Wage $_____ hourly ☐ Increase from Preinjury Wages ☐ Decrease from Preinjury Wages
8. No. of Hours Working Weekly at Time of This Report (Check box) ☐ Increase from Preinjury Hours Worked Weekly ☐ Same as Preinjury ☐ Decrease from Preinjury Hours Worked Weekly	9. If the employee resigns or is terminated, fill in the appropriate section. ☐ Date of Resignation (m-d-y) _____ ☐ Date of Termination (m-d-y) _____
10. If applicable, eight days of disability began on (m-d-y) [see above definition of disability]	9a. Reason for Resignation or Termination
11. Has injured employee died? If so, give date of death (m-d-y)	12. Was employee on limited duty at time of termination? Yes ☐ No ☐

EMPLOYER INFORMATION

13. Employer's Business Name	14. Telephone No. ( )
15. Employer's Business Mailing Address (Street or P.O. Box)	
City	State Zip Code
16. Name of Workers' Compensation Carrier for Above Injury	
17. The information provided in this report is accurate to the best of my knowledge. It may be relied upon for evaluation of the named employee's eligibility for benefits.	
Signature and Title of Person Completing Form ☐ Employer ☐ Employee	Date

ATTACHMENT "C"

SUPERVISORS INVESTIGATION OF ACCIDENT

Employees Name: _____
Social Security Number: _____
Address: _____
Phone Number: _____ Relative Phone Number: _____
Job Position/Title: _____
Task: _____
Tools Being Used: _____
Equipment Being Used: _____
Location: _____
Location Address: _____
Supervisors Name: _____
Date/Time of Injury or Illness: _____
Date/Time Injury or Illness Reported: _____ Name(s) of Witnesses: _____
Witnesses Phone Number(s): _____

Incident Resulted In: ☐ Injury ☐ Illness ☐ Fatality ☐ Property Damage

First Aid Given? _____ Medical Treatment Required? _____ Workdays Lost? _____

Describe How the Incident Occurred: _____
_____
_____
_____

What Actions, Events, or Conditions Contributed most Directly to this Incident: _____
_____
_____
_____

Corrective Action: _____
_____
_____
_____
_____

Corrective Action follow-up Date: _____

Employee Signature: _____ Date: _____

Supervisor Signature: _____ Date: _____

ATTACHMENT "D"

MEDICAL QUESTIONNAIRE

PLEASE ANSWER THE FOLLOWING QUESTIONS IN YOUR OWN HANDWRITING:

NAME:_____SS#_____-____-_____
ADDRESS:_____
CITY:_____STATE:_____ZIP_____

AGE: ____ CRAFT: _____ JOURNEYMAN OR HELPER

HOURLY RATE: _____

HOW LONG ON THIS PROJECT: _____

DATE OF OCCURRENCE: _____

EXACT TIME:_____AM PM

WHERE DID OCCURRENCE HAPPEN?
(EXACT LOCATION)

_____
_____
_____
_____

WHO WAS WORKING WITH YOU, LIST NAMES

_____
_____
_____
_____
_____

IF LIFTING, WHAT DID YOU LIFT?
_____

HOW MUCH WOULD YOU SAY IT WEIGHED?
_____

DESCRIBE IN YOU OWN WORDS EXACTLY WHAT HAPPENED:

_____
_____
_____

NAME OF SUPERVISOR:_____

HAVE YOU EVER INJURED OR HAD A PROBLEM WITH YOU BACK BEFORE TODAY?

IF YES, PLEASE DESCRIBE:

_____
_____
_____
_____
_____

THE ABOVE IS TRUE AND CORRECT.

SIGNATURE_____**DATE**_____

WITNESS_____**DATE**_____

TODAY'S DATE IS _____

ATTACHMENT "E"

WAIVER OF IMMEDIATE PROFESSIONAL MEDICAL ATTENTION

This is to certify that I have received what I consider to be a minor injury to my person, while working on the job for _____.

I have reported said injury to my supervisor, who has offered me immediate medical attention, which I do not wish to avail myself of at this time.

Signed: _____

Dated: _____

Witness: _____

Date: _____

Time: _____

PERSONAL PROTECTIVE EQUIPMENT

Applicable OSHA Standard: 29 CFR 1910 Subpart I

PURPOSE

Protective equipment, including personal protective equipment for eyes, face, head, and extremities, protective clothing, respiratory devices, and protective shields and barriers, shall be provided, used, and maintained in a sanitary and reliable condition wherever it is necessary by reason of hazards of processes or environment, chemical hazards, radiological hazards, or mechanical irritants encountered in a manner capable of causing injury or impairment in the function of any part of the body through absorption, inhalation or physical contact.

SCOPE

This program applies to all employees and subcontractors working within company controlled worksites.

APPLICATION

PPE devices alone should not be relied on to provide protection against hazards, but should be used in conjunction with guards, engineering controls, and sound manufacturing practices.

Our company will provide employees with the proper protective equipment (PPE) for use in their specific tasks.

This PPE includes but is not limited to eyes, face, head, respiratory, and extremities.

The PPE will be used, maintained and stored in accordance with the manufactures recommendations

EMPLOYEE OWNED EQUIPMENT

Where employees provide their own protective equipment, the site safety supervisor or designated representative shall be responsible to assure its adequacy, including proper maintenance, and sanitation of such equipment.

DESIGN

All PPE shall meet OSHA/NIOSH/ANSI standards and approval.

Where a standard may not apply a designated competent person will analyze the equipment and give approval or disapproval for the equipment's use.

HAZARD ASSESSMENT AND SELECTION

Selection of PPE will be based on supervision assessment of the hazards associated with the job site and the recommendations included on the safe work permit provided by the client.

Prior to the beginning of any job task, supervision will determine the PPE necessary to safeguard the employees assigned to do the work. When the job tasks are complicated in nature the site safety supervisor and the client safety representative will be consulted for their expertise in determining the proper PPE for the task.

Supervision will ensure that the PPE is available and is included on the work permit. The information on the permit will be discussed with the crew assigned to do the work.

When reviewing the scope of work prior to the commencement of the job supervision will assess the hazards associated with the work and its environment. This assessment will be distributed to the site safety supervisor/representative so they can determine the needs of the job.

PPE determined for the job will be verbally communicated to the employees during a tool box safety meeting prior to the commencement of the job.

PPE will be ordered in various sizes and types to accommodate a variety of individuals who may be assigned work.

DEFECTIVE AND DAMAGED EQUIPMENT

Defective or damaged equipment will not be used.

When PPE is removed for disposal it will be tagged as such, if not disposed of immediately.

TRAINING

The company will provide training to each employee who is required to use PPE. Each such employee shall be trained to know at least the following:

- When PPE is necessary;
- What PPE is necessary;
- How to properly don, remove, adjust, and wear PPE;

- The limitations of the PPE; and,

- The proper care, maintenance, useful life and disposal of the PPE.

Each affected employee shall demonstrate an understanding of the training, and the ability to use PPE properly, before being allowed to perform work requiring the use of PPE.

When supervision has reason to believe that any affected employee who has already been trained does not have the understanding and skill required the employee must be retrained. Circumstances where retraining is required include, but are not limited to, situations where:

- Changes in the workplace render previous training obsolete; or

- Changes in the types of PPE to be used render previous training obsolete; or

- Inadequacies in an affected employee's knowledge or use of assigned PPE indicate that the employee has not retained the requisite understanding or skill.

Supervision shall verify that each affected employee has received and understood the required training through a written certification that contains the name of each employee trained, the date(s) of training, and that identifies the subject of the certification.

EYE AND FACE PROTECTION

The minimum eye protection allowed outside of an office area is ANSI (Z.87.1-1989) approved side shield safety glasses.

Regular safety glasses are very similar in appearance to normal prescription glasses, but the safety glasses are designed to protect you from flying particles. Their lenses are impact-resistant and their frames are far stronger than regular eyeglasses. Safety glasses can be made with prescription lenses and equipped with side shields or tinted to offer additional protection.

Contact lenses are not allowed at work areas unless prior approval in writing by management.

Supervisors and the client will determine what tasks require other eye protection, such as chemical goggles and face shields.

Goggles that can be worn over corrective spectacles without disturbing the adjustment are acceptable.

Goggles are impact-resistant and are available with tinted lenses. Goggles provide a secure shield around the entire eye area to protect against hazards coming from any

direction. Goggles may have regular or indirect ventilation. Indirect ventilation may be required if a splash hazard exists.

Employees **shall** wear their eye protection to adequately protect themselves from hazards in the work area.

Questions about eye protection should be brought to your supervisor and resolved before the job is started. Special protection concerns should also be discussed with your supervisor.

All face and eye protection equipment shall be kept clean and in good repair.

Full-face shields are required to be worn over side shield safety glasses or chemical goggles for grinding and chipping and any other designated assignment.

Face shields and helmets are not in themselves protective eyewear. Rather, they are used in conjunction with eye protectors. Full-face shields are often used when a chemical, heat, or glare exposure exists. Helmets are used when welding or working with molten materials.

HEAD PROTECTION

Approved hard hats (ANSI-Z89.1-1986) in good condition are required. Each affected employee shall wear protective helmets, designed to reduce electrical shock hazard. When near exposed electrical conductors, which could contact the head (ANSI -Z89.2-1971). Metal hard hats shall not be worn.

Hard hats are to be worn in work areas where there is a potential for injury to the head from falling or flying objects.

HAND PROTECTION

The company will select and require employees to use appropriate hand protection when employee's hands are exposed to hazards such as those from skin absorption of harmful substances, severe cuts or lacerations, sever abrasions, punctures, chemical burns, thermal burns, and harmful temperature extremes.

The selection of the appropriate hand protection will be based on an evaluation of the performance characteristics of the hand protection relative to the task(s) to be performed, conditions present, duration of use and the hazards and potential hazards identified.

All field employees should obtain work gloves suitable for the work they will perform. Gloves shall be worn when required.

Try to imagine your life without the use of your hands. Being unable to perform the simplest task, such as turning on a light switch. No machine or tool can compare with the versatility of the human hand. Hands are used to operate machinery, perform delicate

surgery, create new inventions, and build today's homes and businesses. Hands are an essential part of your business production. It's up to you to protect them.

Hand injuries account for approximately 1/3 of all disabling job-related injuries each year. Pinch points cause over 80% of these injuries. These injuries are of all kinds, such as cuts, bruises, fractures, and amputations. Approximately 20% of these injuries become infected. Hand injuries are most common in the construction, manufacturing, and processing industries. There are certain precautions that must be taken to prevent hand injury.

Pinch points must be identified and properly guarded. Workers must be aware of their existence and potential danger and instructed in the proper safety precautions needed to prevent injury. Any machinery being serviced should be properly locked out and tagged. Employees should never be allowed to clean, adjust, or repair machines while in motion or energized.

Hand protection is another precaution to use in preventing hand injuries. Hand protection is nothing new to industry. Its importance, however, cannot be overstated.

Approved work gloves can be useful in preventing cuts, bruises, and abrasions resulting from handling rough materials or sharp objects. Be mindful of wearing gloves at the wrong time and in the wrong place. This would involve jobs where gloves may be caught by moving parts or machinery. Gloves can also be effective in minimizing hand infections, such as dermatitis, which occurs in nearly every type of industry. Avoid wearing rings or jewelry while working with hand/power tools and around machinery. A little foresight will go a long way in keeping the skin on your hands and your hand as part of your body.

Follow these basic safety rules to keep hand and fingers strong, healthy and free of injury:

- Wear work gloves when handling items that are heavy, abrasive, or have sharp points and edges.
- Don't use substitutes like bolts or wrenches for hammering. Use a regular hammer when needed.
- Don't operate tools and machines with missing guards.
- Don't try to repair, adjust, or clear moving machinery parts. Shut the machinery down first.
- Use tag lines to control heavy loads when they are hoisted into place.
- Be aware of pinch points on gears, chain and belt drives, rigging, concrete chutes and keep hands and fingers clear of them.

- Wear work gloves when working with wet concrete, very hot or cold objects, or caustic chemicals.

FOOT PROTECTION

Each affected employee shall wear protective footwear when working in areas where there is a danger of foot injuries due to falling and rolling objects, or objects piercing the sole and where such employee's feet are exposed to electrical hazards.

Protective footwear need comply with (ANSI Z41-1991). Steel-toed shoes, with a defined heel are required on many work sites. The company requires the wearing of steel-toed shoes for anyone in the field with the exception of office personnel who are restricted to the office trailers.

