PARIC Safety Manual

Department Safety

Last Updated 11/26/2024

OVERVIEW

PARIC Corporation is vitally interested in the safety and health of its employees and all people who come into contact with, or are affected by, PARIC's operations. PARIC Corporation, therefore, has developed this safety program to implement its safety policy and to enable all members of the project team to conduct their construction operations in a manner consistent with Federal, State and Local safety regulations.

It is required that all PARIC employees conduct their work activities in a manner consistent with the policies to the safety program. It is your responsibility as a member of PARIC's Project Team to enforce the requirements of the program and provide a safe working environment at all times. This manual primarily applies to jobsite locations, but where applicable applies to the office as well.

This "Safety Manual" is provided to aid you in the administration of the safety program. For questions concerning procedures or interpretation, contact PARIC's Safety Director.

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PRESIDENT LETTER

PARIC
EXPERIENCE. EXCELLENCE.

Nothing we do in the act of providing our services is more important than the preservation of life and limb. Helping take care of each other, our clients, subcontractors and vendors is paramount to the success of PARIC Corporation. We believe that operating and behaving safely is not proprietary to PARIC, and we are committed to significantly improving our industry in all areas, especially safety.

This commitment, this belief, is the cornerstone of the PARIC Corporation Safety Program.

Our culture provides a framework by which this commitment is encouraged, nurtured and reinforced. The risk of injury or incident exists in almost every aspect of the construction industry. Although our program outlines our policies and procedures, developing a strong, innate desire and dedication to safety is what will make all of us successful in this endeavor.

Please use this as a resource and guide; do not allow it to limit you in the pursuit of doing what is right and safe for anyone associated with our work.

Start each day focused on that pursuit. It can become all too easy to allow the pressures of our day-to-day activities to distract us. We must be disciplined about ensuring that everyone on our projects not only receives proper training but is also given the appropriate time to properly carry out their daily tasks. This is vitally important to maintaining the emotional and mental acuity to keep our workplaces safe.

Thank you for all you do to ensure that each one of us returns home safely.

Mike Rallo, Jr.
Chief Operating Officer

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President	Mike Rallo, Jr.	636-561-9500	N/A	N/A

PRINCIPALS OF SAFETY POLICY

It is PARIC Corporation's company policy to conduct all operations in a manner which will prevent injuries to persons and damage to, or loss of property.

It is our belief that incidents, which injure people, damage equipment, destroy materials, cause needless personal suffering, inconvenience and expense. We further believe that all incidents are preventable through the exercise of personal initiative to develop common sense precautions.

We will endeavor to maintain a safe and healthful place to work. We will provide safe working equipment, necessary personal protective equipment and in the event of injury, provide the best first aid and medical service available.

It is PARIC's objective to comply with all codes, standards and generally accepted safe practices as they apply to our operations.

To accomplish these efforts, the control of incidents shall be considered as an integral part of any operational activity and not as a separate program functioning independently of other activities. The same lines of responsibility will be followed for incident control functions that are presently utilized for other operational or production functions.

Managers and Superintendents at all levels will be held responsible and accountable for maintaining a maximum level of safety performance in all phases of incident control effort in the operations they direct.

The reduction of incidents and the related costs involved will permit us to be more competitive in our industry and will help us to safeguard the future of our jobs.

- PURPOSE

  A. The purpose of the PARIC Safety Program is to provide the PARIC Project Team an effective tool that will assist and enable the team to create a safe work place for all PARIC Associates. These safety guidelines will assist the PARIC Project Team in achieving the following goals of the Safety Program:

  B. Prevent jobsite incidents and injuries to employees.

  C. By providing every employee with a safe and healthful work place which is free of recognized hazards.

  D. By protecting the property and interests of our Customers, the Company, and other parties.

  E. By elevating employee safety awareness and morale.

  F. Proper planning and adherence to sound engineering practices.

  G. Establishing and enforcing effective work rules, programs and procedures which assure worker safety.

  H. Insuring that employees are equipped with the appropriate personal protective equipment.

I. Provide employees with the proper tools for their work operations.

J. Training employees in the recognition and avoidance of unsafe actions and conditions in the work place.

K. Instilling in Company employees that incident prevention is the responsibility of every employee and that active employee participation in the Safety Program is essential to the program's success.

L. Reduce insurance and other incident related costs.

- PRINCIPLES OF INCIDENT PREVENTION

A. Every employee is responsible for accident prevention in the performance of his/her job. The principles of accident prevention apply to all Company work activities regardless of location. Any employee has the right and authority to stop the work on any occasion when a work activity is being improperly performed in a manner that exposes a fellow worker to the real potential of a serious injury or death.

1. Employees shall receive Stop Work Authority training before their initial assignment. The training will be documented including the employee name, the dates of training and subject matter.

a. When an unsafe condition is identified, the Stop Work Intervention will be initiated and closed by supervisor in a positive manner, notifying all affected personnel of the Stop Work issue, correct the issue and resume work when safe to do so.

b. No work will resume until all Stop Work issues and concerns have been adequately addressed, documented and reviewed by supervisor.

c. Any form of retribution or intimidation directed at any individual or PARIC for exercising their right to issue a Stop Work authority will not be tolerated by the host nor by PARIC.

d. All Stop Work Interventions shall be documented for lessons learned and corrective measures to be put into place.

e. Stop Work reports shall be reviewed by supervision order to measure participation, determine quality of interventions and follow-up, trend common issues, identify opportunities for improvement, and facilitate sharing of learning.

f. It is the desired outcome of any Stop Work Intervention that the identified safety concern(s) have been addressed to the satisfaction of all involved persons prior to the resumption of work. Most issues can be adequately resolved in a timely manner at the job site, occasionally additional investigation and corrective actions may be required to identify and address root causes.

B. Work must be planned to eliminate the possibility of personal injury, property damage and the loss of productivity.

C. A system of inspections will be utilized for the prompt detection and correction of unsafe actions and conditions in the work place.

D. Assure all incidents, which caused or could have caused personal injury and/or property damage are promptly investigated in order to uncover causes and prevent similar recurrences.

E. Establish a program to develop and maintain an attitude of safety awareness among all levels of employees through meaningful employee training and direct employee participation in the safety program.

F. Establish a program of accountability whereby every employee, regardless of status, is responsible for their actions and the actions of the employees they supervise.

SAFETY DUTIES AND RESPONSIBILITIES

- SAFETY DUTIES AND RESPONSIBILITIES

  TO FURTHER THESE GOALS, THE FOLLOWING ASSIGNMENTS OF RESPONSIBILITY ARE MADE:

- MANAGEMENT (Project Management)

  A. Establish rules and programs designed to promote safety and make known to all employees the established rules and programs.

  B. Provide all supervisors with copies of appropriate rules and regulations.

  C. Make necessary training available for employees to perform their tasks safely.

  D. Impress upon all, the responsibility and accountability of each individual to maintain a safe workplace.

  E. Investigate all incidents and ensure the correction of hazards.

  F. Discipline any employee disregarding this policy.

  G. Require all subcontractors, as a matter of contract and all material suppliers, through purchase order terms to follow safety rules.

  H. Encourage all prime contractors to work safely.

  I. Appoint a company employee with enforcement authority over safety matters.

  J. Conduct safety inspections of Company's jobsites you are responsible for at least weekly, maintain records and continually monitor the program for effectiveness.

- PROJECT SUPERINTENDENTS

  A. Plan production so that work will be done in a safe manner.

  B. Oversee safety on the jobsite and enforce PARIC safety policies.

  C. Make sure proper safety materials and protective devices are available and used, and equipment is in safe working order.

  D. Instruct foremen in safety requirements.

  E. Conduct incident investigations, supervise correction of unsafe practices and correct safety hazards.

  F. Conduct jobsite safety meetings and provide employees with proper instruction on safety requirements. Utilize Field 360 or intranet for forms.

G. Require conformance to safety standards from subcontractors.

H. Notify Company office of safety violations.

I. Provide for the protection of the public from Company operations.

J. Attempt to ensure safe performance by others present on the site, including owner and architect/engineer representatives, the general public, visitors and the employees of other contractors.

K. At a minimum, attend OSHA 30-Hour training and First-Aid training. Attend other safety training as required by the Company. Maintain certification of required OSHA 30-Hour and First-Aid training.

L. The Company designates the project Superintendent or Supervisor as the competent safety person on the project.

M. Conduct Daily safety surveys of each project

- JOB FOREMEN

A. Carry out safety programs at the work level.

B. Be aware of safety requirements and safe working practices.

C. Plan work activities to comply with safe working practices.

D. Instruct new employees and existing employees performing new tasks on safe working practices.

E. Install and maintain devices to protect the public.

F. Make sure protective equipment is available and used.

G. Make sure work is performed in a safe manner and no unsafe conditions or equipment are present.

H. Correct hazards, including unsafe acts and conditions, which are within the scope of your position.

I. Secure prompt medical attention for any injured employees. Contact Safety Director.

J. Report Incidents including Near Hits and safety violations

K. At a minimum, attend OSHA 10-Hour training and First-Aid training. Attend other safety training as required by the Company. Maintain certification of required OSHA 10-Hour and First-Aid training.

L. Conduct pre-task Safety assessments prior to beginning work and at change of task.

- WORKERS

  A. Work safely in such a manner as to ensure your own safety as well as that of coworkers and others.

  B. Request help when unsure about how to perform any task safely.

  C. Correct unsafe acts or conditions within the scope of the immediate work.

  D. Report any uncorrected unsafe acts or conditions to the appropriate supervisor.

  E. Report for work in good mental and physical condition to safely carry out assigned duties.

  F. Avail yourself of Company and industry sponsored safety programs.

  G. Use and maintain all safety devices provided.

  H. Maintain and properly use all tools under your control.

  I. Follow all safety rules.

  J. Provide fellow employees help with safety requirements.

  K. Attend safety training as required by the Company.

- ALL PERSONNEL

  A. Strive to make all operations safe.

  B. Maintain mental and physical health conducive to working safely.

  C. Keep all work areas clean and free of debris.

  D. Assess result of your actions on the entire work place. Work will not be performed in ways that cause hazards for others.

  E. Before leaving work, replace or repair safety precaution signs removed or altered.

  F. Unsafe conditions will not be left to endanger others.

  G. Abide by the safety rules and regulations on every construction site.

  H. Work in strict conformance with federal, state and local regulations.

- SUBCONTRACTORS AND SUPPLIERS

  A. "4.22. SAFETY: Subcontractor shall comply with all Federal, State and Local Laws governing safety, as well as Contractor's Safety Manual, which is available at http://www.paric.com and incorporated

herein by reference. Contractor utilizes a web based safety management system for all parties involved in the project. The web based safety management system will therefore be the only recognized method of transmittal for formal safety documentation (correspondence, safety issue rectification, instructions, PTP, SSSP etc.).
Subcontractors shall, and shall ensure that each of its personnel and the personnel of any sub-tiers of subcontractors for which Subcontractor is responsible (collectively, Subcontractor Personnel), use the web based safety management system and comply with the requirements of this Addendum and any related directions from Contractor."

B. Abide by all the safety rules on site.

C. Notify all other contractors when their activities could affect the health or safety of other company employees.

D. Inform PARIC Corporation of all injuries to workers.

E. Report to PARIC Corporation any unsafe conditions that come to your attention.

F. ARCHITECTS, ENGINEERS, OWNERS AND VISITORS WILL BE REQUESTED TO:

G. Abide by all safety rules.

H. Inform construction site superintendent before entering a construction site.

I. Check in with the jobsite superintendent so personal protective equipment may be provided, Such as hard hats, eye protection and respirators, if necessary.

DISCIPLINARY ACTION PROGRAM

PARIC is serious about employee safety and work place conduct. The rules, regulations and procedures of the Company as contained in the Safety Manual, the rules and regulations of the construction owners and regulations of the Occupational Safety and Health Administration (OSHA) are intended to assure employee safety and to protect the interests of all involved parties, therefore the following minimum disciplinary actions may be taken against any employee (including supervisors) for infractions of any safety rule, regulation or procedure.
Utilize Field 360 or intranet for forms.

Written Reprimand (0-2 days off without pay)
Probation (3-5 days off without pay)
Grounds for Termination of Employment*
* At the discretion of PARIC Management

This citation is based on the severity of the incident, NOT the number of occurrences. For example, immediate termination can result from any infraction if in the sole opinion of the Company, the employee has exhibited a blatant disregard for the safety standards and policies of PARIC Corporation or its customer or has acted in a manner which jeopardizes the safety or health of fellow employees or others working on the site. Infractions will remain on employee record for a 2-year time frame from date of incident and will be subject to subsequent action.

GENERAL RULES

A. The use of any machinery, tool, material, or equipment that is not in compliance with this manual or the Occupational Safety and Health Act is prohibited. Any machine, tool, equipment, or material, which has been determined to be unsafe, needs to be identified by tagging and/or by locking the controls to render it inoperable or remove it from the work place.

B. Employees must be trained in the safe operation of tools they are required to use in the performance of their work. Only those employees qualified by experience or training are allowed to operate equipment and machinery.