ASSESSMENT GUIDELINES

Conduct a walk-through survey of the areas in question. The purpose of the survey is to identify sources of hazards to workers and co-workers. Consideration should be given to the basic hazard categories:

- Impact
- Pinch points
- Penetration
- Compression (roll-over)
- Chemical
- Heat
- Harmful dust (air quality)
- Light (optical) radiation
- Fall
- Access and egress

During the walk-through survey the safety officer should observe:

- Sources of motion; i.e., machinery or processes where any movement of tools, machine elements or particles could exist, or movement of personnel that could result in collision with stationary objects;
- Sources of high temperatures that could result in burns, eye injury or ignition of protective equipment, etc.;
- Types of chemical exposures;
- Sources of harmful dust;
- Sources of light radiation, i.e., welding, brazing, cutting, furnaces, heat treating, high intensity lights, etc.;
- Sources of falling objects or potential for dropping objects;
- Sources of sharp objects which might pierce the feet or cut the hands;
- Sources of rolling or pinching objects which could crush the feet;
- Layout of workplace and location of co-workers; and
- Any electrical hazards.

In addition, injury/accident data should be reviewed to help identify problem areas.

Following the walk-through survey, it is necessary to organize the data and information for use in the assessment of hazards. The objective is to prepare for an analysis of the hazards in the environment to enable proper selection of protective equipment.

Having gathered and organized data on a workplace, an estimate of the potential for injuries should be made. Each of the basic hazards should be reviewed and a determination made as to the type, level of risk, and seriousness of potential injury from each of the hazards found in the area. The possibility of exposure to several hazards simultaneously should be considered.

SELECTION GUIDELINES

After completion of the assessment procedures, the general procedure for selection of protective equipment is to:

- Become familiar with the potential hazards and the type of protective equipment that is available, and what it can do; i.e., splash protection, impact protection, etc.

- Compare the hazards associated with the environment; i.e., impact velocities, masses, projectile shape, radiation intensities, with the capabilities of the available protective equipment.

- Select the protective equipment, which ensures a level of protection greater than the minimum required to protect employees from the hazards.

- Fit the user with the protective device and give instructions on care and use of the PPE. It is very important that end users be made aware of all warning labels for and limitations of their PPE.

SELECTION CHART GUIDELINES FOR EYE AND FACE PROTECTION

Some occupations (not a complete list) for which eye protection should be routinely considered are: carpenters, electricians, machinists, mechanics and repairers, millwrights, plumbers and pipe fitters, sheet metal workers and tinsmiths, assemblers, sanders, grinding machine operators, lathe and milling machine operators, sawyers, welders, laborers, chemical process operators and handlers, and timber cutting and logging workers. The following chart provides general guidance for the proper selection of eye and face protection to protect against hazards associated with the listed hazard "source" operations.

EYE AND FACE PROTECTION SELECTION CHART

Source	Assessment of Hazard	Protection
IMPACT - Chipping, grinding machining, masonry work, woodworking, sawing, drilling, chiseling, powered fastening, riveting, and sanding.	Flying fragments, objects, large chips, particles sand, dirt, etc.	Spectacles with side protection goggles, face shields. For severe exposure, use faceshield.
HEAT-Furnace operations, pouring, casting, hot dipping, and welding.	Hot sparks Splash from molten metals High temperature exposure	Faceshields, goggles, spectacles with side protection For severe exposure use faceshield. Faceshields worn over goggles. Screen face shields, reflective face shields.
CHEMICALS-Acid and chemicals handling, degreasing plating.	Splash Irritating mists	Goggles, eyecup and cover types. For severe exposure, use face shield. Special-purpose goggles.
DUST - Woodworking,..... buffing, general dusty conditions.	Nuisance dust	Goggles, eyecup and cover types.

LIGHT and/or RADIATION - Welding: Electric arc	Optical radiation .	Welding helmets, hoods or welding shields. Typical shades: 10-14.
Welding: Gas	Optical radiation .	Welding goggles or welding face shield. Typical shades: gas welding 4-8, cutting 3-6, brazing 3-4.
Cutting, Torch brazing, Torch soldering	Optical radiation ..	Spectacles or welding face-shield. shades, 1.5-3.
Glare.....	Poor vision	Spectacles with shaded or special-purpose lenses, as suitable.

SELECTION GUIDELINE FOR HEAD PROTECTION

All head protection (helmets) is designed to provide protection from impact and penetration hazards caused by falling objects. Head protection is also available which provides protection from electric shock and burn. When selecting head protection, knowledge of potential electrical hazards is important. Class A helmet, in addition to impact and penetration resistance; provide electrical protection from low-voltage conductors (they are proof tested to 2,200 volts). Class B helmets, in addition to impact and penetration resistance, provides electrical protection from high-voltage conductors (they are proof tested to 20,000 volts). Class C helmet provide impact and penetration resistance (they are usually made of aluminum which conducts electricity), and should not be used around electrical hazards.

Where falling object hazards are present, helmets must be worn. Some examples include: working below other workers who are using tools and materials which could fall; working around or under conveyor belts which are carrying parts or materials; working below machinery or processes which might cause material or objects to fall; and working on exposed energized conductors. Some examples of occupations for which head protection should be routinely considered are: carpenters, electricians, linemen, mechanics and repairers, plumbers and pipe fitters, assemblers, packers, wrappers, sawyers, welders, laborers, freight handlers, stock handlers, and warehouse laborers.

SELECTION GUIDELINES FOR FOOT PROTECTION

Safety shoes and boots which meet the ANSI Z41-1991 Standard provide both impact and compression protection. Where necessary, safety shoes can be obtained which provide puncture protection. In some work situations, metatarsal protection should be provided, and in other special situations electrical conductive or insulating safety shoes would be appropriate.

Safety shoes or boots with impact protection would be required for carrying or handling materials such as packages, objects, parts or heavy tools which could be dropped. For other activities where objects might fall onto the feet. Safety shoes or boots with compression protection would be required for work activities involving skid trucks (manual material handling carts) around bulk rolls (such as paper rolls) and around heavy pipes, all of which could potentially roll over an employee's feet. Safety shoes or boots with puncture protection would be required where sharp objects such as nails, wire, tacks, screws, large staples, scrap metal etc., could be stepped on by employees causing a foot injury.

Some occupations (not a complete list) for which foot protection should be routinely considered are: shipping and receiving clerks, carpenters, electricians, machinists, mechanics and repairmen, plumbers and pipe fitters. Structural metal workers, assemblers, drywall installers and lathers, packers, wrappers, craters, punch and stamping press operators, brick layers, welders, laborers, freight handlers, gardeners and grounds-keepers, stock handlers and warehouse laborers.

SELECTION GUIDELINES FOR HAND PROTECTION

Gloves are often relied upon to prevent cuts, abrasions, burns, and skin contact with chemicals that are capable of causing local or systemic effects following dermal exposure. OSHA is unaware of any gloves that provide protection against all potential hand hazards, and commonly available glove materials provide only limited protection against many chemicals. Therefore, it is important to select the most appropriate glove for a particular application and to determine how long it can be worn, and whether it can be reused.

It is also important to know the performance characteristics of gloves relative to the specific hazard anticipated; e.g., chemical hazards, cut hazards, flame hazards, etc. Using standard test procedures should assess these performance characteristics. Before purchasing gloves, the employer should request documentation from the manufacturer that the gloves meet the appropriate test standard(s) for the hazard(s) anticipated. Other factors to be considered for glove selection in general include:

- As long as the performance characteristics are acceptable, in certain circumstances, it may be more cost effective to regularly change cheaper gloves than to reuse more expensive types; and,

- The work activities of the employee should be studied to determine the degree of dexterity required the duration, frequency, and degree of exposure of the hazard, and the physical stresses that will be applied.

With respect to selection of gloves for protection against chemical hazards:

- The toxic properties of the chemical(s) must be determined; in particular, the ability of the chemical to cause local effects on the skin and/or to pass through the skin and cause systemic effects;

- Generally, any "chemical resistant" glove can be used for dry powders;

- For mixtures and formulated products (unless specific test data are available), a glove should be selected on the basis of the chemical component with the shortest breakthrough time, since it is possible for solvents to carry active ingredients through polymeric materials; and,

- Employees must be able to remove the gloves in such a manner as to prevent skin contamination.

BACK SAFETY

PURPOSE

An aggressive Back Safety Program is essential in preventing situations which are capable of causing injury or impairment to the back.

SCOPE

This program applies to all employees and subcontractors working within Company controlled worksites.

APPLICATION

Lifting and carrying heavy loads puts a severe strain on the back, and can result in a disabling back injury if done improperly. Such injuries can be avoided by planning the lift in advance. Here are a few common-sense safety rules for planning heavy lifts:

1. Whenever possible, avoid manual lifting of very heavy loads or those which will be very awkward to handle. Use mechanical lifting aids such as forklifts or hand trucks, etc. for such loads.

2. Avoid "Lazy man's loads." Don't attempt to lift and carry more objects at one time than can be safely and comfortably handled.

3. Don't carry any bulky load, which will obstruct the view when handled. Get help for such leads.

4. Choose the carrying route and the place where the load will be put down, in advance.

5. Clean up and remove slipping and tripping hazards in the areas where the load will be handled.

6. Make sure that there is enough room to carry and turn the load while avoiding contact with other objects in the areas where the load will be handled. Move other objects out of the way.

7. Choose handhold on the load, which permit a firm and comfortable grip on the load. Check the load for sharp edges, and use work gloves if needed to protect the hands.

8. Size up the load, and get help if it appears to be too heavy or awkward to lift and carry alone.

9. When more than one person will lift and carry a load, their activities should be

coordinated as follows:

a. Each person should know in advance the carrying route, and where the load will be put down.

b. Each person should know in advance his or her holding place on the load.

c. Select one person to signal and direct the other lifters.

d. The load should be lifted and put down on the count of "three" given by the person directing the lifters.

To prevent back injury, follow these rules for planning heavy lifts. Preventing back injuries is a lot easier than correcting them.

"BACK INJURIES"

Structurally your back is one of the weakest members of your body. Many of you have already experienced some form of structural failure in your back -- if not, the odds are high that you will in the future.

Eight out of every ten Americans currently suffers from some sort of back pain, and most of them don't have jobs that are as hard or strenuous as yours.

Everyday your occupation requires you to perform various kinds of lifting, carrying, bending, twisting, climbing, pushing and pulling loads that are often heavy and awkward.

Taking time to lift and carry properly can save you a "big pain in the back."

We can all learn an important lesson from leading crane manufacturers -- many new models are equipped with computers that will not allow the matching to over lift -- your brain is your personal computer -- program it to do the same.

Here is some safety rules to prevent back injury in routine work situations.

1. Avoid overstraining when heavy loads are to be moved, lifted, or carried. Whenever possible, get help, or use mechanical aids such as a crane, loader, lift truck, hand truck, wheelbarrow, or dolly.

2. Don't attempt to push or pull objects that weigh more than yourself without help or mechanical aid.

3. Slipping and tripping is the number one cause of sprains and strains. Prevent them by good housekeeping. Clean up and remove scrap and debris regularly.

Pick up and put away-unused tools and materials. Clean up spills or oil, grease, hydraulic fluid and other slippery substances.

4. When working in awkward or unnatural positions, be aware of the strain, which might be put on the back. Don't overstrain in such positions. Avoid sudden, jerky, or twisting motions.

5. Set up properly for work that is hard to reach. Use ladders, scaffolds, etc. to create a safe work platform, which permits reaching the work without straining. Position yourself to the work so that it and the tools and materials are reachable without bending, twisting, and straining.

6. Tools that slip and let go when you are straining on them can cause you to wrench your back out of place. Select those, which are in good condition, provide a good grip on the work, and have enough power and leverage to do the work without straining.

7. Jumping down from one level to another often results in strains and sprains to the back, knee, or ankle. Descend with care! Avoid jumping down by use of ladders, step stools, stairways, or ramps.

8. When walking or working in very muddy or wet areas follow these precautions to avoid slip and falls:

    a. Look ahead and plan a walking route in the driest or wet areas.

    c. Spread sand, gravel, dry earth, or use plywood or planks to create safe work surfaces.

    c. If a front-end loader is available, use it to level out work areas.

9. When liquid chemicals are heavily used, it is better to install pipelines and outside storage tanks instead of manually handling them.

FIRST AID

This policy is meant to prepare employees for common emergencies in the event a qualified first responder is not immediately available.

This policy applies to all First Aid Providers of the Company. These personnel should be contacted immediately in the event of an accident. Employees not designated as first aid providers should not attempt to provide first aid unless a designated person can not be found.

BLEEDING

Bleeding may flow from a vein, artery, or both. Venous bleeding is darker red in color and flows continuously. Arterial bleeding is bright red in color and usually spurts from the wound. Arterial bleeding is more critical, because blood is lost faster leading to a greater blood loss.

EXTERNAL BLEEDING

Put on rubber/latex gloves before providing assistance, call EMS (911) if bleeding is severe.

X Place a thick, clean compress (sterile gauze or a soft clean cloth such as a handkerchief, towel or undershirt) directly over the entire wound and press firmly with the palm of your hand.

X Continue to apply steady pressure.

X Do not disturb any blood clots that form on the compress.

X If blood soaks through the compress, do not remove the compress, but add another pad over it and press firmly over a wider area.

X Continue pressure for up to 15 minutes. This should be long enough for a response by either a trained first responder or EMS.

Tourniquet

Use a tourniquet only in life threatening situations such as an amputation or when severe bleeding can not be stopped. This is not a preferred method and should only be attempted by a trained first responder.

X Tie two full knots over the stick.

X Twist the stick to tighten the tourniquet around the stick to hold it in place.

X Seek Medical Attention immediately. EMS should have been called at the onset of the injury.

Tourniquets are the last resort in the attempt to stop bleeding and should only be attempted by trained first responders unless it is an immediate step to save a life.

INTERNAL BLEEDING

Internal bleeding is not always obvious. You may suspect bleeding if the victim has been in an accident, fallen or received a severe body blow.

Symptoms:

X Vomit that resembles coffee grounds or is red in color.

X Coughed up blood that is red and / or frothy (bubbly).

X Stools that are black or contain bright red blood.

X Paleness.
X Cold, clammy skin.
X Rapid and weak pulse.
X Light headed.
X Distended swollen stomach.
X Mental confusion.

Seek Medical Attention Promptly

X Do not give the person anything to drink.

BROKEN BONES

A break or a crack in a bone is a fracture. A fracture may be closed or open. In a closed fracture, the bone does not come through the skin. In an open fracture, there is a wound that extends down the bone or part of the bone and may be protruding through the skin.

Do not move the victim unless they are in immediate danger such as a fire, explosion, gas inhalation or traffic or any other situation that may worsen the injury. If a victim must be moved, make every attempt to immobilize the injury first.

Immediate Treatment

X Stop severe bleeding.
X Do not try to push back any part of the bone that is protruding.
X Do not wash the wound or apply any medication.
X Gently apply pressure with a sterile pad or a clean cloth to stop bleeding.
X Splinting an open break is the same as for a closed break.
X Treat for shock if necessary.
X Call EMS promptly.
X Apply splints if a paramedic or other trained personnel are not readily available.
X Handle the victim very gently so as not to increase the severity of the injury.

Splinting

X Always splint by securing the splint beyond the joint and below the joint below the injury.
X Objects that can be used for splinting include boards, straight sticks, rolled up newspapers, folded cardboard or umbrellas.
X Padding such as soft cloth, towels or blankets should be placed between the splint and the skin of the injured part.
X Splints can be tied in place with belts, neckties, strips of cloth, rope or string.
X Do not tie the splint so tightly that the tie interferes with the circulation.

BURNS

Initial treatment of burns helps to decrease the temperature to the burned area and helps to prevent further heat injury to the skin and underlying tissues.

Immediate Attention

X Put the burned area in cold water or apply a cold compress (do not use ice).
X Gently pat the area dry with a clean cloth. Cover the burn with a dry sterile bandage.

X Seek medical attention if the burn is extensive, develops blistering, or if there is a flash burn around the mouth or nose.

Severe Burns

X Treat burns as above.
X Elevate burned hands, arms, or feet.
X Watch for shock and treat accordingly.
X Do not give the victim alcohol.

CO2 / LPG or Cold Burn

LPG is composed of ethane, propane, butane and their isomers. These gases are colorless, flammable when handled or shipped as liquid vapor pressure of 16 PSIG to 550 PSIG at 70 degrees F. They are low in toxicity, slightly anesthetic and have a mild odor, ranging from aromatic to faintly disagreeable.

X Simple burns of the skin should be treated by flushing with water and may be bandaged or left open.
X Extensive burns should be referred to a doctor.
X Most important is the possibility of getting this liquid into the eye. Therefore, safety or chemical goggles should be worn when handling this liquid gas.

Chemical Burns

As quickly as possible, flush the burned area with large quantities of running water for at least five minutes.

X Speed of flushing and quantity of water are both important in minimizing injury.
X Use a garden hose, shower, buckets of water, etc.
X Continue to flush while removing clothing from the burned area. Do not remove clothing that is stuck to the skin.
X After flushing, follow the instructions on the label of the chemical or the MSDS.
X Cover the burn with a clean bandage.
X Read the Material Safety Data Sheet (MSDS) for other first aid measures.

BREATHING EMERGENCIES

If breathing has stopped, the victims tongue, lips and fingernail beds become blue and there is loss of consciousness.

Immediate Treatment

X Clear the air passage and lift the tongue forward.
X Tilt the head back by lifting under the neck and pulling the jaw forward.
X Pinch the victim=s nostrils shut and place your mouth over the victim=s mouth to blow deep breaths into the victim.
X While using a one way air valve, blow two full breaths so that the victims chest rises (take a deep breath between each of your breaths).
X Check for exhaling air and check pulse to be sure of heart activity.
X If no breathing or heart activity is noted, continue with **C**ardio **P**ulmonary **R**esuscitation

(CPR).

CHOKING

The Heimlich maneuver (abdominal thrust) is the method of choice when a person is choking. Back blow-hitting the victim forcefully and repeatedly between the shoulders blades with the palm of your hand are used only if the Heimlich maneuver is not effective.

To know whether to begin treatment for choking, look for the universal chocking sign, a person who is choking will involuntarily grasp the front of their neck and be trying to gasp for breath with no success. If the person is coughing, allow them too. Do not try to slap them on the back, this may lodge the foreign object.

Immediate Treatment

X If the victim can speak, cough or breathe, do not interfere in any way with their efforts to cough up the object.

X If the victim cannot breathe, stand behind them and place your weak fist with the thumb side against the victims stomach, slightly above the navel and below the ribs and breastbone.

X Hold your fist with your other hand and give four (4) quick, forceful, upward thrusts.

X Do not squeeze on the ribs with your arms. Just use your fist in the abdomen.

X It may be necessary to repeat the Heimlich maneuver 6-10 times.

X If the victim is lying down or is unconscious, turn the victim onto their back. Straddle the victim and put the heel of your hand on the victim=s stomach, slightly above the navel, below the ribs. Put your free hand on top of your other hand to provide additional force. Keep the elbows straight. Give four (4) quick forceful downward thrusts toward the head.

X It may be necessary to repeat the maneuver 6-10 times.

DEHYDRATION

Dehydration occurs when there is a lack of water in the body. This can occur when there is vomiting, excessive heat and sweating, diarrhea, or lack of fluid intake.

Treatment

X Move the victim into the shade or other cool place.

X Replace lost fluids and body chemicals by giving the victim water, tea, carbonated beverages (shake up well to eliminate fizz), a commercial electrolyte replacement fluid (e.g., Gatorade, Quench, etc.) or clear broth.

ELECTRICAL SHOCK

If you are the first person offering first aid, remember: Do not touch the victim directly until the source of the electrical current is turned off or the victim is no longer in contact with it. Victims who have been struck by lightning can be touched immediately because they are no longer connected to the electricity.

Immediate Treatment

X Maintain an open airway. Restore breathing and circulation if necessary.

X Obtain medical help immediately.

EYE INJURY

If the eye injury is caused by getting a chemical in the eye, this can be very serious and immediate action is necessary. A foreign body is annoying but not necessarily critical for immediate treatment. Anything penetrating into the eye is critical and requires immediate medical treatment.

Chemicals in the Eye

X Immediately flush the eye with the copious amount of water for 15 minutes.
X Be sure to lift and separate the eyelids so that all parts of the eye will be reached by the water.
X Do not allow the victim to rub the eyes.
X Seek medical attention.

Foreign particle in the Eye

X Wash the eye with water or eye irrigation solution to try to remove the particle.
X If not removed by irrigation, try the corner of a soft handkerchief.
X If this is unsuccessful, obtain medical treatment.

Objects Penetrating the Eyeball

X Do not attempt to remove the object or wash the eye.
X Seek medical attention immediately

GAS LEAKS AND OTHER POISONOUS FUMES

Be extremely cautious when rescuing a victim from an area filled with smoke, chemicals, or gas fumes. It is best not to attempt a rescue alone. Before entering the area, rapidly inhale and exhale two or three times, take a deep breath and hold it. Remain close to the ground, crawl while entering and rescuing the victim. If the area is extremely hot or heavy with fumes, it is best for the rescuer to have an independent air supply.

Immediate Treatment

X Get the victim to fresh air immediately.
X Maintain an open airway. Restore breathing and circulation if necessary.
X Seek medical attention even if the victim seems to recover.

HEAD INJURY

X All head injuries must be taken seriously, as they can result in brain or spinal cord damage. Any victim found unconscious must be assumed to have a head injury until determined otherwise by a medical professional. Anyone with a head injury may also have a neck injury.

Immediate Treatment

X Maintain an open airway.
X Keep the victim lying down and quiet. If the victim must be moved, handle them very carefully remembering to stabilize the neck.
X Control any serious bleeding.

X Do not give anything by mouth.

HEART ATTACK

A heart attack is a life threatening emergency. Any or all of the following may be present: Chest pain, indigestion pain, pain that radiates to either arm (usually the left), shoulders neck or jaw, profuse sweating, nausea or vomiting, and extreme weakness. Very often, the victim may be in denial of having a heart attack.

Immediate Treatment

X Gently place the victim in a comfortable position. This is either sitting up or in a semi-sitting position.
X Loosen tight clothing, especially around the victims neck area.
X Keep the victim warm.
X If the victim stops breathing, start CPR.
X Seek Medical attention immediately.

HEAT INJURY

Heat injuries are heat cramps, heat exhaustion, and heat stroke.

HEAT CRAMPS

These are muscle pains and spasms caused by a loss of salt from the body due to profuse sweating in hot temperatures.

X Have the victim sit or lie quietly in a cool place.
X Gently massage the affected area.
X Give clear cool fluids (water, juice, tea) with one teaspoon of salt per glass.
X Give one half glass of liquids every 15 minutes.
X Seek medical attention if cramping continues or if victim begins to vomit.

HEAT EXHAUSTION

This can occur after prolonged exposure to high temperature and humidity. Symptoms are any of the following: slightly elevated body temperature, pale and clammy skin, profuse sweating, dizziness, nausea or vomiting, and weakness.

Immediate Treatment

X Move victim to shade or a cool place.
X Have the victim lie down.
X Raise victims feet about 12-18 inches.
X Loosen victims clothing.
X Give clear liquids (juice, water, tea) with one teaspoon of salt per glass.
X Place cool wet cloths on the victims forehead and body.
X Use a fan to cool, or remove the victim to an air conditioned room.
X If the symptoms are severe, become worse, or last longer that an hour, seek medical attention.

HEAT STROKE

This is a life threatening emergency. One or all of the following may be present: high body temperature, red, hot, and dry skin. Sweating will be absent. Victims will have a rapid, strong pulse, and confusion will be obvious or the victim will be unconscious.

Immediate Treatment

X CALL 911 IMMEDIATELY.
X Undress the victim and place them in a tub of cold water or under a running hose. Sponge the bare skin with water or alcohol. Apply cold packs to the body.
X Continue treatment until the body temperature falls below 101 degrees.
X Do not overcool. Check body temperature frequently.
X Do not give the victim alcohol.

FROSTBITE

Skin is pink just before frostbite develops and then changes to a white, grayish-yellow as frostbite develops. Victim feels cold and numb and is usually unaware of frostbite.

Immediate Treatment

DO

X Cover the frostbitten part with a warm hand or woolen material. If fingers or hands are frostbitten, have victim hold his hand in his armpit next to his body.
X Bring the victim inside as soon as possible. Place frostbitten part in lukewarm water.
X Gently wrap the part in blankets if lukewarm water is not available or is impractical to use.
X Let circulation reestablish itself naturally. When the part is warmed, encourage the victim to exercise fingers and toes. Give the victim a warm, nonalcoholic drink.

DO NOT

X Massage the affected area.
X Rub affected parts with snow or ice. Rubbing frostbitten tissue increases the risk of gangrene.
X Use hot water, hot water bottles or heat lamps over the frostbitten area.