C. The project supervisor (General Superintendent, Superintendent, General Foreman, or Foreman) and/or his designees must instruct each employee in the recognition and avoidance of unsafe acts and conditions and the regulations applicable to their work environment in order to control and/or eliminate any hazards or other exposure to illness or injury.

1. Specific safety instructions will be provided in the recognition of the hazards, potential harm, safe handling and use, personal protective measures, personal hygiene, avoidance of injury, special first aid measures, special safety work procedures and use of emergency equipment for employees such as for the following:

    a. Poisons, caustics and other harmful substances, plants or animals;
    b. Flammable liquids, gases, or toxic materials;
    c. Entry into confined spaces;
    d. Work on roofs;
    e. Crane-suspended personnel hoists (man baskets);
    f. Powered equipment;
    g. Excavation and Trenching;
    h. Respirators;
    i. Scaffolding
    j. Jobsite Evacuation / Emergency Procedures

D. Project Supervisors will bring any work or procedure that is recognized as dangerous or potentially dangerous into compliance with requirements of this manual.

E. Project Supervisors are responsible for requiring the use of all necessary personal protective equipment whenever exposure to hazards warrants its use.

F. The frequent and regular inspection of all tools, materials, equipment, and machines should be performed as directed by this manual. Whenever there are occurrences that could result in equipment damage, all involved tools, materials, and equipment need to be thoroughly checked.

G. All Incidents that result or could have resulted in personal injury or equipment damage are to be investigated and reported in writing to the Company Safety Director on the appropriate form, by the end of same day of accident, for the basis of future accident prevention.

H. Employee safety training needs to be conducted as required by this manual. New worker orientation should be conducted for all employees on their first day at the work site. Safety meetings must be held at least weekly with all employees. All project supervisors are in charge

of, attend and participate in these and other safety meetings.

- GOVERNMENTAL SAFETY COMPLIANCE INSPECTIONS

A. Safety compliance inspections of Company construction sites and other work sites can be conducted by a number of governmental agencies depending on the location, funding, work operations, and other jurisdictional aspects. Some of these agencies are:

1. Occupational Safety and Health Administration (OSHA), federal or state agencies.

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

b. Supervisors
   - Shall ensure that all job related injuries and illness are reported promptly to the PARIC Safety Manager.

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

Procedure

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

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

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

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

Posting

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

- The annual summary must be posted no later than February 1st of the year following the year covered by the records and the posting kept in place until April 30th.
- PARIC must save the OSHA 300 Log, the privacy case list (if one exists), the annual summary and the OSHA 301 Incident Report forms for five (5) years following the end of the calendar year that these records cover.

2. Mine Safety and Health Administration (MSHA).

3. Army Corps of Engineers, U.S. Coast Guard, Environmental Protection Agency (EPA), Department of Energy (DOE) or other federal agencies having enforcement responsibility on a particular project.

4. Any local or state agency having jurisdiction over the enforcement of work safety and health standards.

B. Whenever a compliance officer of a governmental safety inspection agency comes to a work site, the manager and supervisors must know and understand their rights, the rights of the Company, the rights of employees and the rights of the compliance officer under the Occupational Safety and Health Act. The following guidelines should be adhered to in the event of an inspection.

1. Immediately after identification and statement of purpose, and while preparations are being made for the "Pre-inspection Conference", ask the compliance officer to wait a few moments while you telephone the Company Safety Director. If he is not in the office, leave a message for him to call immediately and ask to speak with the Company President or Vice President and apprise him of the situation. If the Company Safety Director is available to attend the inspection ask the compliance officer to wait for his arrival at the project prior to conducting the inspection. As a courtesy, the compliance officer will usually delay the start of the inspection for forty-five minutes to one hour to allow for the arrival of a Company representative.

2. All supervisors and managers dealing with a compliance officer will act in a businesslike manner at all times. Always be polite, respectful, and cooperative. To act in a less suitable manner can cause the Company to forfeit precious rights during the inspection and receive the maximum penalties and fines for violations.

3. All dealings with a compliance officer must be recorded. Take notes of all conversations and record your actions and the actions of the compliance officer. This information may prove useful in having violations set aside following the inspection. Ensure photos are taken to give detail of alleged hazard(s).

4. Upon the arrival of a compliance officer, immediately notify the Safety Director and Project Manager. In the absence of the Safety or Project Manager, notify one of the General Superintendents and ask him to meet with the compliance officer. Escort the compliance officer directly to the construction management field office without allowing the compliance officer to unnecessarily enter Company work areas. Under no circumstances should an employee refuse a compliance officer's right-of-entry to the work site unless directed to do so by a Company officer or the Safety Director.

5. The compliance officer should at this time present credentials of identification to the contract manager or the craft project supervisor, and state the nature of the visit. If the compliance officer fails to do this, it is a violation of federal regulations and may provide the Company with grounds to have citations set aside. The credentials should be reviewed for authenticity but should not be pondered over too long since this may be considered as a tactic to delay the inspection. Be sure to request the compliance officer's business card and the cards of anyone accompanying him. All cards should be placed with your notes.

6. The compliance officer must state the reason for his/her visit. One of the following should be given.

7. General scheduled inspection.

8. Complaint inspection

9. Accident investigation

10. Follow-up inspection for previous citations

11. Inspection of or for specific "targeted" hazards

12. If the inspection resulted from a complaint, request a written copy of the complaint from the compliance officer and keep it with your notes. Inquire as to the source of the complaint. The compliance officer may tell you if it came from within the company or from an outside party; however, he is prohibited from releasing the name(s) of the person(s) who filed the complaint; therefore, it is improper to ask for such names.

13. Prior to the actual inspection, the compliance officer will explain about the "Pre-inspection Conference" and whom he wishes to speak with prior to a "walk-through inspection". Typically, he will wish to speak with the contract manager (or his designee), the Safety Director, craft employee representatives (usually the stewards), and representatives of the subcontractors.

    a. Inspections originating due to any of the reasons stated in paragraph 2.2.6 except general scheduled inspection have limitations. Generally the compliance officer shall be escorted directly to the area(s) in question. He may observe and comment on conditions along the way, but not seek out other parts of the work site that are not on the way to the specific item(s) he originally addressed.

    b. The compliance officer feels he has observed enough evidence on his way to the specific area(s) of his original inspection to warrant a general compliance inspection (to be conducted job wide), he should state this and then return to the site trailer to conduct another pre-inspection conference. This is to insure that all contractors on site who allowed him admission on the basis of his original declaration will still allow him admission into their work area without proving probable cause (securing a search warrant). The manager or project supervisor should immediately consult the Company Safety Director should this occur.

    c. If the Company's work site is in an existing facility or plant, the manager should notify the

construction owner's designated representative so that they may be informed of the compliance officer's presence and may decide on their course of action in response to an inspection which might include their work operations.

14. After the pre-inspection conference, the compliance officer should have narrowed the "inspection party" to a manageable number, by direction or consensus. If he has not, suggest he do so; a large inspection party is less productive and more disruptive. A management member must accompany the inspector during the inspection. The Company Safety Director should also be present during the inspection, if time permits for his arrival at the work site.

15. During the course of the inspection, listen to the compliance officer's comments and/or criticisms. take detailed notes. If a camera is available, photograph the same items the compliance officer photographs, from the same angle, and, if useful, from another angle. Note your actions also. It is not necessary to be secretive about your actions to document the inspections proceedings. If the construction owner prohibits the use of cameras on its' property seek permission to take photographs during the inspection.

16. If violations of safety standards are noted, take immediate corrective action while the compliance officer is present, if possible.

17. Feel free to discuss the alleged violations with the compliance officer, but do not argue, no matter how unreasonable you may think the alleged violation.

18. The compliance officer has the right to interview any employee privately, if he or the employee(s) requests such a meeting, however, the compliance officer does not have the right to interrupt the progress of work operations. If necessary, schedule a time and location for conducting interviews.

19. Employees have the right and responsibility to consult with or inform management at any time during the course of the inspection.

20. The inspection will end with a closing conference, at which time the compliance officer will discuss any alleged violations and advise of any citations to be issued. He will ask how long it will take to correct noted (alleged) violations. Give the compliance officer reasonable estimates, or inform him that it has already been corrected.

21. Inform the compliance officer that if any citations are to be issued to PARIC they should be sent to the appropriate Company officer, addressed to:
    Safety Director PARIC Corporation 77 Westport Plaza Suite 250, St. Louis, MO 63146

22. Following the inspection, all notes and photographs taken during the inspection should be assembled and maintained as documentation for potential defense action.

23. If a jobsite is kept within the guidelines contained within this manual, no citations should be issued.

OSHA CITATION AVOIDANCE

The Occupational Safety and Health Act of 1972 established the Occupational Safety and Health Administration (OSHA) for the purpose of creating and enforcing employee safety and health standards. OSHA's enforcement directive grants the agency's compliance officers the authority to enter an employer's work place and issue citations and levy fines against the employer for violations of applicable standards contained in the OSHA Act. Applicable standards for construction activities include those standards contained in 29 CFR 1926 and applicable portions of 29 CFR 1910.

Citations for violations of the Act and associated fines are civil penalties under federal law as opposed to criminal; consequently employers are required to prove themselves innocent of a violation as opposed to OSHA having to prove the employer's guilt. Employees are not issued citations or fines because OSHA leaves disciplinary action up to the employer. Working to avoid citations and fines from OSHA is the responsibility of every project team and craft supervisor and the Safety Director. Let's take a look at the most common categories of violations and ways to avoid them.

- PAPER WORK VIOLATIONS

Paper work violations are the easiest citations for OSHA to issue because if the paper work is not at the work site as required, the employer is in violation of the Act. The issuance of citations and fines for missing written programs such as Assured Grounding, Hazard Communication, missing material safety data sheets, posters, and training records are common and some of the easiest to avoid. Copies of all written programs are contained in the Safety Manual and a copy of the manual should be at all Company work sites. Poster packets, material safety data sheets and chemical lists are available from the Safety Director.

- UNSAFE ACTIONS AND CONDITIONS – THE EMPLOYER

Citations for violations of the OSHA Act involving unsafe work practices (actions) and unsafe conditions on the part of the employer are common and carry higher fines than paper work violations due to the greater potential for employee injury. Avoidance of citations for unsafe actions and the conditions can be managed by following the safe work practices and procedures prescribed in the Safety Manual, conducting employee training in the avoidance of unsafe actions and conditions, and taking immediate documented steps to correct unsafe actions and conditions. The real key to this is documentation. "If you haven't written it down, it's not finished". Documentation includes:

A. Having published safe work procedures and employee safety and work rules.

B. Conducting frequent, documented inspections of work areas, documenting unsafe conditions and corrective actions on daily inspection reports.

C. Conducting and documenting employee orientation sessions and safety meetings including the subject matter and each employee's signature.

D. Having a published employee disciplinary action plan and documenting its use.

If all of these steps are followed the Company can avoid receiving citations and fines for unsafe actions and conditions created by our employees. In the event a citation is issued the company has grounds to have the citation deleted using an "Uncontrollable Employee Action Defense".

- MULTI-EMPLOYER WORK PLACE CITATIONS

OSHA can also issue citations and levy fines against an employer for safety hazards created by other employers. These are called multi-employer work place citations and this type of citation can be issued to the Company if the Company is responsible for exposing its employees to hazards created by another employer. This type of citation is common in construction because construction sites usually have more than one employer. Defending the Company against multi-employer citations is easy if the proper steps are taken...even if the employer responsible for the hazard does not correct it. There are four steps that the Company must take in order to defend itself if a multi-employer worksite citation is issued.

The Company must prove that it did not create the hazard.
The Company must prove that it does not have the authority or ability to correct the hazard.
The Company must have documented proof that it attempted to persuade the responsible employer to correct the hazard.
The Company must have documented proof that it took steps to notify its employees of and protect employees from the hazard - short of leaving the work place.

Steps A and B are the easiest to prove while steps C take an effort on the part of the Managers and Project Supervision to complete.

The most reliable form of documentation for step c is letters or memorandums written to the responsible subcontractor asking that the specific hazards be corrected, or documenting actions taken to require the subcontractor to correct the safety violation in the Supervisors Daily Safety Inspection or by the issuance of safety citations. Another acceptable form of documentation is job meeting minutes, which reference the hazard, the responsible employer, and a request for corrective action, however letters are the best form of documentation.

The best documentation for step d - Informing employees of the hazard and giving instruction in avoidance - is safety meeting sign-off sheets. Completed sheets should have the employee's signatures. There is room to place comments about the warning, and steps given to avoid the hazard on the sign-off sheet. If more room is needed, attaching an additional piece of paper is a recommended and acceptable practice.

- EMERGENCY MEDICAL SERVICES AND FIRST AID PROCEDURES

1. "First Aid" defined:

First aid is the immediate or temporary care given to a person who has suddenly taken ill or who has been injured. Everyone trained in first aid/CPR is expected to help in the event of an emergency.

A. General - The Paric Project Team (PPT) will ensure that prompt emergency medical services are readily available for all company employees prior to the start of any job.