SHOCK

Shock is a medical condition secondary to serious disease or injury. It is a life threatening situation in which the body=s vital functions are seriously threatened. Prompt recognition of this condition is essential. Any or all of the following may be present: weakness, difficulty breathing, dizziness, rapid weak pulse, low blood pressure, moist and clammy skin and unconsciousness.

Immediate Treatment

X Maintain an open airway.
X Keep the victim lying down.
X Elevate legs 12 to 18 inches.
X Cover the victim enough to prevent loss of body heat.
X If shock is due to an insect sting, remove the stinger by gently scraping out the stinger with a knife blade, card edge, etc. Place a cold pack on the sting area.
X If the shock is due to blood loss or fluid loss and the victim is conscious, you may give them fluids, especially if medical care is several hours away.

X Seek medical attention.

WOUNDS

A wound is an injury in which the skin is broken. The objectives in treating a would consists of 1.) Stopping the bleeding, 2.) Preventing contamination and infections, 3.) Preventing or treating for shock in necessary, 4.) Seeking medical attention if necessary, and 5.) Assuring that the victim has an up to date tetanus shot.

Immediate Treatment

X Apply direct pressure to control bleeding.
X When bleeding has stopped, wash with soap and water.
X Do not attempt to remove foreign material that is deeply embedded.
X Rinse thoroughly under running water and pat dry.
X If the wound is not severe enough to require medical attention, you may use an antibiotic ointment with a sterile dressing.
X If cut is slightly gaping, apply a butterfly bandage to bring the skin together at the edges.
X Seek medical attention if the bleeding does not stop. If the wound was caused by an obvious dirty object, or an object is embedded in the would or if there is any doubt about tetanus immunization.

SPINAL INJURY

Never move a victim with a suspected spine injury without trained medical assistance, unless the victim is in immediate danger form fire, explosion or other life threatening situations. Any movement of the neck, head or back may result in paralysis or death. With a severe back or neck injury, the victim may not be able to move arms, fingers, legs, feet or toes. The victim may also have tingling or pain in the neck, back or down the arms and legs.

Immediate Treatment

X If the victim must be moved, immobilize the back and neck with a reasonably short, wide board. The board should reach down to the patients buttocks.
X Place the boards behind the victims head, neck and back, keeping these body parts in alignment.
X Tie the board around the victims forehead, under the armpits and around the lower abdomen.
X Do not bend or twist the victims head, neck or body.
X Move the victim very gently and slowly.
X If the victim is not breathing, tilt the head back slightly to maintain an open airway. Restore breathing if necessary.
X A victim with a suspected back or neck injury must be taken to the hospital lying down.
X Place folded blankets, towels or clothing at the victims side, head and neck to keep them from rotating.
X Seek medical attention.

INSECT AND SPIDER BITES

It needs to be emphasized that a sting or bite to a hypersensitive person can be fatal in minutes, so do not underestimate the danger of spider and insect bites/stings. A person stung by a wasp, bee, yellow jacket, ant, fire ant or any other stinging insect will have pain and swelling. The stinger should be removed by scraping. Do not use tweezers or fingers as venom will be squeezed into the skin. In the case of a bee sting, ice or sting kill sould be applied to the area. A hypersensitive person should see his/her doctor to obtain a kit to carry at all times in case of a sting or bite. The kit may save a life. Employees and Supervisors should be informed of this and in fact learn how to use the sting kit.

Immediate Treatment

X Make the victim lie down as soon as possible.
X Apply an ice pack over the bite if possible.
X Transport the victim to a physician or hospital immediately.
X Do not allow the victim to walk.
X Do not give alcohol in any form.

VENOMOUS SNAKE BITES

Most snake bites are not fatal. The factors concerning severity of symptoms are:

X The bite as related to the size of the snake.
X The amount of venom actually injected.
X The type of snake.

In the event of a snake bite, the following actions should be taken:

X Avoid panic.
X It is helpful to the doctor in treating the victim to have a positive identification of the specie of the snake. Please try to remember what the snake looked like, the size, color and pattern of its markings. Do not attempt to catch the snake or kill it as this may lead to another bite.
X Get to the nearest hospital quickly.

Do not do the following:

X Do not apply a tourniquet
X Do not apply ice.
X Do not cut the bite and apply suction.
X Never give alcohol in any form.

AMPUTATION

Amputation is the partial or complete severing of a body part, such as an ear, finger, arm, foot, or leg. Sometimes the part can be reattached, especially when you take proper care of the severed part and stump.

Immediate Treatment

X CALL EMS
X Administer first aid for any life threatening conditions (e.g. severe bleeding). Then administer first aid for any other injuries.
X Find and save the severed body part as it may be possible to reattach it or use it for repair purposes. Be careful to do no further harm to the part or to the stump. Gently rinse off any

debris If ice is available, wrap the part in a moistened dressing (a clean towel, washcloth or gauze will do). Place the wrapped part in a plastic bag or sealed container, then place it on a bed of ice and water. Cooling the part will keep it viable for about 18 hours. Do not use dry ice and do not place the part directly on the ice. If ice is not available, place the part directly in a plastic bag or a sealed container without wrapping it in a dressing. The part will remain viable for about 4 to 6 hours. Label the container holding the part with the victims name and the time of the accident. Keep the part with the victim. Do not take it to the hospital separately.

X Check the victims vital signs. Open the airway if necessary, check breathing and circulation. If necessary, begin rescue breathing, CPR or bleeding control.

X Calm and reassure the victim. Amputation is painful and extremely frightening.

X Control bleeding by applying direct pressure to the wound; by elevating the injured area; and if necessary, by using pressure point bleeding control.

X Take steps to prevent shock. Lay the victim flat, raise his/her feet 8-12 inches, and cover the victim with a coat or blanket. Do not place the victim in this position if you suspect any head, neck, back or leg injury or if position makes the victim uncomfortable.

X Stay with the victim until you have medical help.

DO NOT

X Do not forget that saving the victims life is more important than saving the body part.

X Do not overlook other, less obvious injuries.

X Do not attempt to push any part back into place.

X Do not decide that a body part is to small to save.

BLOODBORNE PATHOGENS

Applicable OSHA Standards: 29 CFR 1910.1030

PURPOSE

This company is committed to providing a Safe and Healthful work environment. In pursuit of this endeavor, the following Exposure Control Plan (ECP) is provided to eliminate or minimize occupational exposures to bloodborne pathogens.

SCOPE

The base of this Plan is to meet the re-accruement of the OSHA Bloodborne Pathogens Standard, Title 29 Code of Federal Regulations 1910.1030. It will provide protection for employees through the use of "Universal Precautions." Universal Precautions assume that all blood and body fluids are infectious for bloodborne pathogens, and must be treated accordingly

All employees will have an opportunity to review this plan at any time during their work shifts by contacting the Safety Director. Employees seeking copies of the Plan may contact the Safety Director. A copy of the Plan is available free of charge and with in 15 days of the request. The Safety Director will also be responsible for reviewing and updating the ECP annually or sooner if necessary. To reflect any new or modified tasks and procedures which affect occupational exposure, and to reflect new or revised employee posters with occupational exposure.

EMPLOYEE EXPOSURE DETERMINATION

Occupational exposure to blood and body fluids is limited to our designated first-aid responders.

In the event of a first-aid incident of blood or other potentially infectious materials are present, the first-aid responder(s) is (are) instructed to report to the Safety Director before the end of his (their) workshift(s).

The Safety Director will maintain a report, which describes name of the first aider, as well as the date, time and description of the incident. He/she will ensure that any first aider that desires the vaccine series after a all incident will receive it as soon as possible, but not later than twenty-four hours after the incident.

The Safety Director will train first-aid providers on the specifics of the reporting procedures and to all others training associated with Bloodborne Pathogen requirements.

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.

PERSONAL PROTECTIVE EQUIPMENT

First-aid responders will use Personal Protective Equipment appropriate for administering the first-aid required All jobsite first-aid kits contain gloves, eye protection, resuscitation bags and mouthpieces.

LABELING

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

HOUSEKEEPING

If a first-aid incident occurs, the first-aid responders will take precautions to decontaminate work surfaces, tools and equipment. Personal protective equipment 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 closable and labeled or color-coded containers. When storing, handling, transporting or shipping, place other regulated waste 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 responders 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 Personal protective equipment 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.

TRAINING

All designated first-aid responders will receive training conducted by the Safety Coordinator. The training program will cover, at a minimum, the following elements:

- A copy and explanation of the standard.
- Epidermiology and symptoms of bloodborne pathogens.
- Modes of transmission.
- The Exposure Control Plan and a way to obtain a copy.
- Methods to recognize exposure tasks and other activities that may involve exposure to blood.
- Use and limitations of Engineering Controls, Safe Work Practices, and PPE.
- PPE types, use, location, removal, handling, decontamination, disposal and basis for selection.
- Hepatitis B Vaccine offered free of charge. 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 and labels.

POST EXPOSURE EVALUATION AND FOLLOW-UP

If an exposure incident occurs, contact the Safety Coordinator immediately. A confidential medical evaluation and follow-up will be conducted by _MRO. The following will be performed:

- Document the routes of exposure and how exposure occurred.
- Identify and document source individual, unless infeasible or prohibited by State or local law.
- Obtain consent and test source individual's blood, document the source's blood test results.
- If the source individual a known to be infected, testing need not be repeated.

- Provide the exposed employee with the source individual's test results, and if information about applicable disclosure laws and regulations concerning the source identity and infectious status.

- After obtaining consent, collect exposed employee's blood as soon as 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, preserve the baseline blood sample for at least 90 days.

POST EXPOSURE EVALUATION

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

HEALTH CARE PROFESSIONALS

Health care professionals 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 the following:

- A description of the employee's job duties relevant to the exposure incident.

- Route(s) of exposure.

- Circumstances of exposure.

- If possible, results of the source individual's blood test.

- Relevant employee medical records, including vaccination status.

HEALTH CARE PROFESSIONAL'S WRITTEN OPINION

The designated Health Care Professional will provide the 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 employee has been informed of the results of the medical evaluation and any medical conditions which may require further evaluation and treatment For H B 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.

RECORDKEEPING

Medical Records:

Medical records are maintained for each employee with exposure in accordance with 29FCR-1910,20. In addition to the requirements of 29 CFR 1910. 20, the medical record will include:

- The name and social security number of employee
- A copy of the employee's Hepatitis B vaccinations and any medical records relative to the employee's ability to receive vaccination.
- A copy of all results of examinations, medical testing, and follow-up procedures as required.
- A copy of all Health Care Professional 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 years.

Employee medical records shall be provided (within 15 working days) upon written 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 Coordinator at a designated location

Transfer of Records:

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

CREDENTIAL INFORMATION

Designated First-Aid Providers:

Medical Evaluations Performed By:
Designated Health Care Professional:
Location of Training Records:

EYEWASH & SAFETY SHOWER FACILITIES

Applicable OSHA Standards: 29 CFR 1910.151(C)

PURPOSE

The purpose of this program is to provide a system for providing and maintaining proper eyewash and body drenching equipment.

SCOPE

Suitable facilities for the quick drenching or flushing of the eyes and body shall be provided within company work areas for immediate emergency use if the areas contain injurious corrosive materials.

CONSTRUCTION STAFF RESPONSIBILITIES

WORK SITE SAFETY COORDINATOR:

The work site safety coordinator is responsible for surveying each area of the work site to determine if injurious corrosive materials are being used in the area. In areas where such materials are being used, he shall acquire suitable facilities for quick drenching or flushing of the eyes and body. This equipment is to be available no more than 100 feet from the work area (the equipment is to be located where an injured employee can reach it within 10 seconds). The provided equipment must meet the following specifications:

- Permanently installed emergency showers must be attached to a water supply that is capable of delivering a minimum of 30 gallons of clean water per minute.

- Self contained or portable emergency showers must be capable of delivering a minimum of 20 gallons of clean water per minute continuously for at least 15 minutes.

- Installed and portable emergency eyewash units must be capable of delivering not less than 0.4 gallons of clean water per minute. Portable eyewash units must be capable of delivering water continuously for at least 15 minutes. The water must be readily available to wash both eyes simultaneously with flushing streams that rise to approximately equal heights.

- The equipment must be protected from freezing or freeze-protected equipment must be installed. Portable units must be constructed of material that will not corrode in the presence of the flushing fluid.

The Work Site Safety Coordinator will instruct all employees and contractor personnel on the operation of this equipment before they are allowed to work in the area. He will also inspect and document the inspections of safety equipment monthly or in accordance with the manufacturer's instructions. Inspection tags located with the equipment may be used for this purpose.

WORK SITE FOREMAN:

The Work Site Foreman is responsible for installing the showers and eye wash equipment at the direction of the Work Site Safety Coordinator.