1. Professional Medical Services
2. It is the responsibility of the site manager to ensure that first aid kits are provided and maintained.
3. All employees are responsible for using first aid materials in a safe and responsible manner.
4. The HSE Manager is responsible for corresponding with the Red Cross or an equivalent to keep employee training levels current.

The Safety Director will prearrange for the emergency medical treatment of its employees with hospitals or clinics located near the job site.

B. Emergency Transportation - The PPT will ensure that proper equipment is available for the transport of injured employees to medical facilities.

C. Job sites will be provided with a means of communication with emergency medical services for the transport of seriously injured employees.

D. The PPT will arrange, when necessary, for the transport of employees who have received minor injuries, which require professional medical treatment.

E. The phone numbers of doctors, hospitals, and ambulance services must be posted on all job sites. Emergency Phone Numbers Poster will be prepared by the PPT with assistance from the Safety Director.

F. First aid supplies will be provided on each jobsite for the use of employees. First aid supplies will be stored in waterproof containers that are conspicuously marked and located so that they are easily recognized and readily accessible for use. First aid supplies need to be inspected at regular intervals in order to replace missing and unserviceable items.

G. At all Paric job sites the PPT will ensure that at least one employee on-site is certified to perform first aid

2. Blood Borne Pathogens

Employees involved in the care of the injured should be aware of possible exposure to Blood borne Pathogens (pathogenic microorganisms that are present in human blood and can cause disease in humans). To minimize employee occupational exposure to microorganisms that can be present in

human bodily fluids and cause diseases, such as HIV and Hepatitis B. The only remotely foreseeable exposure to our employees would be when acting as a First Responder.

These work rules applies to all employees who choose to act in that capacity.

A. All bodily fluids will be treated as if they could contain blood and are infectious.

B. Universal controls will be used when exposure to bodily fluids is possible.

C. If contact with bodily fluids should occur, employees will be offered, at no cost, Hepatitis B vaccine treatment and screening.

D. All waste materials from cleanup activities shall be disposed of as biohazards.

3. Automatic External Defibrillators (AED)

A. The use of AED's during sudden cardiac arrest has proven to help save lives repeatedly.

B. All Paric projects will have access to an AED for use during an emergency.

C. Employee Training

The acquisition of an AED is coupled with a duty to ensure that expected defibrillator users receive proper training from a recognized, reputable source such as the American Red Cross, American Heart Association or suitable alternative. The training should include the use of AEDs and cardiopulmonary resuscitation.

AED's require a compliance review for specific State Laws. AED's also require the following:

1. Notification and coordination with State/local EMS provider

2. Medical protocols approved by a physician

3. Ensure that the AED is maintained and tested according to the manufacturer's operational guidelines.

4. Any person who renders Emergency care or treatment on a person in cardiac arrest by using a AED shall activate the emergency medical services as soon as possible.

- DRINKING WATER

A. General - the project will be provided with an adequate supply of potable water for drinking purposes.

B. Portable Containers

a. Portable containers for drinking water must be clearly marked as to the nature of their contents. All drinking water containers must have tight-fitting lids and be equipped with a tap through which the water is dispensed.

b. Employees should not open drinking water containers, except for those employees assigned the task of cleaning and filling the containers.

- DRINKING CUPS

A. Single service drinking cups will be provided when water containers are issued for use. All unused cups must be stored in a sanitary container. Cups are to be used one time only and then discarded into a provided refuse container.

B. The use of common drinking cups is prohibited.

- TOILET FACILITIES

A. An adequate number of toilets must be provided for employees at all job sites in accordance with OSHA regulations (CFR 29, 1926.51, Table D-1) except for sites considered to be under temporary field conditions. Under temporary field conditions, make sure that at least one toilet facility is available.

B. All toilet facilities should be serviced and cleaned at regular intervals in order to ensure they are maintained in a sanitary condition which minimizes the possibility of disease, odor, and pest harborage.

C. The disposal of wastes should not cause ground contamination, as well as comply with local sanitary ordinances.

- WASHING FACILITIES

A. Washing facilities are to be made available to employees engaged in work operations, which use, produce, or involve materials containing substances considered to be harmful contaminants.

B. Washing facilities must be in close proximity to the work area and equipped as to enable employees to remove contaminants from their person.

- HOUSEKEEPING

A. General - Project supervisors will be responsible for ensuring the employees in their charge maintain a standard of cleanliness and organization in work, fabrication and storage areas that eliminates hazardous conditions and provides a safe and healthy working environment.

B. Overall Cleanliness

1. All work areas, walkways, stairways, scaffolds, areas in and around buildings and structures, and material storage areas need to be kept clear of scrap materials and debris.

2. Combustible scrap and debris will be removed and properly disposed of at regular intervals to prevent the possibility of fire.

3. Approved containers must be provided for the segregation of waste materials. Containers for

garbage, flammable wastes and hazardous wastes must be equipped with lids. The contents of such containers must be disposed of at regular intervals to eliminate possible fire and health hazards.

4. Spillage of oil, solvents, chemicals and other such substances must be cleaned up immediately. (Refer to Section 8).

- EQUIPMENT AND TOOLS

A. Walkways, doorways, scaffolds and stairways must be kept clear of tripping and overhead hazards caused by the routing of welding cables, extension cords, air and welding gas hoses. Tools and equipment should not be located as to block access ways and traffic areas.

B. Tools and equipment should only be stored in designated areas. Storage areas, such as trailers, tool cribs and gang boxes must be kept neat and orderly.

- MATERIAL STORAGE AREAS

A. Materials should only be stored in designated areas, which are kept neat and orderly.

B. Materials in storage should be neatly stored and stacked in a safe manner.

C. Adequate room should be provided between storage areas for the safe movement of workers and equipment during material handling operations.

HEAT ILLNESS PREVENTION

This Heat Illness Prevention Policy has been developed to provide Employees with the training and equipment necessary to protect them from heat related exposures and illnesses.

- ROLES & RESPONSIBILITIES

  A. Project Supervision

  B. Provide Employees with training on heat illness prevention.

  C. Ensure that all elements of this procedure are implemented on the Project Site.

  D. General Foreman & Foreman

  E. Know and be able to recognize the signs and symptoms of heat illness.

  F. Monitor crews for signs and symptoms of heat illness.

  G. Make adjustments necessary to work tasks based upon a Craft Employee's physical or environmental abilities.
  H. Observe new Craft Employees to ensure appropriate acclimatization in high heat environments.

- PROCEDURES

  A. Water Provisions

     1. Paric will provide Employees with sufficient amounts of water in the form of the following:

        a. A water location should include methods to distribute water such as a water filled sanitary container with sealed and disposable water cups or disposable water bottles, and a trash receptacle.

  B. Access to Shade/Cooling Stations

     1. Paric shall provide and/or designate area(s) to accommodate Employees.

        a. Shade provisions will be available on the Project Site.

        b. The shade should be located as close to the work area(s) as practical.

        c. Access to shade areas shall be unobstructed.

        d. Break trailers and Project Offices can be used for shade stations and all preventative cool down rest and recovery periods.

  C. Monitoring of Weather

a. Project Supervision will monitor temperatures to determine if additional engineering or administrative controls will need to be incorporated on the Project Site.

D. High Heat Procedures

1. When Project Site temperatures equal or exceed 95 degrees Fahrenheit heat index, the following controls methods should be considered for implementation by Project Supervision:

a. Administrative Controls

I. Adjustment of work schedules, such as earlier shift starting and stopping times.

II. Rotation of Craft Employees to allow for increased cool down periods.

III. Increase the amount or frequency of break/cool down periods throughout the work shift.

IV. Ensure that work crews have an adequate means of communication with their direct supervision.

V. Advise Craft Employee supervisors to review high heat procedures in Task Hazard Analysis meetings.

VI. Review emergency response plans in the event of a heat illness emergency.

VII. Review the potential increase in heat exposure associated with tasks that require additional PPE, hot work activities or physically strenuous activities and make appropriate adjustments.

b. Engineering Controls

I. Increased ventilation in work areas by means such as fans, cooling equipment, etc.

II. Refer to Procedures section B for shade provisions.

III. Provide when available personal cooling devices such as cooling towels, cooling vests, hardhat liners, neckbands, etc.

E. Acclimatization

1. Generally, the body acclimates during the first 5 days of working in increased heat.

2. Employees becoming acclimated should reduce their workloads, while increasing rest periods and water intake, appropriately.

F. TRAINING

1. Paric Employees who are potentially exposed to heat stress inducing conditions must receive training to include the following topics:

a. Physiological aspects of heat stress.

b. Causes of heat related illness.

c. Symptoms of heat stress.

d. Importance of fluid intake.

e. Personal consumption of alcohol, caffeinated products, prescription medications, or eating habits and how they can effect heat illness.

f. Work/rest periods.

g. Control methods.

SAFETY INSPECTIONS

- PURPOSE

  OSHA regulation 29CFR 1926.20(b)(2) requires construction employers to provide for frequent and regular inspection of their job sites, material and equipment. Inspections will be conducted daily by the Project Superintendent, or by the designated, competent representative. Inspections will be conducted weekly by Project Managers and Engineers for their project, and sent out to the distribution list. Periodic, at least monthly, safety surveys will be conducted by the Safety Director/Manager. These inspections should be completed on the BIM 360 Safety Survey.

  Safety Saturations will be done quarterly by selected Superintendents, Project Managers, and Project Engineers. These selected people are required to visit certain job sites and conduct a walk-thru and survey on site.

- GENERAL

  Job site and work area safety inspections are essential to identifying hazards in the work environment, which pose risks to the health and wellbeing of employees and others. The following procedure outlines the responsibilities of supervision and the Safety Director/Manager for conducting inspections and instituting corrective actions.

- INSPECTION RESPONSIBILITIES

  Conducting safety inspections is a shared responsibility among all Paric employees, as well as Supervision and the Safety Director/Manager.

  A. Supervision

     1. Supervision must continuously monitor their crew's work areas, activities, tools, materials and equipment for unsafe actions and conditions, which can threaten employee safety. When such action(s) or condition(s) are identified, Supervision will take prompt action to assure worker safety up to and including stopping work.

        a. Superintendents will conduct written daily safety surveys documented in BIM

        b. Project Engineers will conduct weekly written safety surveys documented in BIM

        c. Project Managers will conduct Bi-weekly safety survey documented in BIM in addition to reviewing each team members safety survey for content

     2. Supervision will be responsible for the following activities:

        a. Taking the steps necessary to correct unsafe actions on the part of their workers up to and including the enforcement of safety rules and use of disciplinary action.

        b. Tagging and removing from service any of the tools and equipment, which are in need of repair and preventing tagged items from being returned to service until repaired.

c. Ordering corrective action for unsafe conditions created by the crew.

d. Immediately reporting unsafe actions and conditions on the part of others, which affect the crew's safety to his Supervisor, Manager, or the Safety Director/Manager and re-reporting such incidents until the crew's safety is assured.

e. Supervisors must conduct daily walk-throughs of all work and material storage areas in order to identify unsafe actions and conditions which can affect the safety and well-being of employee's under their direction.

f. Document on the Superintendents Daily Safety Survey Report (Utilize Field 360) any unsafe actions and conditions which have been identified, corrected, and/or reported to others for corrective action.

g. Notify Safety Director/Manager regarding multi-employer violations.

h. Contact the Safety Director/Manager for advice and safety information.

3. Safety Director/Safety Manager

The Safety Director/Manager will periodically, at least monthly, conduct formal, documented jobsite inspections. The frequency of inspections will be dependent on the size and duration of the job and the work operations being performed. Such inspections should cover all company work, fabrication, and storage areas, and areas which company employees may have reasons to enter while accessing their work areas and the jobs safety documentation and programs. The inspections may be conducted independently or in conjunction with Project Supervision.

a. The Safety Director/Manager will use the standardized Safety Survey Report (Utilize Field 360) and/or any other materials deemed essential to perform and document a thorough inspection.

b. Following the inspection, the Safety Director/Manager will meet with the supervisor. Copies of the inspection results should be distributed at this time and any safety recommendations discussed. Supervision will be responsible for ensuring all necessary corrective actions are performed and documented in a timely manner.

c. Supervision, upon the request of the Safety Director/Manager, should assist in the inspection in order to provide information concerning work areas and work operations, and to direct the elimination of unsafe actions and conditions, which can be immediately addressed during the course of the inspection.

d. Jobsite inspection records, recommendations, corrective action reports and letters of request sent to Supervision for the elimination of unsafe actions and conditions should be maintained on file by the Safety Director and at location of each job-site by Supervision.

C. Project Documentation

All job site generated safety inspection documentation (e.g. Superintendents Daily Safety Survey, Inspection records, recommendations, corrective action reports, copies of Safety Director generated information, and letters of request sent to Supervision for the elimination of unsafe actions and conditions) is accessed through Autodesk BIM 360.

INCIDENT REPORTING

- GENERAL RULES

All incidents, no matter how minor, must be reported IMMEDIATELY to the Project Superintendent. Superintendents are required to notify Project Manager and Safety Director accordingly.