PROJECT MANAGER:

The Project Manager is responsible for monitoring the status of safety shower and eye wash equipment as part of his monthly Project Manager Safety Audit.

SAFETY INSPECTION CHECK LIST

Location_____ Job #_____ Date_____

( ) OK (X) Needs Attention Superintendent_____

HOUSEKEEPING:
Storage of Material _____
Disposal of Waste _____
Tripping, Slipping _____
Other _____

SPIDER & POWER STAGES:
Cables _____
Inspection Placard _____
Hooks & Clamps _____
Tank Rollers _____
Safety Lines & Harness _____
Other _____

LADDERS:
Safety Feet _____
Tied Off _____
Electrical Exposures _____
Rungs Recessed/Broken _____
Rails _____
Safety Lines & Harness _____
Other _____

BULLETIN BOARD:
Medical Kit _____
OSHA Posters _____
Emerg. #'s Posted _____
MSDS Displayed _____

WALKING/WORKING SURFACE:
Handrails _____
Barricades _____
Oil, Water _____
Scrap, Rubbish _____
Other _____

COMMENTS:_____
_____
_____
_____

SCAFFOLDS:
Footing _____
Handrails _____
Fall Protection _____
Properly Erected _____
Properly Supported _____
Other _____

FIRE PROTECTION:
Extinguisher Charged _____
Extinguisher Tagged _____

PERSONAL PROTECTIVE EQUIPEMENT:
Safety Glasses w/Side Shields _____
Full Body Harness _____
Goggles _____
Steel Toed Boots _____
Hard Hats _____
Hearing Protection _____
Gloves _____
Respirators _____
Air Fed Hoods _____
Long Sleeve Shirts/FRC's _____

FLAMMABLE STORAGE AREA:
Grounding & Bonding _____
Warning Signs _____
Extinguisher _____
Flame Arrester _____
Materials Properly Labeled _____

EQUIPMENT:
Hoses Wired _____
Good Condition _____
Warning Signs _____
Grounding Required _____
Electrical Cords _____
Shacks Tied Down _____
Barricades _____
Other _____

This inspection covered the regulations of the owner facility, our company requirements, and any government regulations which may apply.

Signature_____ Reviewed With: _____

JOB HAZARD ANALYSIS
JHA

FACILITY:_____ **DATE:**_____ **JOB #:**_____

LOCATION:_____ **FOREMAN:**_____

Complete this form by:

1) Identify the Task you are going to perform in the **TASK** column.
2) List the Potential Hazards for the task in the **POTENTIAL HAZARDS** column.
3) List the Safe Job Procedure to eliminate the Hazard in the **SAFE WORK PROCEDURES** column.
4) Identify who will mitigate the Potential Hazards in the **ACTION BY** column.
5) Identify the Completion Date of the mitigation in the **COMPLETION DATE** column.

TASK	POTENTIAL HAZARDS	SAFE WORK PRACTICES	ACTION BY	COMPLETION DATE

JOB SAFETY ANALYSIS

FACILITY:_____ **DATE:**_____
JOB #:_____**LOCATION:**___

_____

FOREMAN:_____

DESCRIPTION OF JOB ACTIVITIES:_____

PERMITS REQUIRED/SPECIAL PRECAUTIONS:_____

_____ **PERMIT TO ENTER** _____**OPEN/BLINDED:** _____

_____ **OTHER:** _____

_____ **HOT WORK** _____ **COLD WORK**

POTENTIAL HAZARDS/ACTION TAKEN:_____

WORK CREW SIGN OFF BEFORE WORK BEGINS:

PRIMARY ASSEMBLY POINT:

SECONDARY ASSEMBLY POINT:

AERIAL LIFTS AND WORK PLATFORMS

Applicable OSHA Standards: 29 CFR 1910.67, 1926.453

PURPOSE

To provide training and qualification guidelines for the safe operation of aerial lifts and powered manned platforms.

SCOPE

This safety and health guide applies to all employees and subcontractors working within our controlled worksites.

QUALIFICATION REQUIREMENTS

All aerial lift operators are required to be fully qualified and competent in the operation of each piece of equipment they are required to operate. All New Hire operators are required to:

- Provide proof of training and or experience valid within one (1) year and pass an examination prior to acceptance or;
- Successfully complete the Aerial Lift Training Program. (Ref. Section 2.0)

Acceptable forms of proof of training and or experience are:

- Previous employers' certification card dated; (some facilities do not recognize proof of training from other facilities)
- Verification of ABC class room training;
- Verification of any participating Safety Council classroom training.

AERIAL LIFT TRAINING PROGRAM

The Aerial Lift Training Program is intended for all operators. This program is generic in nature and is supplemented with manufactures Operating and Safety Handbook and video. The training program consists of:

- OSHA Standards Overview;
- Overview of manufacturers operation manual;
- Viewing of video-tape training film
- Written examination
- Satisfactory check out by a qualified person

Successful completion of this program requires;

- Classroom instruction;
- Written examination;

  A score of between 80% and 100% will require a review of missed questions, if any, and the score corrected to 100%.

A score of below 80% will require complete retraining and testing.

- Field evaluation.

OSHA STANDARDS OVERVIEW

Standards 29 CFR 1910.67 and 1926.453 of the Occupational Safety and Health Administration (OSHA) covers the operation of vehicle-mounted elevating and rotating work platforms and aerial lifts. In summary, these standards spell out specific requirements as to the construction, modification, and safe use of the equipment and training of operators. For more information concerning these standards ask the Site Safety Supervisor for assistance or contact the nearest OSHA office.

I. References

- Manufacturers Operation and Safety Handbook
- Manufacturers Operator Training Video

II. Aerial Lift Vocabulary and Parts

Aerial platform lifts are used as manlifts whenever work is being performed overhead, such as painting tanks, working on pipelines, etc. The aerial platform lift is one of the first tools to consider when performing the job.

A. As with most specialized equipment, aerial platform lifts have a vocabulary of their own. Before you start learning about platform lifts, you need to make sure that you know the different parts and terms. Some common terms are as follows:

Term	**Meaning**
Auxiliary Power	Control used to lower the basket in an emergency.
Basket	Enclosed area where operator controls the aerial platform lift and performs all necessary work from this area.
Basket Controls	Controls usually located in the front middle of the basket area.
Basket Rotate Left	Control used to only rotate the basket left.

Basket Rotate Right	Control used to only rotate the basket right.
Choke	Control used to help start the gas engine when it is cold.
Deadman Switch	Foot switch that must be depressed before any of the controls on the aerial platform lift will operate.
Drive Forward	Control used to move the aerial platform forward.
Drive Reverse	Control used to move the aerial platform backwards.
Drive Speed	Control used to set the speed to which the aerial platform will travel.
Emergency lowering Valve	Valve used to lower the basket when the aerial platform lift has no power.
Emergency Stop	Control used to kill the aerial platform lift in an emergency situation.
Engine Speed	Control used to set the engine speed.
Extending Axles	Axles that extend, used to stabilize the aerial platform lift.
Forward and Reverse Arrows	Arrows used to indicate travel direction.
Ground Controls	Controls used to operate the aerial lift from the ground in case of an emergency. Also know as auxiliary controls
Level Warning Light	Light that indicates that the base is 5 degrees or more out of level-don't swing, raise or scope if out of level.
Lift Down	Control used to lower the boom down.
Lift Up	Control used to lift the boom up.
Maximum Weight Placard	Placard on the aerial platform lift used stating the amount of weight the lift can handle.
On/Off Ignition	Control used to turn the ignition on or off.
Outriggers	Stabilizing devices used to stabilize the aerial platform lift.
Start Button	Button used to start the aerial platform lift
Steer Left	Control used to turn the aerial platform left when traveling.
Steer Right	Control used to turn the aerial platform right when traveling.
Swing Left	Control used to swing the boom to the left.
Swing Right	Control used to swing the boom to the right.
Telescope In	Control used to retract the boom.
Telescope Out	Control used to extend the boom.
Tilt Down	Control used to tilt the basket down.
Tilt Up	Control used to tilt the basket up.

B. Aerial Platform Lift Parts: (Reference manufacturers “Operating and Safety Handbook”.)

III. Operating Procedures

A. (Reference manufacturers video)

B. (Reference manufacturers “Operating and Safety Handbook”)

IV. General Safety Rules

A. Only authorized, trained employees shall operate an aerial lift.

B. Lower basket to grade level to gain access to the platform.

C. Aerial lifts operated near energized overhead lines shall be operated so that a minimum clearance of 10ft. (305 cm) is maintained.

D. Lift controls shall be tested prior to use to determine that such controls are in safe working condition. (See Attachment “A”)

E. Belting off to an adjacent pole, structure, or equipment while working from an aerial lift shall not be permitted.

F. Employees shall always stand firmly on the floor of the basket, and shall not sit or climb on the edge of the basket or use planks, ladders, or other devices for a work position.

G. A full body harness shall be worn and a lanyard attached to the boom or basket when working from an aerial lift. (Ref. Fall Protection Policy)

H. Boom and basket load limits specified by the manufacturer shall not be exceeded.

I. Outriggers, when used, shall be positioned on pads or a solid surface. Wheel chocks shall be installed before using an aerial lift on an incline.

J. Climbers shall not be worn while performing work from an aerial lift.

K. The insulated portion of an aerial lift shall not be altered in any manner that might reduce its insulating value.

L. Do not travel with the boom elevated or extended. However, it may be necessary to extend the boom while moving a few feet to position it.

M. Aerial lifts may not be "field modified" for uses other than those intended by the manufacturer.

N. Do not exceed the machine placard maximum platform load.

O. Always look in the direction you are moving the unit, and be aware of everything above, below and around you. Never move the unit without a ground person.

P. Do not attach wires or cables to the platform. Many aerial lifts have a place to plug in an electrical cord cord.

Q. Other personnel should be restricted from passing or working underneath the raised platform.

R. A malfunctioning lift shall be shutdown and removed from service until repaired.

S. Attachments

Attachment “A” Aerial Platform Lift Operators Daily Checklist
Attachment “B” Aerial Platform Lift Written Examination
Attachment “C” Aerial Platform Lift Operational Field Checkout
Attachment “D” Aerial Platform Lift Certification

Attachment "A"

Aerial Platform Lift Operators Daily Checklist

Name	Date	Equipment Number

Inspection	OK	Requires Repair
1. Hydraulic system (Look for leaks)		
2. Basket Condition (Look for loose objects or damage)		
3. Fuel Supply		
4. Tire Condition		
5. Engine Oil Level		
6. Battery Water Level		
7. Check ground controls both emergency and with engine running		
8. Required Safety Equipment: • Fire extinguisher • Fall Protection • Respirator if required • Eye Wash		
9. Brakes (Brakes engage when drive lever is in neutral)		
10. All switch and control name decals legible		
11. Check each function: • Lift up • Lift down • Swing right • Swing left • Telescope in • Telescope out • Platform lever up • Platform lever down • Drive forward • Drive reverse • Steer right • Steer left • Check operation of platform controls on emergency power		

Do not use equipment and notify Supervisor if any defects or malfunctions are found.

Return checklist to Supervisor.

Attachment "B"

Aerial Platform Lift Written Classroom Examination

Name:_____ SS #_____

Date:_____ Grade:_____ Instructor:_____

Match the terms with the correct meaning:

1.

Term	Answer	Meaning
Tilt Down		1. Light indicating base is 5 degrees or more out of level-don't swing, raise or scope if out of level.
Tilt Up		2. Arrows used to indicate the basket location to the drive wheels.
Telescope Out		3. Axles that extend, used to stabilize the aerial platform lift.
Telescope In		4. Button used to start the aerial platform lift
Swing Right		5. Control used to extend the boom.
Swing Left		6. Control used to help start the gas engine when it is cold.
Steer Right		7. Control used to kill the aerial platform lift in an emergency situation.
Steer Left		8. Control used to lift the boom up.
Start Button		9. Control used to lower the basket in an emergency
Outriggers		10. Control used to lower the boom down.
On/Off Ignition		11. Control used to move the aerial platform backwards.
Maximum Weight Placard		12. Control used to move the aerial platform forward.
Lift Up		13. Control used to only rotate the basket left.
Lift Down		14. Control used to only rotate the basket right.
Level Warning Light		15. Control used to retract the boom.
Ground Controls		16. Control used to set the engine speed.
Forward and Reverse Arrows		17. Control used to set the speed to which the aerial platform will travel.
Extending Axles		18. Control used to swing the boom to the left.
Engine Speed		19. Control used to swing the boom to the right.
Emergency Stop		20. Control used to tilt the basket down.
Emergency lowering Valve		21. Control used to tilt the basket up.

Drive Speed		22. Control used to turn the aerial platform left when traveling.
Drive Reverse		23. Control used to turn the aerial platform right when traveling.
Drive Forward		24. Control used to turn the ignition on or off.
Deadman Switch		25. Controls used to operate the aerial lift from the ground in case of an emergency.
Choke		26. Controls usually located in the front middle of the basket area.
Basket Rotate Right		27. Enclosed area where operator controls the aerial platform lift and performs all necessary work from this area.
Basket Rotate Left		28. Foot switch that must be depressed before any of the controls on the aerial platform lift will operate.
Basket Controls		29. Placard on the aerial platform lift used stating the amount of weight the lift can handle.
Basket		30. Stabilizing devices used to stabilize the aerial platform lift.
Auxiliary Power		31. Valve used to lower the basket when the aerial platform lift has no power.

Circle the most correct answer:

2. Who may operate an aerial lift?
   a) All employees.
   b) Only authorized personnel.
   c) Skilled craftsman.
   d) Your Supervisor.

3. What type of fall restraint is required?
   a) Body belt.
   b) Full body harness with lanyard attached to the boom or basket.
   c) None.
   d) Anything you want.

4. How many items can be stacked on the floor of the basket?
   a) None.
   b) Anything up to 500#.
   c) Varies with the weight of the personnel.
   d) As many as you can get.

5. What is the distance that must be maintained when operating near electrical lines?
   a) The width of the basket.
   b) Half the elevation of the platform.
   c) 10 ft up to 50 kV
   d) 50 feet from all powerlines

Answer True or False circle one:

6. A daily checklist must be filled out before operating an aerial platform list.
   True
   False

7. A ground control is the place you ground electrical circuits on the aerial lift.
   True
   False

8. The operator must keep his/her arms legs and other body parts inside the basket while operating the aerial lift.
   True
   False

Answer key

1.

Term	Answer	Meaning
Tilt Down	20	1. Light indicating base is 5 degrees or more out of level don't swing, raise or scope if out of level.
Tilt Up	21	Arrows used to indicate the direction of travel
Telescope Out	5	Axles that extend, used to stabilize the aerial platform lift.
Telescope In	15	Button used to start the aerial platform lift
Swing Right	19	Control used to extend the boom.
Swing Left	18	Control used to help start the gas engine when it is cold.
Steer Right	23	Control used to kill the aerial platform lift in an emergency situation.
Steer Left	22	Control used to lift the boom up.
Start Button	4	Control used to lower the basket in an emergency
Outriggers	30	Control used to lower the boom down.
On/Off Ignition	24	Control used to move the aerial platform backwards.
Maximum Weight Placard	29	Control used to move the aerial platform forward.
Lift Up	8	Control used to only rotate the basket left.
Lift Down	10	Control used to only rotate the basket right.
Level Warning Light	1	Control used to retract the boom.
Ground Controls	25	Control used to set the engine speed.
Forward and Reverse Arrows	2	Control used to set the speed to which the aerial platform will travel.
Extending Axles	3	Control used to swing the boom to the left.
Engine Speed	16	Control used to swing the boom to the right.
Emergency Stop	7	Control used to tilt the basket down.
Emergency lowering Valve	9	Control used to tilt the basket up.
Drive Speed	17	Control used to turn the aerial platform left when traveling.

Drive Reverse	11	Control used to turn the aerial platform right when traveling.
Drive Forward	12	Control used to turn the ignition on or off.
Deadman Switch	28	Controls used to operate the aerial lift from the ground in case of an emergency.
Choke	6	Controls usually located in the front middle of the basket area.
Basket Rotate Right	14	Enclosed area where operator controls the aerial platform lift and performs all necessary work from this area.
Basket Rotate Left	13	Foot switch that must be depressed before any of the controls on the aerial platform lift will operate.
Basket Controls	26	Placard on the aerial platform lift used stating the amount of weight the lift can handle.
Basket	27	Stabilizing devices used to stabilize the aerial platform lift.
Auxiliary Power	31	Valve used to lower the basket when the aerial platform lift has no power.

Circle the most correct answer:

2. Who may operate an aerial lift?
   All employees.
   Only trained authorized personnel.
   Skilled craftsman.
   Your Supervisor.

3. What type of fall restraint is required?
   e) Body belt.
   f) Full body harness with lanyard attached to the boom or basket.
   g) None.
   h) Anything you want.

4. How many items can be stacked on the floor of the basket?
   e) None.
   f) Anything up to 500#.
   g) Varies with the weight of the personnel.
   h) As many as you can get.

5. What is the distance that must be maintained when operating near electrical lines?
   e) The width of the basket.
   f) Half the elevation of the platform.
   g) 10 ft up to 50 kV
   h) 50 feet from all powerlines

Answer True or False circle one:

6. A daily checklist must be filled out before operating an aerial platform list.
   True
   False

7. A ground control is the place you ground electrical circuits on the aerial lift.
   True
   False

8. The operator must keep his/her arms legs and other body parts inside the basket while operating the aerial lift.
   True
   False

9. An aerial lift may be modified by anyone.
   True
   False

10. The Deadman switch must be depressed before the aerial lift will operate.
    True
    False

Attachment "C"

Aerial Platform Lift Operational Field Checkout

Name:_____ SS #_____

Date:_____ Grade:_____Observer/Instructor:_____

Operation	**Satisfactory**	**Needs Improvement**
Performs proper checklist inspection.		
Approaches points properly		
Removes any obstacles in the path of travel		
Slows down at corners or intersections		
Looks where he/she is going		
Travels in reverse properly		
Corners properly		
Starts, stops and performs moves smoothly		
Obeys plant traffic rules		
Demonstrates knowledge of all control functions		
Avoids uneven terrain		
Parks the lift properly		
Operates the aerial lift following all safety rules and regulations that apply.		

Attachment "D"

Aerial Platform Lift Qualification

Name:_____ SS #_____

Date:_____ Certified by:_____

The above has satisfied all the requirements of the Aerial Lift Operator Qualification Program as listed:

	Instructor Init.	Date
1. Aerial Lift Operator Training Program (If required)	_____	_____
2. Written Examination	_____	_____
3. Operational Field Examination	_____	_____

Qualified to operate aerial platforms of the following size and type:

_____

_____

_____

RIGGING

Applicable OSHA Standard: 29 CFR 1926.251

PURPOSE

To establish minimum requirements for the use and inspection of wire rope, slings, hooks, and sheaves and provides guidelines to insure safe practices in the use of these lifting devices.

SCOPE

This applies to all of our employees and contract employees working at all of our controlled worksites.

DEFINITIONS

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

Designated Person - a person selected by the employer as being qualified to perform specific duties. Refer to Competent or Qualified Person definitions.

Frequent inspections - daily to monthly intervals.

Inspection Records - certification records which include the date of inspection, signature of the person who performed the inspection and the serial number, or other identifier, of the equipment being inspected. This certification record shall be kept readily available.

Lay - The amount of twist, the angle of the strands, and the angle of metal threads in the strands.

Periodic inspections - one to twelve month intervals.

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

Running Ropes - wire rope used in lifting. Lifting lines from the hook or load block down the boom and wound on to the auxiliary or main hoisting drums.

Standing Ropes - a supporting wire rope which maintains a constant distance between the points of attachment to the two components connected by the rope as in the pendent lines or bridal assembly.

Strand - Metal fibers twisted, plaited, or laid parallel to form a unit for further twisting or plaiting into wire rope.

Sheaves - a pulley which rotates as the running rope moves around it when raising or lowering the load block.

Slings - a lifting attachment used to connect the load to the load block or hook. Material of construction can be of wire rope, alloy steel chain, natural or synthetic fiber rope (conventional three strand construction), metal mesh, or synthetic web (nylon, polyester, and polypropylene) and rated for specific weights depending on the way it is connected to the load.

Wire Rope - a cable specifically designed in various sizes and weight capacities for use in lifting.

RESPONSIBILITIES

Project Superintendent

- Insure that these requirements are met.
- Participate in the required audit process.
- Insure a competent person is designated for inspection.

General Foreman

- Employees know, understand, and comply with these requirements.
- Employees are trained in the procedures and use of equipment they are to use to complete the job.
- A competent person to inspect all lifting equipment prior to use and during use to make sure it is in safe operating condition is designated.
- Audits for compliance on a periodic (monthly) basis are conducted.
- Corrections to all deviations or inadequacies are completed in a timely manner.

- Failure to comply with these requirements will result in disciplinary action, up to and including discharge.

Individuals - are responsible to:

- Know, understand, and comply with these requirements.
- Inspect equipment, review procedures, and review and complete checklist(s) PRIOR to use.
- Report any unsafe conditions to supervision.
- Know that failure to comply with these requirements will result in disciplinary action, up to and including discharge.

PROCEDURES

Wire rope, hooks, slings and sheaves shall be Inspected initially when purchased or received, before use, and monthly for:

- Evidence of overloading, or;
- Excessive wear, or;
- Damage (broken wires, kinking, crushing, cutting, and corrosion from heat, weather, or chemical attack).

Defective equipment shall be immediately cut and discarded or returned to supplier/rental company.

Slings that are damaged or defective shall not be used.

Slings shall not be shortened with knots, bolts, or other make-shift devices.

Slings shall be padded or protected from sharp edges.

The area below suspended loads shall be kept clear of personnel.

Slings shall not be pulled from under a load resting on the sling.

Web slings and natural or synthetic rope slings shall not be used where temperatures exceeds 180 degrees F.

Slings shall not be loaded in excess of their rated load capacities.

Hands or fingers shall not be placed between the sling and it's load while the sling is being tightened around the load.

WIRE ROPE

Wire rope shall be immediately taken out of service and discarded when ever any of the following conditions exist:

- In running ropes (lifting lines), six (6) randomly distributed broken wires in one lay or three (3) broken wires in one strand in one lay;

- One outer wire broken at the point of contact with the core of the rope which has worked its way out of the rope structure and protrudes or loops out from the rope structure.

- Wear of one-third (1/3) the original diameter of outside individual wires. Kinking, crushing, bird caging, or any other damage resulting in distortion of the wire rope structure;

- Evidence of any heat damage from any cause;

- Reduction from nominal diameter of the following:

    a. More than one-sixty-fourth (1/64) inch for diameters up to and including five-sixteenths (5/16) inch;

    b. One-thirty-second (1/32) inch for diameters three-eighths (3/8) inch to and including one-half (1/2) inch;

    c. Three-sixty-fourths (3/64) inch for diameters nine-sixteenths (9/16) inch to and including three-fourths (3/4) inch;

    d. One-sixteenths (1/16) inch for diameters seven-eighths (7/8) inch to one and one-eighths (1/8) inch inclusive, and;

    e. Three-thirty-seconds (3/32) inch for diameters one and one-fourth to one and one-half (1/4 to 1/2) inches inclusive;

- In standing ropes, more than two (2) broken wires in one lay in sections beyond end connections or more than one broken wire at an end connection.

- When evidence of core failure in rotation resistant ropes is recognized by a lengthening of the lay and localized reduction in diameter.

- Wire rope safety factors shall be in accordance with American National Standards Institute (ANSI) B30.5-1968 or SAE J959-1966.

HOOKS

The load block shall be inspected every ten (10) hours or daily for the following:

- Hook pivots freely,
- Sheaves rotates freely,
- End play in the thrust bearing.
- Evidence of corrosion from heat, weather, or chemical attack.

Hooks, hook bolts and nuts shall be disassembled and inspected every five-hundred (500) hours or annually by a magnetic-particle process and replaced if one of the following conditions exist:

- One (1) or more cracks are found on the hook, threads, or nut,
- Wear, cracks, pulling, or other damage,
- Any thread damage
- Hardness of nut not following manufacturer's recommendations.

Rental mobile hoisting equipment hook assemblies shall be disassembled and inspected upon arrival to site unless proof of annual inspection is current.

Hooks shall be immediately taken out of service and destroyed or returned to rental company when any of the following conditions exist.

- Cracked, gouges, or other indications of wear, or;
- Opened more than fifteen (15%) percent of the normal throat opening measured at the narrowest point, or;
- Twisted more than ten (10) degrees from the plane of the unbent hook.
- Evidence of corrosion from heat, weather, or chemical attack.
- Any evidence of damage or wear that would make use unsafe.

SLINGS

Wire rope slings shall not be used in excess of the rated load capacities shown in 29 CFR Table N-184-3 through N-184-14.

Slings not included in these tables shall be used only in accordance with sling manufacture's recommendations.

Each sling shall be marked to show rated capacities.