A. Employees are to immediately report to their supervisor any incident involving themselves, fellow employees and/or the Company's property, tools, equipment or subcontractor's employees, property, tools and equipment.

a. If media requests information regarding an incident, The Project Manager shall immediately notify the President, or the Chairman, and/or their designated representatives and they will notify others accordingly.

b. Do not make any statements to the media.

B. Project Supervisor should immediately notify Project Manager and Safety Director of any incident which:

a. Involves a fatality.

b. Involves the injury of one or more employees.

c. Involves a lost-time injury.

d. Results in personal injury requiring medical treatment, including on-site first aid.

e. Causes damage to company property.

f. Causes injury to a third party (persons or property outside the company).

g. Causes injury or damage, which can be contributed to or by a defect, failure, or adverse property of a commercial product or device (i.e. power tools, equipment, safety devices, scaffolding, chemicals, etc.).

h. Involves a company owned or leased vehicle and any incident which involves a personal vehicle being used on company business.

i. A near hit is an unplanned event that did not result in injury, illness or damage – but had the potential to do so. Other familiar terms for these events is a "close call", or in the case of moving objects, "near collision".

- REPORTING, ANALYSIS, AND PREVENTION:

A. A Near Hit reporting system includes both mandatory (for incidents with high loss potential) and voluntary, non-punitive reporting by witnesses. A key to any near hit report is the "lesson

learned". Near hit reporters are in a position to describe what they observed about the event, and the factors that prevented a loss from occurring.

B. The events that caused the near hit are subjected to investigation to identify the defect in the system that resulted in the error and factors that may either amplify or improve the result.

C. To prevent the near hit from happening again, the organization must institute teamwork training, feedback on performance and a commitment to investigating and analyzing the occurrence.

D. Project superintendent shall conduct incident investigations and prepare all written incident investigation forms.

E. Project superintendent shall submit written incident investigation forms to the Safety Director by the end of that days shift, on date of incident. This report can be emailed upon completion.

a. **Incidents involving an injury of a Paric Employee** ('Paric Employee Injury First Aid Investigation Report' and 'Decline Medical Attention Report'– Utilize Field 360) - Any injury, including first aid cases, no matter how minor, must be reported to Paric's Safety Director immediately. After hours or on weekends you can contact the Safety Director by cell phone. If for some reason you can't reach the Safety Director, contact the Safety Manager. If neither of those are available, contact the General Superintendent(s). This report will provide the information needed to properly determine the category of the incident and whether or not it is a recordable accident. Incidents involving a fatality, amputation, loss of an eye, or hospitalization of one or more employees, contact Safety Director immediately. A separate report must be completed for each victim if more than one person is injured.

b. **Incidents involving an injury of a Subcontractor's Employee** – Utilize Field 360. Complete a Subcontractor Injury First Aid Investigation Report, notify Safety Director of the incident that day, request a copy of the subcontractor's injury report (OSHA 301 or State equivalent) is received. Forward these reports to Safety Director no later than 24 hours after the incident.

c. **Incidents involving persons NOT employed by Paric or its subcontractors**- Contact the Safety Department with the following information: description of the incident, date/time of incident, authorities notified (police, fire, etc.). Include report numbers where applicable.

d. **Incidents involving equipment or material failure on the job site**- Contact the General Superintendent and Safety Director.

e. **Incidents involving a company vehicle**-Call the police and address any injuries and assess the damage. Fill out Incident Report to the best of your ability, and make sure to obtain as much information regarding the other party as possible.

I. Immediately notify Shannon Niles at 314-581-2003 (cell) and Tammy Laughlin.
II. A drug and alcohol test will need to be taken.
III. Take photos.
IV. Call the claim in to Enterprise at 1-800-325-8838, option 2 (monitored 24 hours).

- CONDUCTING INCIDENT INVESTIGATIONS

A. Conducting thorough incident investigations permits the company to take an objective look at incidents and near hit incidents, their causes, and the resulting or possible losses. Once the cause(s) has been determined, corrective actions can be taken to prevent a similar recurrence.

B. All incidents which cause personal injury and/or property damage, and all near hit incidents which have the potential to cause serious personal injury or property damage need to be thoroughly investigated.

C. Project supervision should perform the investigation, (a.k.a. Investigators). The supervisor is directly responsible for the crew's operations, including safety. The supervisor knows his people, their work patterns, and the hazards involved in the crew's operations, including safety.

- HOW TO INVESTIGATE

A. Supervisors conducting incident investigations must be familiar with the fundamentals required to make their investigations thorough and complete. They must know the proper terminology, how to deal with people, how to be objective in determining the causes of an incident, and the sequence of steps to take in achieving their goal.

- INCIDENT TERMS

A. An incident is an unintended occurrence that caused or could have caused personal injury or property damage.

B. An injury is the result of an incident; e.g., a fractured bone, a cut, a bruise, a pulled muscle.

C. The primary cause is the unsafe action or condition that caused the incident.

D. Secondary causes are other unsafe actions or conditions that contributed to the incident.

Other causes are conditions that could cause similar accidents, but had little or no effect on the accident being investigated.

- DEALING WITH VICTIMS AND WITNESSES

A. The investigator's ability to deal with victims and witnesses of an incident will determine the amount of useful information he will be able to uncover when asking questions about the events that have taken place. Granted, some people will freely give all requested information, but there are others who will hold back information out of the fear that they or their co-workers will be penalized or blamed for causing the incident. Supervision must maintain an impartial attitude during the investigation. They must be prepared to explain to those being interviewed that they are simply looking for the facts and are not trying to blame anyone. Demanding answers from people usually accomplishes little or nothing.

- Getting the Facts

A. The investigation should start as soon as practical; meaning as soon after the incident as possible, before evidence is cleaned up or removed from the scene and so that witnesses are still in the area and still have a clear picture in their minds of the events that took place. Some parts of the

investigation may have to be postponed; such as, questioning a victim who has been taken to receive medical attention. The important thing is to start the investigation while the facts are still present.

B. Determining the facts about the incident is the first goal in an investigation. Every part of an incident should answer the questions Who, What, When, and Where?

C. The investigator usually has two sources for getting the facts - objects and people.

   a. Objects are physical evidence and, if they are present, should be fairly reliable sources of information because they don't forget or change their mind. The key to inspecting objects is knowing what to look for.

      b. People are another source of information but can be more difficult to deal with and get information from. Remember, the way the investigator deals with people will determine the amount and usefulness of the information received.

D. The information received from people at the scene of the incident may or may not be highly accurate. Certain factors can tend to color or hide the facts behind an incident. Some common factors are:

   1. Did they actually see the incident, or did they just come to see what the noise or excitement was about?

   2. What are the attitudes of those people involved? Do they fear the information they give will direct blame on them or their co-workers? Do they dislike the employer, their bosses, the customer, or the job?

   3. Is this person trying to avoid getting involved? Or, just the opposite, is he looking for an audience?

E. The investigator needs to look for common facts in the statements given by witnesses in order to get a clear picture of what really happened.

   a. When asking the questions "What" such as: "What happened?" or what was the victim doing?" the investigator should look for clear answers. If a witness makes speculations such as: "I guess ...", "He must have ...", "I think ...", "It must have been caused by ..." the investigator needs to use these speculations to spark further questions in order to determine what the witness really knows.

   b. Each employee who witnessed any incident should be interviewed separately by person completing report. The witness statement should be documented by interviewer. Attach witness report to incident investigation. This report should be sent out to the distribution list.

F. Determining the Causes

   a. A successful investigation relies heavily on determining the cause(s) of an incident. An

investigator needs to know what sort of things to look for and be able to recognize evidence when he sees it.

b. There are three basic types of causes:
   - Unsafe conditions (environmental causes). Unsafe acts (personal causes).
   - Weather
   - An unsafe condition is often caused by a previous unsafe act on the part of a "non-involved" employee. The missing guards on a saw, an unattended extension cord or hose left lying across a walkway are unsafe conditions (environmental conditions).
   - Falling down stairs or from a ladder because an employee was in a hurry or getting debris in an eye because the employee didn't wear proper eye protection are unsafe acts (personal causes).

G. Many specific conditions may exist in both groups of causes. A thorough analysis will point out specific environmental and personal causes. Hasty investigations lead to overlooking specific causes and generate general or generic causes; e.g., poor housekeeping, carelessness, failed to follow instructions. You may have to perform an intensive search before discovering the real causes of an incident.

- REPORTING

A. When an incident causes personal injury the first step in conducting the investigation is the thorough and timely completion of the Incident Investigation Report. This report needs to be completed either prior to the injured employee seeking medical treatment or immediately upon his return to work following treatment. Thorough completion and timely submittal of this report paves the way for the injured employee to receive the benefits he is entitled to under the State Workers Compensation Act. The Project Supervisor needs to interview the injured employee in order to get personal information and statements about the incident and his injuries. During the interview the Project Supervisor must:

a. Record the date and time of injury and the exact location on the project where the injury occurred.

b. Ask the employee for and record the legal name, complete mailing address, telephone number, date of birth and other requested information.

c. Ask the employee what he was doing at the time of the injury: what work operation was being performed, what tools and personal protective equipment were being used.

d. Ask the employee how the incident occurred: what actions, objects and substances were involved?

e. Ask the employee to describe the injury: what specific part of the body was injured, what type of injury is it?

f. Record the last date the employee worked and the date he returned to work, if known.

g. Ask the employee for the names of any witnesses.

h. List the name of the doctor or location where the employee received medical treatment.

i. Sign and date the report.

j. Submit the Incident Near Hit Report Investigation Report to the distribution list.

B. Following the completion of the Incident Investigation Report or prior to its completion, if the employee is not expected to return to work following the incident the Project Supervisor needs to start the investigation of the incident. This includes gathering evidence and getting statements from witnesses.

C. The most thorough and accurate investigation is useless unless it is reported. Completion of the report, using what is relevant to the incident and implementing corrective actions ultimately leads to fewer incidents and investigations.

a. To be most effective, the report should be simple, concise and informative. It should indicate logical preventive actions at minimum. The basic facts covered are:

I. The incident - What happened or could have happened?

II. Causes - What was the primary cause? What were the secondary causes? Were there other possible causes (conditions or acts that could have but did not cause this particular accident)?

III. Preventive action - What has been done? Or should be done? To prevent a recurrence?

D. Spaces provided for the recommended corrective actions and their status on the report will serve as a reference for the all-important follow-up.

E. The report will be maintained by the Safety Director.

F. The Company's Project Management/Supervision will take affirmative action to prevent recurrences, based on their appraisal of the accident and its investigation reports.

- PROPERTY DAMAGE/LOSS

Should property damage or loss occur on a jobsite, secure the site and notify the police. DO NOT attempt to apprehend any unauthorized persons on the premises. Take a cursory inventory of the damage but do not touch or move anything unless absolutely necessary. This will allow the authorities to investigate. Complete the Incident Report.

Contact the Safety Department and report the incident for insurance purposes. Information necessary will be: description of the incident, date/time of incident, authorities notified, police report number, inventory of items taken/vandalized. If possible, take pictures of the incident for Paric records and for the insurance.

Finally, notify the General Superintendent(s) and the Project Manager.

JOBSITE EMERGENCY PROCEDURES

A. PURPOSE

The occurrence of incidents such as fire or explosion, toxic chemical releases, entrapment, falls and other hazards requires a planned, prompt, coordinated response on the part of all employers at the work site. Such plans must protect the workers, the public and property from further harm. It is essential that workers know how to report emergencies and what actions they are to take when an emergency occurs.

B. SCOPE

The following emergency procedures are for REPORTING JOB SITE EMERGENCIES, JOB SITE EVACUATIONS, BASIC FIRST AID, and NOTIFYING RESCUE SQUAD/FIRE DEPARTMENT. Each is specific enough to provide direction on each project, yet flexible enough to allow for needed changes. If blanks are left in any procedure, insert the necessary job site information.

C. IMPLEMENTATION

The owner should be consulted prior to start of work at the job site concerning the implementation of these procedures. Close coordination of efforts is required during site emergencies, and our procedures must be compatible with those used by the rest of the project. If a similar site-approved procedure is in use at the project, it should be substituted for the Company procedure.

All employees need to be trained in job site emergency procedures. All procedures should be posted for employee review on bulletin boards, in site trailers and other prominent locations. Documented training should be conducted during new worker orientation (update as necessary) sessions and reviewed during weekly safety meetings in order to assure employees understand the requirements of the procedures.

EMERGENCY RESPONSE PROCEDURE
REPORTING JOB SITE EMERGENCIES
To be posted on employee bulletin board

Incidents of serious injury, fire, explosion, toxic chemical release or other peril which require emergency services such as the rescue squad or fire department must be reported in a prompt, calm and orderly manner. The following procedure should be followed when reporting such incidents.

1. If applicable, notify the office or plant security immediately.

   Telephone number: _____

2. REPORT THE FOLLOWING INFORMATION:
   a. Your name and employer.
   b. The location where you are calling.
   c. The exact location of the incident.
   d. The type of incident.
   e. The number of persons injured and the type of injuries.
   f. Anything special about the incident.
   g. Hang up last – to ensure no further questions.
   h. Evacuate area if incident presents personal danger.

3. WHAT TO DO:
   a. Call the ambulance/rescue squad/fire department.

   b. Contact site superintendent/general foreman/foreman and direct them to the scene of the accident. Upon arrival, the supervisor should direct all first aid and rescue activities unless such duties are assigned to another site authority.

   c. Direct one person to man construction gate to give directions to the ambulance/rescue squad/fire dept.
   d. Contact the Safety Director or company officer at Paric company office at 636-561-9500 to report the incident.

EMERGENCY RESPONSE PROCEDURE
JOB SITE EVACUATION ASSEMBLY AREAS
To be posted on employee bulletin board

In the event of fire, explosion, bomb threat, chemical release, or other job site emergency it may be necessary for personnel to evacuate their work areas and assemble at a safe location on the job site.

1. Paric will signal fire events by 3 air horn blasts (15 second intervals for 2 minutes) in the event an evacuation of the job site is ordered. (In the event the owner specifies another means of signaling, it will be posted on the jobsite).

2. Paric will signal severe weather with 2 air horn blasts (15 second Intervals for 2 minutes)

3. If you are required to evacuate your work area, proceed directly to the primary assembly area, or if necessary to the alternate assembly area indicated below.

   PRIMARY ASSEMBLY AREA:

_____

   ALTERNATE ASSEMBLY AREA:

_____

4. Upon arrival at the assembly area, report immediately to a company supervisor, owner's representative, or an emergency personnel in the area.

5. Relay any information you may have concerning missing personnel.

6. Remain in the assembly area. Do not leave the assembly area until directed to do so by a company supervisor or emergency personnel.

BASIC FIRST AID PROCEDURES

To be posted on employee bulletin board

Workers who possess basic first aid skills can be of great assistance to injured co-workers until emergency services arrive. The following directions should be used when administering basic first aid.

1. DO NOT MOVE THE VICTIM

   If a victim must be moved due to further danger from fire, collapse, water, falling debris, or other peril that may cause additional injury, the rescuers must consider their personal safety over that of the victim. If the victim is to be moved, always suspect back or neck injury. Have one rescuer hold the head still while others lift body as a unit with support on all parts (use eight people or a back board).

2. START THE BREATHING

   If the victim is unconscious check for breathing and a heartbeat: if not breathing begin artificial respiration. If not breathing and no heart beat/pulse begin cardiopulmonary resuscitation (CPR). Continue until professional medical attention arrives at the scene of the accident or the victim breathes on his own. (Only certified personnel should perform CPR.)

3. STOP THE BLEEDING

   Check for bleeding: if the victim is bleeding apply direct pressure to the wound with sterile bandages. If the bleeding does not stop, continue direct pressure to the wound and apply additional bandages. (Do not replace blood soaked bandages - apply new bandages on top of them). If the bleeding does not stop or slow, continue applying direct pressure to the wound and apply pressure to the artery at the pressure point. Major pressure points are located on the inside of the upper arm (approximately half way up) and in the thigh joint to the left or right of the groin. The object is to close the artery by pressing it between your fingers and the bone. The artery will feel like a small rope rolling under the skin and should be pressed against the bone until the rolling stops. Continue direct pressure to the wound at the pressure point until help arrives.

4. TREAT FOR SHOCK

   Keep victim comfortable- cover with a blanket or clothing if victim is cool or cold, provide shade or fan if victim is extremely hot. Talk to the victim and keep him calm until help arrives. Do not give liquids to an unconscious victim or if you suspect internal injuries.

5. AMPUTATON

   Retrieve the limb, place it on ice (if available) or wrap in a moist sterile bandage and transport with the victim to the hospital.

ALL PROJECTS THAT INVOLVE DEMOLITION ARE REQUIRED TO HOLD A PRE-DEMO MEETING BEFORE START

- ✓ Demo plan is consistent on all sites
- ✓ Make sure all participating contractors are present (Electrical, Plumbing, Fire/Sprinkler)
- ✓ Clearly identify items to be demoed and items that stay
- ✓ Flag or spray paint utilities
  - RED = Hot/Needs to stay (DO NOT TOUCH)
  - GREEN = Go
  - NONE = Ask questions (DO NOT TOUCH)
- ✓ MAKE SURE EVERYONE ON SITE IS AWARE OF THE LABELING
- ✓ Print off attached sheet and post on site
- ✓ Make sure ceiling tile gets taken out in beginning phases to identify everything
- ✓ Identify valve shut off locations and show EVERYONE on site
- ✓ Require Foreman from subcontractor to be at pre install
- ✓ Call dig right if possible
- ✓ MEP cutting and capping
- ✓ Coordinate with facility for fire alarms to deactivate
- ✓ Make sure to address all emergency contact info
- ✓ Have subcontractor SIGN OFF on ensuring utilities are shut off

GREEN = GO

RED = HOT/STAYDO NOT TOUCH

NOT LABELED = DO NOT TOUCH
ASK QUESTIONS

- ENVIRONMENT

A. All employees should be trained on hazardous chemicals used in the workplace, in such a manner that Paric's objectives to create awareness, establish precautionary measures, and to prevent and/or minimize environmental impacts are prepared in accordance with OSHA's Hazard Communication (HazCom) standard (Section 9).

a. Supervision when necessary will provide job-specific training with regard to management of hazardous materials. Employees should be made aware of general "good environmental practices" by not discharging materials to storm sewers, but by proper waste disposal.

b. Paric must enforce a strict "No Smoking Policy" in all flammable and hazardous chemical storage areas. Supervision should designate smoking areas on jobs, which restrict personnel from smoking in potential hazardous environments.

c. Drums or chemicals should be properly labeled and stored in an upright position on solid ground with lids or caps firmly secured, and if possible locked.

d. Spills incidental to use, filling, or dispensing operations should be minimized through proper use of drip or catch pans.

e. Spill pallets or other means of secondary containment for bulk or drummed liquids should be utilized when chemicals are stored and used in areas exposed to storm water, have the potential to impact soils, or are in unsecured locations. The need to provide a more secure location for a chemical storage area to guard against accidents, vandalism, or other activities, which may lead to a chemical release to the environment, will be done by Supervision on each jobsite.

f. Spill containment kits should be located where hazardous materials are stored. Contents of these kits may vary depending on size, quantity, and nature of materials stored.

g. Paric needs to ensure all containers, drums, and tanks are properly labeled, inspected periodically, and maintained in good condition.

h. Spillage of fuel, oil, solvents, chemicals, and other such substances need to be cleaned up immediately. Burning it off is not an option. Spills can be cleaned up by the use of a spill containment kit. Cat litter or "Floor Dry" can be used to absorb, if the occurrence is a small quantity. For spills in soil, we may have to dig out the contaminated dirt, place it in a sealed bucket or barrel, properly label as a "Hazardous Waste or Waste Oil" dispose and transport to a facility which accepts contaminated waste. For "over-the-counter" items such as spray paint cans, lubricants, cleaning solutions, and other chemical based items, no specific disposal instruction exists.

i. Paric will strictly enforce provisions for solid, special, and hazardous waste identification, management, storage, transportation, and disposal in accordance with Federal, State, and local regulations for waste generated by Paric, as well as wastes generated by subcontractors.

j. When possible, Paric should obtain environmental reports from the project jobsite owner for all projects involving grading and excavating. These reports should be reviewed to determine if known or potential contamination exists. If no environmental reports exist, the Project Manager or Project Supervision will prepare a written report to the site owner if there is any reason to believe that a potential for contamination exists.

B. It is not unusual for a construction company to dig up forgotten or discarded materials on a jobsite. Should this occur, use the following steps.

1. For liquids or unknown materials in tanks, pipes, or barrels – Stop or redirect the excavation to avoid further spillage or damage to containers. Immediately notify the Project Manager or Safety Director. We will try to identify the substance if possible, or we will have it tested. Do not proceed with excavation or backfill until the material has been identified and a procedure is agreed upon. Notify all parties as identified in the contract documents.

2. For pipes, cables, or communication lines – Stop or redirect the excavation to avoid further damage. Immediately notify the Project Manager or Safety Director. Identify the utility and contact the appropriate company. Do not proceed with removal or backfill until the cable or pipe has been identified and re-surveyed, or relocated.

3. For items of possible historic significance – Stop or redirect the excavation to avoid further damage. Immediately notify Project Manager or Safety Director. Try to identify the item(s) and determine its significance. Do not proceed with backfill or further excavation until the item has been identified and a procedure agreed upon.

C. Incorporate environmental training and issues as required into weekly safety meetings.

a. Many of our work sites are in older buildings where asbestos may be present. Asbestos is typically found in pipe insulation, floor glue and tile, and sometimes as shingles on outside walls. It is not harmful unless inhaled as a fine dust. If asbestos is identified on your jobsite, leave it alone. The Project Manager will notify the appropriate parties listed in the contract documents. The testing and demolition of asbestos should be subcontracted to a company licensed for such work, in accordance to proper environment methods.

b. Employees will be instructed on the proper response procedures for spilled materials, including materials available for use, proper waste disposal, and communication procedures.

c. Areas where chemicals may be used or stored must be maintained using good housekeeping best management practices. This includes, but is not limited to, clean and organized storage, labeling, and secondary containment where necessary.

HAZARD COMMUNICATION PROGRAM

- PURPOSE

The purpose of Paric's Hazard Communication Program is to provide employees with information and training pertaining to the Occupational Safety and Health Administration's Hazard Communication Standard (29 CFR 1926.59) on chemical hazards that may be encountered in the work place and appropriate measures to be taken to prevent and/or lessen such chemical exposure.

- PROGRAM REQUIREMENTS

OSHA's Hazard Communication Standard requires the Company to provide to each work site a written Hazard Communication Program, which addresses the following requirements:

A. A documented inventory of all chemicals used or stored at the work site.

B. The labeling for all hazardous chemical containers.

C. A safety data sheet for each chemical used or stored at the work site.

D. Training for each employee in the requirements of the Hazard Communication Program, chemical hazards at work site, appropriate personal protective measures to prevent or lessen chemical exposures, the accessibility and use of printed Hazard Communication materials and training in the performance of non-routine tasks.

E. A plan for the distribution of hazard communication materials and the notification of other employers regarding chemicals at multi-employer work sites.

- DEFINITIONS

A. Article - a manufactured item which is formed to a specific shape or design during manufacture; which has end function(s) dependent in whole or in part upon its shape or design during end use; and which does not release or otherwise result in exposure to a hazardous chemical, under normal conditions of use.

B. Chemical - any individual element, chemical compound, or mixtures of elements or chemical compounds which include any materials which undergo chemical change during the fabrication/construction process.

C. SDS - Safety Data Sheet.

D. Multi-employer work sites - any company work location where other employers are present.

E. Supervisors - Project Managers, General Superintendents, Superintendents, General Foreman, or Foreman)

F. Work site - any location where the company employees are engaged in work, including construction job sites, warehouses, offices, etc.

- CHEMICAL LISTS

A. The Company will maintain a chemical inventory list for most chemicals used or stored on jobsites. The chemical inventory list will be compiled and maintained by the Safety Director and provided to each jobsite. The list must be modified on the job as follows.

B. Prior to the start of work at each work site the Project Manager/Superintendent should obtain SDS, for any chemicals which are brought onto site by each supplier and subcontractor that he/she intends to use at the work site.

C. The Project Manager/Superintendent is responsible for assuring the work site specific chemical inventory list is kept at the work site and for the addition or deletion of any chemicals from the inventory list, including the appropriate SDS.

D. The Project Manage/Superintendent should verify the chemical inventory list is available for employee review during the work shift.

E. Safety Data Sheets may be found by using 3E Online or by written request to the Safety Director.

- EMERGENCY RESPONSE

A. An incident of over exposure or spill of a hazardous chemical/substance must be reported to the Project Superintendent immediately.

B. The foreman or immediate supervisor will be responsible for insuring that proper emergency response actions are taken in leak/spill situations.

- CONTAINER LABELING

I. All chemicals purchased or supplied to the Company shall be in labeled containers. Container labels must identify the chemical or product name, provide appropriate hazard warnings and identify the name of the manufacturer, supplier, or packager. If Paric provides its subcontractors with supplies or materials, which may be hazardous, Paric will provide them in containers which are properly labeled. This will be the responsibility of each Project Superintendent.

II. Supervision must make certain and require all chemical suppliers to affix legible labels or other approved markings to each chemical container which meet the requirements of

OSHA's Hazard Communication Standard (29 CFR 1926.59 or 29 CFR 1910.1200).

III. Supervision must assure that all multi-use containers used by the Company (e.g. fuel cans) are affixed with labels or otherwise identified to indicate the containers contents and appropriate hazard warnings.

IV. The Project Manager/Supervision must ensure that all chemical containers are properly labeled upon receipt at the work site. Shipments of chemicals, which are not properly labeled, should be refused at the time of delivery.

V. The Project Manager/Supervision must ensure that Company employees neither willfully remove nor deface chemical container labels. Supervision shall take appropriate disciplinary action with any employee involved in the willful removal or defacing of container labels.