Each sling shall be marked for inspection identification.

The safe operating temperature ranges are:

Fiber core wire rope of all grades shall be permanently removed from service and destroyed if exposed to temperatures in excess of 200 degrees F.

Non fiber core wire rope of any grade is 60 degrees F. to 400 degrees F. When used above or below this range the sling manufacture's recommendations shall be followed.

End attachments shall be proof tested by the sling manufacturer or equivalent entity at twice their rated capacity PRIOR to initial use.

The certificate of proof testing shall be maintained for the life of the sling.

Wire rope slings shall be immediately taken out of service and destroyed when any of the following conditions exist:

- More than two (2) broken wires in one lay in sections beyond end connections or more than one (1) broken wire at end connections, or;
- Safe operating temperature exceeded, or;
- Ten (10) randomly distributed broken wires in one rope lay, or five (5) broken wires in one strand in one rope lay, or;
- Wear or scraping of one-third (1/3) the original diameter of outside individual wires, or;
- Kinking, bird caging, crushing or any other damage resulting in distortion of the wire rope structure, or;
- End attachments that are cracked, deformed, or worn, or;

- Hooks that have been opened more than fifteen (15%) percent of the normal throat opening measured at the narrowest point or twisted more than ten (10) degrees from the plane of the unbent hook, or;

- Corrosion from heat, weather, or chemical attack of the rope or end attachment.

Alloy Steel Chain:

- Alloy steel chain slings shall not be used in excess of the rated load capacities found in 29 CFR 1910.184 Table N-184-1.

- Slings not included in this table shall be used only in accordance with sling manufacturer's recommendations.

- Each alloy steel chain sling shall be marked to show rated capacity.

- Each alloy steel chain sling shall be marked for inspection identification.

- The safe operating temperature ranges are:

    a. Reduction of maximum working load limits found in Table N-184-1 according to manufacturer's recommendations when exposed to service temperatures in excess of 600 degrees F.

    b. Immediately and permanently removed from service when heated to 1000 degrees F. or above.

- End attachments shall have a rated capacity at least equal to that of the alloy steel chain with which they are used.

- Use of alloy steel chain slings is not recommended. If it is to be used either:

    a. New chains are purchased, used one time, and destroyed, or;

    b. After use, if kept, all applicable regulatory inspections are met.

- The following inspections are to be performed if kept:

    a. Permanently affixed, durable identification stating size, grade, rated capacity, and reach.

    b. Attachments - hooks, rings, oblong links, pear shaped links, or other attachments shall have a rated capacity equal to the alloy steal chain.

c. Makeshift links or fasteners formed of bolts or rods, or other such attachments shall not be used.

d. Periodic inspection on a regular basis based on the following criteria:

1. Frequency of use.

2. Severity of service conditions.

3. Nature of lifts being made.

4. Experience gained on the service life of slings used in similar circumstances.

5. Not greater than twelve (12) months.

- The most resent month in which an inspection was made shall be recorded and maintained for the lift of the alloy steel chain.

- The designated competent person shall inspect for the following:

a. Wear

b. Defective welds

c. Deformation

d. Increase in length

- Proof testing shall be conducted before use and each new, repaired, or reconditioned alloy steel chain sling, including all welded components in the sling assembly by the sling manufacturer or equivalent entity, in accordance with paragraph 5.2 of the American Society of Testing and Materials Specification A391-65, and ANSI G61.1-1968.

- The certificate of proof test shall be maintained for the life of the alloy steel sling.

- Alloy steel chain slings shall be immediately removed from service when:

a. Hooks are cracked, or;

b. Opened more than fifteen (15%) per cent of the normal throat opening measured at the narrowest point, or;

c. Twisted more than ten (10) degrees from plane of the unbent hook.

Natural or Synthetic Fiber Rope:

- Made from conventional three strand construction fiber rope shall not be used with loads in excess of the rated load capacities prescribed in Tables N-184-16 through N-184-19 of 29 CFR 1910.184.

- Fiber rope slings shall have a diameter of curvature meeting at least the minimums specified in Figures N-184-4 and N-184-5.

- Slings not included in these tables shall be used only in accordance with the manufacturer's recommendations.

- Each fiber rope sling shall be marked to show rated capacities.

- Each fiber rope sling shall be marked for inspection identification.

- The safe operating temperature range is from minus 20 degrees F. to plus 180 degrees F. The manufacturer's recommendations are to be used when used outside this range.

- Sliced fiber rope is not to be used unless the requirements of 29 CFR 1910.184 (h)(3) "Splicing" are used.

- End attachments shall not have sharp edges or projections.

- Natural or synthetic fiber rope slings shall be immediately taken out of service if any of the following conditions are present:

  a. Abnormal wear,

  b. Powdered fiber between strands,

  c. Broken or cut fibers,

  d. Variations in the size or roundness of strands,

  e. Discoloration or rotting, or;

  f. Distortion of hardware in the sling.

- Use of repaired or reconditioned fiber rope slings is prohibited.

Synthetic Web:

- Synthetic web slings shall not be used with loads in excess of the rated load capacities found in 29 CFR 1910.184 Tables N-184-20 through N-184-22.

- Slings not included in these tables shall be used only in accordance with sling manufacturer's recommendations.

- Each sling shall be marked to show rated capacities for each type of hitch and type of synthetic web material.

- Each sling shall be marked for inspection identification.

- Webbing shall be of uniform thickness and width and selvage edges shall not be split from the webbing's width.

- Fittings shall be of a minimum breaking strength equal to that of the sling and have no sharp edges or projections.

- Stitching shall be the only method of attachment of fittings to webbing and to form eyes.

- The following restrictions apply:

    a. Nylon web slings are not to be used where fumes, vapors, sprays, mists, or liquids of acids or phenols are present.

    b. Polyester and polypropylene web slings are not to be used where fumes, vapors, sprays, mists, or liquids of caustics are present.

    c. Web slings with aluminum fittings shall not be used where fumes, vapors, sprays, mists, or liquids of caustics are present.

- Synthetic web slings of polyester or nylon shall not be used at temperatures in excess of 180 degrees F. Polypropylene web slings shall not be used at temperatures in excess of 200 degrees F.

- Repaired synthetic web slings are not to used unless the repair is done by the sling manufacturer or an equivalent entity.

- Each repaired sling shall be proof tested to twice the rated capacity by the sling manufacturer or an equivalent entity PRIOR to returning to service.

- The certificate of the proof test shall be maintained for the life of the sling.

- Synthetic web slings shall be immediately removed from service if any of the following conditions exist:

a. Acid or caustic burns,

b. Melting or charring of any part of the sling,

c. Snags, punctures, cuts or tears,

d. Broken or worn stitches,

e. Distorted fittings.

Metal Mesh:

- Metal mesh slings shall not be used in excess of their rated capacities as found in 29 CFR 1910.184 Table N-184-15.
- Slings not found in this table shall be used in accordance with manufacturer's recommendations.
- Each metal mesh sling shall have permanently attached to it a durable marking that states the rated capacity for vertical basket hitch and choker hitch loadings.
- Each metal mesh sling shall be marked for inspection identification.
- Handles shall have a rated capacity at least equal to the metal fabric.
- Handle attachment shall conform to the following:
- The rated load capacity of the sling is not reduced,
- The load is evenly distributed across the width of the fabric,
- Sharp edges or projections will not damage the fabric.
- All new and repaired metal mesh slings shall be proof tested by the manufacturer or equivalent entity PRIOR use.
- The certificate of proof testing shall be maintained for the life of the sling.
- The safe operating temperatures are as follows:
- Non impregnated metal mesh slings minus 20 degrees F. though plus 550 degrees F.
- Polyvinyl chloride or neoprene impregnated metal mesh slings zero degrees to plus 200 degrees F.

- Operations outside these temperature ranges OR all other impregnating materials the sling manufacturer's recommendations shall be followed.

- Only the sling manufacturer or equivalent entity can repair metal mesh slings.

- Metal mesh slings shall be immediately removed from service if any of the following conditions exist:

- Broken weld or brazed joint along the sling edge,

- Reduction in wire diameter of twenty-five (25%) per cent due to abrasion or fifteen (15%) per cent due to corrosion,

- Lack of flexibility due to distortion of fabric,

- Distortion of the female handle so the depth of the slot is increased more than ten (10%) per cent,

- Distortion of either handle so that the width of the eye is decreased more than ten (10%) per cent

- A fifteen (15%) per cent reduction of the original cross sectional area of metal at any point around the handle eye,

- Distortion of either handle out of its plane.

Sheaves:

- Sheaves shall be inspected for:

    a. Groove depth, width, contour, and smoothness

    b. Broken or chipped flanges

    c. Cracks in hubs and spokes

    d. Signs of rope contact with sheave guards

    e. Sheave bearings and shaft

    f. Out of round condition

    g. Alignment with other sheaves

    h. Sheaves too small or large for diameter of rope used

AUDIT REQUIREMENTS

All equipment must be inspected PRIOR to use.

Supervision will inspect equipment and records of inspections as work is being performed.

No formal audit is required.

TRAINING REQUIREMENTS

Training will be conducted on these requirements annually, whenever these requirements are revised, and for new crane operators and riggers or newly hired crane operators and riggers.

ROPE, CABLE AND SLING INSPECTION

USE AND INSPECTION OF WIRE ROPES, HOOKS, SLINGS, AND SHEAVES

DEFINITIONS:

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

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

Daily inspections - Inspection of ropes, cables, and slings shall be made daily by a qualified person.

Monthly inspections - Monthly inspections which include the date of inspection, the signature of the person who performed the inspection and the serial number, or other identifier, of the ropes, cables and slings shall be made monthly on an inspection form.

Lay - The amount of twist, the angle of the strands, and the angle of metal threads in the strand.

Running Ropes - Wire ropes used in lifting. Lifting lines from the hook or load block down the boom and wound on to the auxiliary or main hoisting drums.

Standing Ropes - A supporting wire rope which maintains a constant distance between the points of attachment to the two components connected by the rope as in the pendent lines and bridal assembly.

Strand - Metal fibers twisted, plaited, or laid parallel to form a unit for further twisting or plaiting into wire rope.

Sheaves - A pulley which rotates as the running rope moves around it when raising or lowering the load block.

Slings - A lifting attachment used to connect the load to the load block or hook. Material of construction can be of wire rope, alloy steel chain, natural or synthetic fiber rope (conventional three strand construction), metal mesh, or synthetic web

(nylon, polyester, and polypropylene) and rated for specific weights depending on the way it is connected to the load.

Wire Rope - A cable specifically designed in various sizes and weight capacities for use in lifting.

RESPONSIBILITY:

Project Superintendent:

Will ensure that all qualified workers know, understand, and comply with the requirements of this standard.

Workers are trained in the procedures and use of equipment they are to use to complete the job.

Audit and inspect for compliance.

Corrections to all deviations or inadequacies are completed in a timely manner.

Report any unsafe conditions to supervision immediately.

PROCEDURES:

Wire rope, hooks, slings and sheaves shall be:

Inspected initially when purchased or received, before use, and;

Monthly for:

- Evidence of overloading, or;
- Excessive wear, or;
- Damaged (broken wires, kinking, crushing, cutting, and corrosion from heat, weather, or chemical attack).

Defective equipment shall be immediately cut and discarded or returned to supplier/rental company.

Slings that are damaged or defective shall not be used.

Slings shall not be shortened with knots, bolts, or other make-shift devices.

Slings shall be padded or protected from sharp edges.

The area below suspended loads shall be kept clear of personnel.

Slings shall not be pulled from under a load resting on the sling.

Web slings shall not be used where temperatures exceed 180 degrees F.

Slings shall not be loaded in excess of their rated load capacities.

Hands, fingers or feet shall not be placed between the sling and it's load while the sling is being tightened around the load.

WIRE ROPE:

Wire rope shall be taken "Out of Service" immediately and discarded when ever any of the following conditions exist:

In running ropes (lifting lines), six (6) randomly distributed broken wires in one lay or three (3) broken wires in one strand in one lay.

One outer wire broken at the point of contact with the core of the rope which has worked its way out of the rope structure and protrudes or loops out from the rope structure.

Wear of one-third (1/3) the original diameter of outside individual wires. Kinking, crushing, bird caging, or any other damage resulting in distortion of the wire rope structure.

Evidence of any heat damage from any cause.