VI. Chemical Transfers

VII. Containers into which chemicals are transferred from labeled containers are exempt from labeling, provided that transferred chemicals are intended for immediate use by the employee who performs the transfer.

VIII. Supervision should ensure that no unmarked containers of any size are to be left in a work area unattended.

- SAFETY DATA SHEETS

A. The party responsible for the purchase will be responsible for the procurement of SDS(s) from chemical suppliers.

a. Supervision should request suppliers transmit a SDS for each chemical purchased. The receipt of SDS(s) should precede the receipt of chemical shipments in order to allow for the review and transmittal of the SDS(s) to the work site.

b. SDS(s) received directly from suppliers at work sites must be retained by the Supervision at the work site.

B. Supervision is responsible for the transmittal of all original SDS(s) to the Safety Director for review and inclusion in the Company's master SDS file.

C. Project Managers/Supervision are responsible for procuring and maintaining copies of SDS(s) for all chemicals used or stored at their work sites. SDS(s) for anticipated chemical shipments should be at the work site prior to the receipt of the chemical.

D. Project Managers/Supervision should maintain SDS files in a designated location at the work site or on 3E Online and must assure SDS are made available for employee review

upon reasonable request during the work shift. This includes SDS files from subcontractors for chemicals they are using and storing on the jobsite.

- EMPLOYEE TRAINING

A. Employee training is an essential element of Paric's Hazard Communication Program. As a condition of employment each employee should attend hazard communication training prior to the employee's start of work. Employee training should include the following:

   a. An overview of employer requirements and employee rights as stated in the OSHA Hazard Communication Standard.

   b. An explanation of how to read and interpret chemical container labels and SDS(s).

   c. An explanation of Company safety rules required by the Hazard Communication Program.

   d. A statement of disciplinary action, which will be enacted in the event of employee violations.

   e. The location and availability of chemical lists, SDS(s), and other hazardous chemical information located at the work site.

   f. Information on safety and operating procedures at work sites where hazardous chemicals are present.

   g. Methods and observations that may be used to detect the presence or release of a hazardous chemical at the work site and emergency procedures.

   h. Methods employees can utilize to protect themselves from chemical exposure, such as safe work practices and the use, availability and location of personal protective equipment.

   i. Employees must be trained in Hazardous Materials program. Utilize Field 360 or intranet for forms

B. Additional training should be provided to employees whenever new chemicals or chemical hazards are introduced at the work site or when employees are transferred to other work sites.

C. Hazardous Non-routine Task Training

   a. Hazardous non-routine tasks are generally described as work operations which require employees:

I. To undergo medical monitoring, or

II. Utilize specialized personal protection or hygiene practices (e.g. rubber gloves, rain gear, decontamination showers, etc.), or

III. Enter unusual work spaces (e.g. confined spaces), or

IV. To use hazardous chemicals, or

V. Perform work on or in close proximity to process systems which contain highly hazardous chemical or unlabeled piping and vessels.

b. Project Managers/Supervision need to plan well in advance for the acquisition of information, materials and the training of employees prior to the performance of non-routine tasks. These duties will include, but not be limited to: training employees regarding the chemical hazards involved with the task, arranging for outside medical services, procurement of personal protective equipment and coordination of the task with the work site owner, and other affected employers.

D. Training Records

Written signature records must be maintained for all employees in attendance at hazard communication training sessions. Originals will be maintained by the Safety Director as part the employee's training record. Copies of training records should be maintained at the work site by the Project Manager.

- HAZARD DETERMINATION

The Safety Director will audit and modify as necessary the Company's Hazard Communication Program. Safety Data Sheets provided by chemical suppliers and manufacturers need to be routed to the Safety Director to allow installation into the "Master" file, as these MSD sheets are the primary source of hazard determination under the Hazard Communication Rule.

- HAZARD COMMUNICATION PROGRAM COORDINATOR (HCPC)

Paric Corporation's Safety Director has been designated as the Hazard Communication Program Coordinator. Every jobsite will also have a jobsite coordinator, The Project Superintendent or his safety designee.

- EMPLOYEES' RESPONSIBILITIES

A. Obey established rules.

B. Understand the meaning of GHS Pictograms and Hazard Classes. Utilize Field 360 or intranet for forms

C. Use personal protective equipment as required.

D. Inform you foreman of:
Any symptoms of overexposure that may possibly be related to hazardous substances. The location of emergency equipment. The use of unapproved containers for hazardous substances. Missing labels on containers.

- COORDINATION OF SUBCONTRACTORS

A. On site subcontractors are required to adhere to the provisions of the Hazard Communication Standard.

B. Information on hazardous chemicals known to be present will be exchanged with other Subcontractors. Subcontractors will be responsible for providing necessary information to their employees. Paric must coordinate the collection and exchange of SDS(s) on the job.

C. On site subcontractors will provide Paric with a copy of their Hazard Communication Program.

D. The project office or construction trailer shall be designated as the location where all contractors will have copies of their Safety Data Sheets (SDS) and Chemical Inventory. This will be a project file for emergency information purposes and will not relieve subcontractors of their responsibilities under Code of Federal Regulations (CFR) 1926.59.

a. POSTING – Paric and all Subcontractors need to post information for employees at the jobsite on the Hazard Communication Standard. Information should include designated location where information can be found.

EMPLOYEE TRAINING

- PURPOSE

Employee training is an essential element in any job-site accident prevention program. Conducting regular and well planned employee training sessions serves two major functions.

A. Training teaches and reinforces the skills needed by employees to perform their jobs in a safe manner and to recognize, avoid, and eliminate hazards in their work areas.

B. Training directly communicates to employees the Company's commitment to job site safety and the employees' wellbeing.

- TRAINING METHODS

It is the intent of Paric's employee training programs to establish and maintain a line of communication between company management and employees concerning accident prevention and job safety in order to reduce the occurrence and severity of personal injury accidents and property losses and to assure compliance with governmental safety regulations. The following programs outline the methods to be used in establishing and maintaining high levels of employee safety performance:

A. New Worker Orientation Program.

B. Weekly Safety Meeting Program. Utilize Field 360 or intranet for forms

C. Task specific safety meetings, or “Heads Up” talk for changes.

a. New Worker Orientation Program – Utilize Field 360 or intranet for forms. Every construction employee should participate in a new worker orientation session on their first day on the job site prior to the actual start of work, regardless of their previous employment history with the company. They then will have follow up orientation with in the first month of their employment, and then a Quarterly follow up will be completed also. The training must be conducted by the job's lead field supervisor and should meet the following criteria:

I. Project emergency procedures and accident reporting

II. Policies regarding the use of personal protective equipment and employee conduct

III. Hazards inherent to the job site

IV. Hazards inherent to the work being performed

V. Specific work rules and procedures for equipment

VI. Hazard Communication

VII. Disciplinary Action Program

See "New Worker Orientation Sign Off Sheet" (Utilize Field 360 or intranet for forms) for complete details.

b. Weekly Safety Meeting Program - Employee safety meetings must be conducted at least once each week (Monday or Tuesday) at all Paric job sites in order to provide company employees with safety training and insight applicable to their jobs. Furthermore, the meetings provide employees forum to review recent accidents, discuss job site safety concerns, and discuss upcoming work operations.

I. Project managers are required to have their field supervisors conduct at least one safety meeting per week with all employees in attendance.

II. The Safety Director will provide safety meeting materials. Project managers and their field supervisors should select, if necessary, safety topics, which are applicable to their job site and work conditions. However, the Safety Director, Owner, or Client may prescribe safety topics, which are deemed essential to the safeguarding of job site employees and property. See "Discussion Leaders Guide to Conducting Safety Meetings."

D. “Heads Up Talk” - Task specific safety meetings or talks for changes in the scope of work. Potential hazards are to be addressed in a two to three minute discussion.

E. Additional Training Requirements - Certain regulations issued by the Occupational Safety and Health Administration (OSHA) contain specific employee training requirements which are applicable to construction. These regulations include: Hazard Communication (29CFR 1926.59), Process Safety Management (29CFR 1910.119), as well as others. Training requirements for these can be in the appropriate sections of this manual, or can be obtained from the Safety Director.

F. Pre-Task Safety Assessment (STA) – Utilize Field 360 or intranet for forms. It is imperative to continuously improve safety awareness on every task to be performed, and to provide for a safer work environment. The following Program is not a new procedure. It is a way to write down your discussions that already take place prior to starting a specific task. Utilize the Job Hazard Analysis Form during the pre-planning with each Crew.

G. Prior to the start of each workday, every Foreman shall meet with all members of the Foreman’s assigned Crew to identify, evaluate, discuss and/or revisit each task they will be performing during that day. The purpose of this meeting shall be to identify and analyze what safety hazards and danger zones exist in the performance of each task. Once the safety hazards and danger zones have been analyzed, the Foreman and the Crew will recommend what safe work procedures need to be implemented.

There will obviously be times when the task being performed will be the same from day-to-day, but because members of a Crew will change, previously unknown, unsafe conditions become apparent, the weather changes, etc., it shall still be necessary for the Daily Job Hazard Analysis to be performed or reviewed at the start of each day.

The attached Daily Job Hazard Analysis Meeting Form shall be completed daily by the Crew Foreman in a legible manner, be signed by each crew member, kept on site to review for future reference and a copy sent to the Safety Director. These forms will be added to the safety meeting inventory for future use. If changes are made to existing JHA’S please forward to the Safety

Director so updates can be made to the existing forms.

SUPERVISORS GUIDE TO CONDUCTING NEW WORKER ORIENTATION

- PURPOSE

  Conducting new worker orientations is considered one of the most effective ways to prevent work related injuries and accidents. Statistics show that new workers are more likely to be injured during their first two months on the job than during any other time during their employment with the Company. New worker orientation sessions, if conducted properly, significantly reduce the chance of injury by providing new workers with up-front information regarding job site hazards and Company and owner policies and safety regulations. Furthermore, orientation sessions allow you, the supervisor, to size-up new workers for job knowledge and skills prior to making crew assignments.

- WHO IS A NEW WORKER

  A new worker is anyone who is new to the company, the job, or your crew, irrespective of their previous employment history with the Company. Even seasoned workers should be subjected to the orientation process since rarely are two jobs ever alike.

- STARTING THE NEW WORKER OFF RIGHT

  It is essential that new workers receive orientation during their first day on the job and prior to the start of work. Generally, orientation sessions should be conducted in conjunction with or immediately following payroll processing.

  (TO BE COMPLETED BY THE SUPERINTENDENT)

  Make Company and job-specific information readily available for employee review.
  Provide details of working rules and safety regulations.
  Inform worker of emergency procedures, emergency numbers, and medical facilities.
  Hazards associated with job-site.

- DISCIPLINARY ACTION PROGRAM

  A. Ask About Last Job - Ask each new worker to briefly describe his last job, the type of work he performed, and reason for leaving. This will give information concerning the new worker's job knowledge, skills and attitude toward employers and his work. If you feel the need to inquire further, do so, but with caution. Do not get too personal, as this may tend to put the new worker on the defensive. Your goal is to relax the new worker and get as much voluntary information as possible in order to judge his strengths and weaknesses for the job at hand.

  B. Show The New Worker around the Job - Escort new worker(s) to the work area. Along the way point out job safety hazards, rest rooms, designated eating areas (if applicable), and areas out-of-bounds to employees. This is the time to introduce the new worker(s) to the crew.

  C. Introduce New Workers to the Crew - Introduce the new worker(s) to the employees he/she will work with and depend on daily. Show the location of tools, materials and safety equipment in the work area. If new workers are to be paired off, it is preferable that they be paired with an experienced worker.

D. Give New Worker a Test Run on Tools and Equipment - Many of the tools and equipment supplied by the company can cause personal injury and property damage if used by an inexperienced operator. Let new workers demonstrate their skill with tools and equipment as well as material handling prior to the start of work. Take a few minutes to show the proper and safe way to lift and handle materials. Remind the new worker to wait if something is too heavy or awkward to lift. Tell them to "GET HELP". Remember many hands make light work.

E. Keep an Eye on New Workers - Check back with new workers during their first few days on the job to see how they are coming along. If a new worker is performing unsafe acts, now is the time to correct them before someone gets hurt and/or a bad habit is formed.

DISCUSSION LEADERS GUIDE TO CONDUCTING SAFETY MEETINGS

- PURPOSE

  Conducting weekly safety meetings is an essential element in a successful safety program. Weekly safety meetings allow company management to convey their commitment to safety to the employees; and allows project management the opportunity to provide employees with safety information regarding their work environment and work operations. Furthermore, it provides employees with a forum to voice their safety concerns.

- WHEN TO CONDUCT SAFETY MEETINGS

  Safety meetings should be conducted at the same time and on the same day each week (Monday), preferably at the start of the work shift or after a meal break since these are the times that employees tend to congregate together. Furthermore, the holding of regularly scheduled safety meetings gives employees the sense of their importance.

- WHERE TO CONDUCT SAFETY MEETINGS

  Safety meetings should be conducted in a surrounding that is absent of distractions, such as passers-by and loud noises from machinery and equipment. The object is to keep and hold everyone's attention while the meeting is in session. A good location for this type of environment is in the job change trailer or shack on smaller jobs. On larger projects it may be necessary to conduct several meetings. Break areas are a good location to do this.

- MEETING SIZE

  The number of employees at a safety meeting should not exceed twenty individuals. Larger groups tend to have more distractions and a shorter attention span. Preferably meetings will be conducted on a crew size basis to take full advantage of the format.

- MEETING LENGTH

  Safety meetings should be at least five minutes in length and last no longer than ten minutes unless special circumstances call for more time to be taken.

- THE DISCUSSION LEADER

  Traditionally the discussion leader for a safety meeting is looked upon as being a job supervisor, or someone in the company who is involved with safety, however, anyone can serve as a discussion leader. All that is asked is that they take the job of discussion leader seriously.

- PLANNING THE MEETING

  A. Prior to the meeting the project manager or supervisor will receive one of the safety meeting topics which have been supplied to the jobsite by the Safety Director. Other topics such as: recent jobsite accidents and upcoming work operations should be considered for discussion, in addition to original topic.

B. Once the discussion leader receives the meeting topic he/she should thoroughly review the information. The discussion leader should then try to relate a personal experience or something on the jobsite that is directly related to the week's safety topic.

- CONDUCTING THE MEETING

A. Safety meetings should be conducted on time and with all required personnel in attendance. TAKE ATTENDANCE - Everyone present at the meeting is required to sign in.

B. KNOW YOUR TOPIC - Don't just read from the safety meeting guide but use it as a guide to insure you cover all major points.

C. KEEP IT SHORT - The meeting should only last about ten minutes, as well as time left over for a discussion period. Keep your points relevant to the subject.

D. KEEP IT INFORMAL - Try and create a relaxed yet controlled atmosphere, however, when the discussion leader is talking everyone else should listen.

E. PROMOTE GROUP DISCUSSION - Following the presentation, ask if anyone has questions or comments. When this occurs it is necessary for the discussion leader to act as a moderator in order to keep the meeting on track.

F. AFTER THE MEETING

a. At the conclusion of the meeting record any pertinent comments on the attendance sheet and then return to the Safety Director.

PARIC CORPORATION NEW WORKER ORIENTATION SIGN-OFF SHEET

PARIC CORPORATION NEW WORKER ORIENTATION SIGN-OFF SHEET	
Employee's Name (printed):	**Social Security No.:**
Name and Number	**Location:**

EMPLOYEE INITIALS	EMPLOYEE CHECK-OFF
	I am aware of and understand Paric Disciplinary Policy
	I am aware of and understand Paric's Substance Abuse Policy.
	A Company representative has discussed rules and procedures specific to this work site.
	A Company representative has discussed the location of emergency telephone numbers.
	A Company representative has discussed emergency procedures specific to this work site.
	A Company representative has discussed how and where to report accidents and injuries and where to seek medical treatment for work related injuries.
	A Company representative has discussed the Company's and this work site's personal protective equipment requirements. The wearing of hard hats is mandatory at work sites. Eye protection as required by task performed.
	A Company representative has discussed safety hazards related to Company work operations and hazards inherent to this work site.
	A Company representative has discussed the Company's Hazard Communication Program and disclosed the location of this work sites written Hazard Communication Program and Safety Data Sheets.
	Owner Requirements covered. (i.e. Working Permits, Smoking and/or Eating Policy, Badges, Parking, etc.)

EMERGENCY MEDICAL INFORMATION

PLEASE LIST PERSON(S) WHICH MAY BE CONTACTED IN CASE OF EMERGENCY

Name:	**Relationship:**	**Telephone No.:**
Name:	**Relationship:**	**Telephone No.:**

Please list any health conditions you may have in the event you require emergency medical treatment. (Submittal of health information is voluntary and confidential)

As a condition of employment I acknowledge that I understand and agree to abide by all instructions, written or oral, presented during new worker orientation.

Employee's signature:	**Date:**

I have presented all required printed materials and discussed, as necessary, all listed criteria required for New Workers Orientation with the employee whose name appears above.

Company Representative's signature:	**Date:**

PERSONAL PROTECTIVE EQUIPMENT - PPE

- GENERAL

  Prior to utilizing PPE Paric would follow the Hierarchy of controls Elimination, Substitution, Engineering controls, Administrative, controls, and then PPE.

  A. Employees must provide all required personal protective equipment including regular work clothing, foot wear and prescription eye wear. Employees caused to enter hazardous areas or perform tasks which could pose possible hazards, will be provided with all necessary personal protective equipment.

  B. The Company will instruct employees in the proper use and selection of personal protective equipment.

  C. Employees are required to properly use and maintain the personal protective equipment.

  D. All supervisors will be responsible for ensuring employees use personal protective equipment as required.

  E. Any/all training must be documented.

  F. Retraining of the employee is required when the workplace changes, making the earlier training obsolete, the type of PPE changes or when the employee demonstrates lack of use, improper use, or insufficient skill or understanding.

  G. In instances where employee owned equipment is used, the employer must be responsible for the assurances of its adequacy, maintenance & sanitation.

     a. The hazard assessment must be performed to indicate a whether hazards are present or are likely to be present, which necessitate the use of PPE. Any assessment must be signed.

     b. Required PPE must be fitted, which includes proper donning, doffing, cleaning, and maintenance. Any defective or damaged equipment shall not be used.

- HEAD PROTECTION

  A. Nonmetallic hard hats must be worn at all times by Paric employees, subcontractor employees, visitors, and vendors in all areas of the project and in other areas as stipulated by the company. All employees will be supplied and required to wear company-supplied hard hats.

  B. Employees are prohibited from modifying the shell or suspension of a hard hat in any manner. Wearing hard hats backwards is prohibited.

  C. Defective hard hats should be immediately removed from service and replaced.

- EYE AND FACE PROTECTION

  A. Company employees, subcontractor employees, visitors and vendors must wear approved eye

protection at all times. Additional eye protection may be required while performing task such as chipping, grinding, handling chemicals, using demo or chop saw, etc. Eye protection should meet the ANSI Standard Z87.1 for shatter resistance and be equipped with side shields.

B. Employee prescription eye wear must meet ANSI Standard Z87.1 for shatter resistance and be equipped with side shields. Employees with prescription eyewear that does not meet this standard must be required to wear additional eye protection.

   a. Paric will provide prescription safety eyewear (as defined below) for salaried Employees and Craft Employees, with tenure of 1 year, that wear prescription eyewear.
   For further clarification or eligibility, contact your Safety Representative.

      I. There is a $100 maximum allowance for prescription safety eyewear.

      II. The cost of lenses and frames will be reimbursed every 24 months.

      III. Any costs in addition to those listed above will be the responsibility of the Employee. The Employee shall use Safe Vision in order to purchase prescription eyewear. The employee can then submit any additional cost after the safe vision discounts have been applied to their insurance company for coverage. Paric will then reimburse any remaining cost of the prescription safety glasses up to $100 once the employee has submitted a there out of pocket cost after their insurance has been utilized.

C. A face shield worn over safety glasses should be the minimum protection required for exposure to flying or falling dust or particles. Safety goggles over glasses should be worn for high exposure to such hazards.

D. A face shield over chemical goggles should be worn for all exposures to chemical splash.

E. Safety glasses should be worn under face shields.

F. Welding & Burning Operations

Safety glasses are required at all times while wearing a welding hood and/or face shield. Employees performing or observing welding, brazing and flame cutting operations must wear shaded lenses appropriate to the flash exposure (see chart below). Contractors that are engaging in welding, brazing, and flame cutting shall provide a screen or some type of protection to other workers that may enter the area they are working in.

Welding Operation	Shade Number
Shielded metal-arc welding 1/16, 3/32, 1/8, 5/32 inch diameter electrodes	10
Gas-shielded arc welding (nonferrous) 1/16, 3/32, 1/8, 5/32 inch diameter electrodes	11
Gas-shielded arc welding (ferrous) 1/16, 3/32, 1/8, 5/32 inch diameter electrodes	12
Shielded metal-arc welding 3/16, 7/32, 1/4 inch diameter electrodes	12
5/16, 3/8-inch diameter electrodes	14
Atomic hydrogen welding	14

Carbon-arc welding	14
Soldering	2
Torch brazing	3 or 4
Light cutting, up to 1 inch	3 or 4
Medium cutting, 1 to 6 inches	4 or 5
Heavy cutting, more than 6 inches	5 or 6
Gas welding (light), up to 1/8 inch	4 or 5
Gas welding (medium), 1/8 to 1/2-inch	5 or 6
Gas welding (heavy), more than 1/2-inch	6 or 8

G. Employees performing overhead tasks are required to wear Pyramex I-Force Goggles. Overhead tasks may include: drilling, shooting, cutting, scraping, grinding, etc.

- WORK CLOTHING

A. Proper work clothing for employees will consist of a shirt (long or short sleeved with a minimum of a 4" sleeve) and long pants.

B. Loose shirttails should be tucked into the trousers.

C. Long shirtsleeves, if not buttoned at the wrist, should be rolled up above the elbows.

D. Sleeveless shirts or sleeveless undershirts are not permitted as outerwear.

E. The wearing of loose-fitting or torn clothing is prohibited. The wearing of excessively dirty, oily, greasy, or chemical-soaked clothing is prohibited.

- HIGH VISIBILITY CLOTHING

A. All personnel are required to wear high visibility clothing on all Paric projects. At a minimum a safety vest will be provided for you. T-shirts and other high visibility clothing will be available through the Paric clothing line for purchase.

a. High visibility clothing will include vest, t-shirts jackets, sweatshirts that are safety green/yellow or orange. The high visibility clothing must be openly visible not worn under a jacket.

- FOOT PROTECTION

A. Employee foot protection must consist of hard-soled, rubber-heeled, well-fitting, leather work boots or shoes that are in good repair. Boots with uppers that extend over the top of the ankle are preferred.

B. All employees are encouraged to wear and may be caused by work place requirements to wear safety shoes equipped with safety toes and shanks. The purchase of safety shoes, unless specified by collective bargaining, is at the employee's expense.

C. Metatarsal protection will be provided if the employee is performing such task they would need additional protection

D. The wearing of street shoes, tennis shoes, or sandals in a construction area is prohibited.

- HEARING PROTECTION

A. All employees exposed to noise levels in excess of 85 dBA will be provided with approved and properly rated hearing protective devices. In the absence of approved noise level meters, the phrase "in excess of 85 dBA" should be implied to mean whenever listening to and understanding normal conversation is impaired by the surrounding noise level at 4'.

B. Hearing protection devices should either be ear plugs or muffs. Disposable, self-adjusting, foam ear plugs are the most preferred type of protective device due to their ability to effectively reduce noise levels and protect employee health. Plain cotton is not an acceptable protective device.

C. Permissible Noise Exposures

Permissible noise exposure levels are time weighted against the continuous noise level experienced in an area. Table 6.1 lists acceptable duration periods at specific noise levels without approved hearing protection.

Duration per day, # of hours	Response
8	90
6	92
4	95
3	97
2	100
1	105
1/2	110
1/4 or less	115
Exposure to impulsive or impact noise should not exceed 140 dBA peak sound pressure level.	

D. Radios/Earphones/IPODS/Music Policy

a. Radios, earphones, IPODS and other devices for music shall not be allowed on Paric projects.

- FALL PROTECTION

A. General

a. Employees will be required to wear and use fall protection devices when exposed to potential fall hazards of six or more feet as measured from the waist except when more

stringent height requirements have been prescribed for the work place. The Company requires a 100% tie-off policy at all of its work sites.

b. Any fall protection device which has been subjected to in-service loading (has been used to break a fall) must be immediately removed from service, disabled and tagged to prevent further use.

c. Employee's should inspect their fall protection equipment prior to the equipment's first use on each shift and more frequently when the work environment is hostile to the equipment. Employees should look for signs of abrasion, wear, deformed hardware and deterioration. Any fall protection equipment showing signs of wear or damage must be immediately removed from service, disabled and tagged to prevent further employee use.

d. Fall protection equipment should be stored in a clean, dry location, away from sunlight. Provisions should be made for the hanging of harnesses, lanyards and lifelines to allow for air drying and to prevent the infiltration of dirt and other abrasives.

e. Employees weighing 300 lbs or greater require special consideration in the selection and use of fall protection devices. The Safety Director should be contacted in the event employees of this physical stature are being assigned to perform work operations subject to the requirements of this section.

f. All fall protection tie-off points should be located as high as possible above the waist-line and must be capable of supporting a dead load of 5400 pounds or greater per employee.

B. Training

a. Employees receive training pertaining to the recognition and elimination of fall hazards. A training program shall be provided for each employee who might be exposed to fall hazards. Training shall enable each employee to recognize the hazards of falling and shall train each employee in the procedures to follow to minimize these hazards.

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

c. Retraining – Retraining shall be provided when the following are noted.
   - Deficiencies in training,
   - Workplace changes
   - Fall protection systems or equipment changes that render previous training obsolete.

d. All training is documented. Written certification records must be maintained showing the following:

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

e. Training records shall be retained in the corporate office.