Reduction from nominal diameter of the following:

- More than one-sixty-fourth (1/64) inch for diameters up to and including five-sixteenths (5/16) inch;
- One-thirty-second (1/32) inch for diameters three-eight's (3/8) inch to and including one-half (1/2) inch;
- Three-sixty-fourths (3/64) inch for diameters nine-sixteenth (9/16) inch to an including three-fourths (3/4) inch;
- One-sixteenth (1/16) inch for diameters seven-eighths (7/8) inch to one and one-eighths (1-1/8) inch inclusive, and;

- (1-1/4) to one and one-half (1-1/2) inches inclusive;
- In standing ropes, more than two (2) broken wires in one lay in sections beyond end connections or more than one broken wire at an end connection.
- When evidence of core failure in rotation resistant ropes is recognized by a lengthening of the lay and localized reduction in diameter.
- Wire rope safety factors shall be in accordance with American National Standards Institute (ANSI) B30.5-1968 or SEA J959-1966.

HOOKS:

The load block shall be inspected every ten (10) hours or daily for the following:

- Hook pivots freely,
- Sheaves rotate freely,
- End play in the thrust bearings,
- Evidence of corrosion from heat, weather, or chemical attack.

Hooks, hook bolts and nuts shall be disassembled and inspected every five-hundred (500) hours or annually by a magnetic-particle process and replaced if one of the following conditions exists:

- One (1) or more cracks are found on the hook, threads, or nut;
- Wear, cracks, pulling, or other damage;
- Any thread damage;
- Hardness of nut not following manufacturers' recommendations.

Rental mobile hoisting equipment hook assemblies shall be disassembled and inspected upon arrival to site unless proof of annual inspection is current.

Hooks shall be immediately taken "Out of Service" and destroyed or returned to the rental company when any of the following conditions exist:

- Cracked, gouges, or other indications of wear, or;
- Opened more than fifteen (15%) percent of the normal throat opening measured at the narrowest point, or;

- Twisted more than (10) degrees from the plane of the unbent hook; or;
- Evidence of corrosion from heat, weather, or chemical attack, or;
- Any evidence of damage or wear that would make use unsafe.

SLINGS:

Wire Rope -

- Wire rope slings shall not be used in excess of the rated load capacities shown in 29 CFR 1910.184 Table N-184-3 through N-184-14.
- Slings not included in these tables shall be used only in accordance with sling manufacturer's recommendations.
- Each sling shall be marked to show rated capacities.
- Each sling shall be marked for inspection identification.
- The safe operating temperature ranges are:
    i. Fiber core wire rope of all grades shall be permanently removed from service and destroyed if exposed to temperatures in excess off 200(F.
    ii. Non fiber core wire rope of any grade is 60(F. to 400(F. When used above or below this range the sling manufacturer's recommendations shall be followed.
- End attachments shall be proof tested by the sling manufacturer or equivalent entity at twice their rated capacity PRIOR to initial use.
- The certificate of proof testing shall be maintained for the life of the sling.
- Wire rope slings shall be immediately taken "Out of Service" and destroyed when any of the following conditions exist:
    i. More than two (2) broken wires in one lay in sections beyond end connections or more than one (1) broken wire

       at end connections, or;
    ii. Safe operating temperature exceeded, or;

iii. Ten (10) randomly distributed broken wires in one rope lay, or five (5) broken wires in one strand in one rope lay, or;

iv. Wear or scraping of one-third (1/3) the original diameter of outside individual wires, or;

v. Kinking, bird caging, crushing or any other damage resulting in distortion of the wire rope structure, or;

vi. End attachments that are cracked, deformed, or worn, or;

vii. Hooks that have been opened more than fifteen (15%) percent of the normal throat opening measured at the narrowest point or twisted more than ten (10() degrees from the plane of the unbent hook, or;

viii. Corrosion from heat, weather, or chemical attack of the rope or end attachment.

Synthetic Web -

- a. Synthetic web slings shall not be used with loads in excess of the rated load capacities.
- Slings should be used only in accordance with sling manufacturer's recommendations.
- Each sling shall be marked to show rated capacities for each type of hitch and type of synthetic material.
- Each sling shall be marked for inspection identification.
- Webbing shall be of uniform thickness and width and selvage edges shall not be split from the webbing's width.
- Fittings shall be inspected and found to have no sharp edges or projections.
- Stitching shall be the only method of attachment of fittings to webbing and to form eyes.
- The following restrictions apply:

    i. Nylon web slings are not to be used where fumes, vapors, sprays, mists, or liquids of acids or phenolics are present.

ii. Polyester and polypropylene web slings are not to be used where fumes, vapors, sprays, mists, or liquids of caustics are present.

iii. Web slings with aluminum fittings shall not be used.

- Synthetic web slings of polyester or nylon shall not be used at temperatures in excess of 180(F. Polypropylene web slings shall not be used at temperatures in excess of 200(F.

- Repaired synthetic web slings are not to be used unless the repair is done by the sling manufacturer or an equivalent entity.

- Each repaired sling shall be proof tested to twice the rated capacity by the sling manufacturer or an equivalent entity prior to returning to service.

- The certificate of the proof test shall be maintained for the life of the sling.

- Synthetic web slings shall be immediately removed from service if any of the following conditions exist:

i. Snags, punctures, cuts or tears,

ii. Broken or worn stitches,

iii. Distorted fittings.

SHEAVES:

Inspect for the following:

- Groove Depth, width, contour, and smoothness.

- Broken or chipped flanges.

- Cracks in hubs and spokes

- Signs of rope contact with sheaves guards.

- Sheaves bearings and shaft.

- Out of round condition.

- Alignment with other sheaves.
- Sheaves too small or large for diameter of rope used.

AUDIT REQUIREMENTS:

- All equipment must be inspected daily prior to use.
- Supervision will inspect equipment and records of inspection as work is being performed.

TRAINING REQUIREMENTS:

Training will be conducted on the requirements of this standard annually, or whenever there are changes to the standard.

PROJECT SUPERINTENDENT SAFETY EVALUATION

PURPOSE

To evaluate the safety performance of Project Superintendents and site specific safety plans, OSHA regulations and applicable client safety rules and regulations.

SCOPE

Applies to all Project Superintendents in charge of any work site over which we control.

PROJECT SUPERINTENDENT SAFETY RESPONSIBILITIES

The Project Superintendent is responsible for the enforcement of all safety rules and regulations at each work site for which he/she is assigned. The safety role of the Project Superintendent includes assurance that;

- A current and up to date Safety and Health Guide along with a site-specific safety plan is on site and accessible to all employees.
- Each General Foreman and Craft Foreman maintains a thorough working knowledge of the Safety Policies and Procedures Manual and the clients safety manual requirements.
- All employees successfully complete all required safety training such as our new hire orientation, appropriate safety council and client site specific orientation before assignment to a job.
- All affected employees attend periodic OSHA required safety training when scheduled.
- Client safety rules and regulations are passed on to our employees assigned to that particular worksite.
- Only authorized employees will operate motor vehicles, aerial platform lifts, forklifts, cranes or any other piece of equipment that requires specialized training.
- Safety meetings of meaningful and appropriate topics are held with all employees on a regular basis.
- Appropriate investigation of all accidents and injuries are conducted in a timely manner.
- Job site safety audits are conducted jointly with the Site Safety Supervisor/Safety

Representative and all recommendations of such audits are completed in a timely manner.

- All employees have the authority and duty to refuse to perform any job they think is unsafe and bring it to the attention of their Craft Foreman before work is continued.

- An OSHA required competent person is on site at all times for any particular job requiring such.

EVALUATION PROCEDURES

- On a quarterly basis, the Safety Director-Corporate will evaluate the safety performance of each Project Superintendent.

- The evaluation will be conducted by means of an interview and a worksite walk through with the Project Superintendent.

- Attachment "A" Project Superintendent Safety Evaluation Form will be completed jointly by the Safety Director-Corporate and the Project Superintendent being evaluated.

- Upon completion of the audit both the Safety Director-Corporate and the Project Superintendent will sign the audit form.

- The signed form will be forwarded to the Construction Manager and then to the Company President for review and approval.

ATTACHMENT "A"

PROJECT SUPERINTENDENT SAFETY EVALUATION FORM

Date:_____ Job Number:_____

Worksite Location:_____ Project Superintendent:_____

Note: Each section must be completed jointly by the Safety Director-Corporate and the Project Superintendent.

1.0_____AND CLIENT SAFETY POLICIES AND PROCEDURES MANUAL

1.1 Is our Safety and Health Guide and a site specific safety plan on site and available to all employees?

Yes △ No △

N/A Comments:

_____

_____

_____

_____

_____

1.2 Have all General Foremen and Craft Foremen been trained on the contents of our safety and health manual and site specific safety plan and is there documentation of such?

Yes △ No △

N/A Comments:

_____

_____

_____

_____

_____

1.3 Has the client been furnished a copy of our Safety and Health Manual and site specific safety plan?

Yes ⧋ No ⧋

N/A Comments:

_____

_____

_____

_____

_____

1.4 Do you have a copy of the client safety manual on site?

Yes ⧋ No ⧋

N/A Comments:

_____

_____

_____

_____

_____

1.5 Have all General Foremen and Craft Foremen been trained on the contents of the client safety manual and is there documentation of such?

Yes ⧋ No ⧋

N/A Comments:

_____

_____

_____

_____

_____

2.0 SAFETY TRAINING

2.1 Have all employees received New Hire Orientations and is there documentation of such?

Yes △ No △

N/A Comments:

_____

_____

_____

_____

_____

2.2 Have all affected employees received the following OSHA required training and is there documentation of such?

Lockout/Tagout

a) Authorized employees Yes No N/A
b) Affected employees Yes No N/A

Confined Space Entry

a) Entry Supervisor △ Yes △ No △ N/A
b) Authorized Entrants △ Yes △ No △ N/A
c) Attendants △ Yes △ No △ N/A

Scaffolds △ Yes △ No △ N/A
Fall Protection △ Yes △ No
△ N/A Respiratory Protection △ Yes △ No
△ N/A Trenching and Excavation △ Yes
△ No △ N/A PPE △ Yes △ No
△ N/A
Hazard Communication △ Yes △ No
△ N/A Emergency Action Plans △ Yes
△ No △ N/A

Comments:

_____

_____

_____

2.3 Have all employees been trained on all applicable client safety rules and regulations and is there documentation of such?

Yes △ No △

N/A Comments:

_____

_____

_____

_____

_____

3.0 EQUIPMENT OPERATORS

3.1 Are only authorized employees allowed to operate the following equipment and is there documentation such as operator certification cards?

Motor Vehicles	Yes	No	N/A
Aerial Platform Lifts	Yes	No	N/A
Forklifts	Yes	No	N/A
Cranes	Yes	No	N/A
Other	Yes	No	N/A

Comments:

_____

_____

_____

_____

_____

4.0 SAFETY MEETINGS

4.1 Are safety meetings being held and documented on a regular basis?

Yes △ No △

N/A Comments:

_____

_____

_____

4.2 Describe safety meeting activity as to frequency, responsibility, topic selection and documentation.

_____

_____

_____

_____

_____

5.0 ACCIDENT/INCIDENT INVESTIGATIONS

5.1 Are all serious accident/incidents and near misses being investigated in a timely manner (within 48 hours)?

Yes ☐ No ☐

N/A Comments:

_____

_____

_____

_____

5.2 What are the current frequency rates for the preceding 3 months for this worksite?

	Month _____	_____	_____
First Aid	Cases _____	_____	_____
OSHA	Recordables	_____	_____
Lost Time	Accidents	_____	_____
Fatalities	_____	_____	_____

6.0 SAFETY AUDITS

6.1 Are job site safety audits being conducted jointly with the Site Safety Supervisor/Safety Representative and all recommendations of such audits completed in a timely manner?

Yes ☐ No ☐

N/A Comments:

_____

_____

_____

_____

6.2 Are job site safety audits conducted jointly with the client and all recommendations of such audits completed in a timely manner?

Yes ☐ No ☐

N/A Comments:

_____

_____

_____

_____

_____

7.0 GENERAL

7.1 Are all employees informed that they have the authority and duty to refuse to perform any job they think is unsafe and bring it to the attention of their Craft Foreman before work is continued?

Yes ☐ No ☐

N/A Comments:

_____

_____

_____

_____

_____

7.2 Have all OSHA required competent persons required for this site been identified? If yes, list below:

Yes ◺ No ◺ N/A

Employee Name	Competency
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

8.1 OVERALL EVALUATION

A. Number of applicable questions _____

B. Number of questions answered yes _____

Percent of Safety Compliance = (B/A)*100 _____

Comments:

_____

_____

_____

_____

_____

9.0 SIGNATURES

Safety Director _____ Date _____

Project Superintendent _____ Date _____

Construction Manager _____ Date _____

Company President _____ Date _____