C. Prompt Rescue of an Employee in the Event of a Fall

a. PARIC shall provide for prompt rescue of employees in the event of a fall or shall assure the employees are able to rescue themselves.

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

c. PARIC shall conduct accident investigations in the event of a fall, near miss or other serious incident.

d. Accident investigations shall be conducted to evaluate the fall protection plan for potential updates to practices, procedures or training in order to prevent reoccurrence.

e. Changes to the fall protection program shall be implemented if deemed appropriate from incident corrective actions.

D. Body Harnesses

a. Body harnesses must be used for fall protection and positioning work. Company policy prohibits the use of body belts/safety belts for fall protection or positioning work. Harnesses need to be worn in accordance with the manufacturer's instructions utilizing all straps and buckles to attain a proper fit. The harness should be properly fitted to the wearer as to not restrict circulation nor permit the wearer to fall free of the device in the event of a fall.

b. When body harnesses are to be used for fall protection the attachment point for lanyards and other fall arresting devices must be to the D-ring located on the back of the harness between the shoulders.

c. When body harnesses are to be used for positioning work the harnesses must be equipped with D-rings located on the left and right side at the waistline. Harnesses used for positioning must be used in conjunction with properly sized lanyards.

E. Lanyards

a. Lanyards must be used in conjunction with body harnesses for the purpose of arresting potential falls. Lanyards should be adjusted as to not permit a fall of greater than six feet.

b. Only manufactured lanyards constructed of synthetic/nylon webbed strapping or rope, or steel cable should be used. All lanyards need to be equipped with shock absorbing devices and double locking snap hooks. Lanyards used for positioning work do not require a shock absorbing device. The use of synthetic/nylon web strap and lanyard is preferred, however, the use of steel cable must be considered in locations where the work environment is hostile to synthetic materials. The use of natural fiber rope lanyards, job-made lanyards and lanyards equipped with single locking snap hooks is prohibited.

c. Safe Work Practices

I. Rope lanyards must not be used to tie-off around hard edged objects such as angle iron or steel beams.

II. The connecting of two lanyards together to make a single long lanyard is prohibited.

III. A manufactured beam strap constructed of nylon or steel cable should be used to wrap around beams, pipes, and other anchorage points to create tie-off points which are mated to lanyard snap hooks.

E. Lifelines

Various types of lifelines can be used to provide workers with tie-off points when lanyard tie-offs to static anchorage points cannot be made due to the physical distance between the worker and anchorage. Vertical lifelines, horizontal (static) lifelines, and retractable lifelines can be utilized in certain situations to provide workers with fall protection. Described below are some typical applications for the devices.

a. Vertical lifelines used in conjunction with mated rope grabs need to be used for fall protection when work is being performed in areas where tie-off points are located overhead and out of reach of the worker. An individual, independently anchored vertical lifeline should be provided for each worker. Vertical lifelines must be 5/8" or 3/4" laid nylon rope or rope of equivalent strength which is capable of supporting a dead load of 5400 lbs and be used in conjunction with a properly sized rope grab. The worker ties-off to the rope grab with his lanyard and moves the rope grab up or down the rope to change the height of the tie-off point. Typical applications include work performed from swing stages, spiders and other types of suspended work platforms as well as in shafts and on ladders.

b. Horizontal lifelines, commonly referred to as static lines, are constructed of wire rope which is strung horizontally and attached at each end to a suitable anchorage. The horizontal configuration allows for the tie-off of more than one worker and allows workers to move parallel to an exposed edge. The design of the lifeline must be calculated and approved by a professional engineer with a copy of the certification kept at the work site. Horizontal lifelines must be erected for employee fall protection when other suitable types of fall protection (i.e. standard guard rails) are impractical to install and/or suitable overhead tie-off points are not available or are impractical to use due to the work operation being performed. Workers tie off to the lifeline by the attachment of the lanyard snap hook to the cable. In cases where workers must disconnect from the lifeline in order to move past an intermediate anchorage point, a double tie-off (a second lanyard) must be used to assure 100% tie-off. Typical applications include: work performed on pipe bridges and pick boards and when employees must work on a leading edge and other open locations where fall protection is required.

b. Retractable lifelines are manufactured lifelines constructed of steel cable wound around a spring loaded and centrifugally braked spool housed in a metal casing or block. The system operates by paying out cable as the worker moves horizontally or vertically away from the block. The system automatically rewinds as the worker moves back toward the block. In the event the worker falls, the system's brake senses the rate at which cable is paying out of the

spool and will arrest the fall within 3 feet. Retractable lifelines are used when working near exposed edges and in shafts where tie off points are located too far away from the worker for a standard lanyard tie-off. The systems can also be used in conjunction with horizontal lifelines which will allow workers to travel perpendicular as well as parallel to the horizontal lifeline.

- RESPIRATORY PROTECTION

A. Employees should be provided with and required to use approved respiratory protective equipment whenever they are exposed to atmosphere which contain harmful dusts, fumes, vapors, gases, smokes, etc.

B. Employees required to use respiratory protective equipment approved for atmospheres immediately dangerous to life [such as self-contained breathing apparatuses (SCBA's)] will be subjected to physical examination and be thoroughly and specifically trained and tested prior to its use.

C. Employees required to use respiratory equipment in atmospheres not immediately dangerous to life must be instructed in the proper use and limitations of such equipment.

D. Maintenance

a. Respiratory protective equipment needs to be inspected at regular intervals during periods of use and maintained in accordance with the manufacturer's directions. Filters should be cleaned or replaced when resistance to normal breathing is encountered. Respiratory protective equipment, which has been previously used must be cleaned and disinfected prior to being issued to another employee. Emergency rescue equipment must be cleaned and disinfected immediately following each use.

b. Employees must remove any facial hair, which compromises a respirator’s ability to form a proper seal between the employee’s face and the respirator’s mask.

GLOVE POLICY

A. All employees are to wear protective gloves suited for specific work activity, including any work activity with the potential for severe cuts, lacerations, punctures, burns and severe abrasions.

B. All Laborers should wear gloves at all times.

C. Carpenters should wear gloves when handling material, metal studs and/or where other hazards are present.

- HAND/ARM PROTECTION - GLOVE USE GUIDELINES

A. In PPE required areas, all employees shall wear gloves when handling materials. Activities or tasks, in which gloves may be removed, must be reviewed and approved by Paric.

B. Jersey knit or cotton type gloves are not acceptable for hand protection.

C. Special care shall be taken when working with any equipment or tool that has moving parts that could catch gloves and cause them to become entangled.

D. The jobsite should maintain an adequate supply of the proper gloves for the type of work they will encounter.

E. Employees shall wear the proper gloves during the following tasks:

a. Concrete stripping operations - Suitable gloves for this operation should protect hands from splinters, cuts, and abrasions. While performing this operation one may encounter handling of rough, splintered wood, nails, and tie wire. These types of gloves include:

I. Heavy leather gloves.

II. Heavy leather palmed gloves.

III. Nitrile palmed nylon or Kevlar gloves (minimum ANSI Cut Level A3).

IV. Impact rated gloves are recommended for this operation.

b. Demolition operations* - Suitable gloves for this operation should protect hands from cuts and abrasions. While performing this operation, one may encounter handling of rough, splintered wood, nails, tie wire, metal lathe, studs, etc. These types of gloves include:

I. Heavy leather gloves.

II. Kevlar brand type cut resistant gloves can have Nitrile palms (minimum ANSI Cut Level A3). *Kevlar sleeves that cover the wrist to the elbow should also be worn.

III. If working with metal studs and sharp metal pieces, a minimum ANSI Cut Level A4 glove should be used. *Kevlar sleeves that cover the wrist to the elbow should also be worn.

c. Concrete Placement and Chemical handling operations - Suitable gloves for these operations should protect hands from possible contact with chemicals. Safety Data Sheets (SDS) should be reviewed for proper PPE. While performing these operations one may encounter caustics as in concrete placement, patching, or acid washing and chemicals, such as solvents, fuels, and form oil. These types of gloves include:

I. Coated rubber.

II. Vinyl.

III. Latex.

IV. PVC.

V. Neoprene or Nitrile coated type gloves.

VI. Barrier Cream or Nuatralite spray in conjunction with gloves

d. Hot or cold material handling operations - Suitable gloves for these operations should protect hands from burns or freezing. While performing this operation, one may encounter handling of steel heated by welding and cutting operations, or frozen material. These types of gloves include:

I. Welding gloves.

II. Heavy leather gloves.

e. Exposure to vibration - Suitable gloves for this situation should protect hands from the effects of prolonged exposure to vibration. One may encounter this condition while using tools such as rotary hammers, pneumatic jackhammers, electric hammer drills, etc. These type of gloves include:

I. Anti-vibration gloves.

f. Material handling and general cleanup - Suitable gloves for this operation should protect hands from cuts and abrasions. While performing this operation, one may encounter handling of rough, splintered wood, nails, tie wire, metal studs, sheet metal, broken glass, screws, etc. These type of gloves include:

I. Heavy leather gloves.

II. Kevlar brand type cut resistant gloves, can have Nitrile palms (minimum ANSI Cut Level A3).

g. Using knives and razors - Suitable gloves for this operation should protect hands from cuts. While performing this operation, one may encounter sharp blades including folding knives and razor knives. These types of gloves include:

I. Kevlar brand type cut resistant gloves, can have Nitrile coated palms (minimum ANSI Cut Level A5).

h. Structural and reinforcing steel - Suitable gloves for this operation should protect hands from cuts and abrasions. While performing these operations, one may encounter handling of steel pieces that have burrs, tie wire, and encounter possible pinch points. T hese types of gloves include:

I. Heavy full leather gloves.

II. Kevlar brand type cut resistant gloves, can have Nitrile coated palms (minimum ANSI Cut Level A3).

i. Employees shall wear arm protection when working with glass, sheet metal or any other product we deem to be a laceration hazard.

I. Kevlar arm sleeves.

SIGNS, SIGNALS, BARRICADES & POSTERS

- SIGNS

A. Signs should be posted in a highly visible manner to warn of existing and potential hazards in areas where work is performed. All hazards should be posted with special attention given to hazards which are: a) difficult to ascertain, b) frequently overlooked, and/or c) have a high risk of potential injury or a proven high frequency of causing accidents. Signs should also be posted as reminders of accident prevention requirements. All signs should be removed when the hazard no longer exists.

B. All employees must obey sign warnings and instructions posted by the company, the construction owner and other work place employers. Those employees who disregard posted warnings, deface signs, or remove them without authorization will be subject to disciplinary actions.

C. DANGER signs must only be posted where immediate hazards exist - e.g., "High Voltage," "No Smoking," "Open Floor Hole," "Falling Debris," etc.

D. CAUTION signs are posted to warn of potential hazards or to caution of unsafe practices - e.g., "Eye Protection Required," "Hard Hat Area," "Low Overhead Clearance," etc.

E. SAFETY INSTRUCTION signs are posted to convey special safety instructions not immediately applicable to hazards or potential hazards - e.g., "Eye Wash," "First Aid Station," etc.

F. EXIT signs, when required, must be lettered in legible red letters not less than 6" high, on a white field.

G. TRAFFIC signs which are posted on the job site or in construction areas which are located in or adjacent to public roads should be standard highway traffic signs.

H. ACCIDENT PREVENTION TAGS are used as a temporary means to warn employees of existing hazards. Their main use is the tagging of defective tools and equipment, identification of equipment which is out-of service (e.g. scaffolds) and to notify others of system lock-outs; however, tags shall not be used as substitutes for positive lock-out devices.

- SIGNALS

A. Whenever work operations are performed adjacent to a street or highway and work operations are such that signs and/or barricades do not provide sufficient protection for the safe movement of workers, equipment, or traffic, use a flagman to provide additional traffic control.

   a. During daylight hours flagmen shall be equipped with paddle signs at least 18 inches across which are imprinted with "STOP" and "SLOW" on alternate sides. Red flags may be used in addition to, but not as a substitute for, paddle signs.

   b. At night a red light (i.e., flashlight with wand) should be used in conjunction with a reflective STOP/SLOW paddle sign.

c. Flagmen must wear red or orange warning vests during the day and vests with reflective materials at night.

d. Flagmen are a liaison between the company and the public. Their appearance should be neat, and they should be courteous to the public, for their own safety and the image of the company.

B. Crane and hoist signals must comply with those specified by ANSI. (Utilize Field 360 or intranet for forms)

a. Crane signal charts should be prominently posted at job sites where cranes are in use. The posting needs to be visible and accessible to all employees. Crane signals should be reviewed periodically during weekly safety meetings.

b. Only qualified persons should be allowed to signal crane operators.

c. Crane and hoist signals should be posted on cranes, but not as the primary crane signal chart. This will ensure employees wishing to read the crane signal chart do not enter into the crane's swing radius.

- BARRICADES

A. Barricades should be installed to warn employees and others of hazardous areas. Danger signs should be posted in conjunction with the installation of barricades to clarify their purpose. Barricades should not be used as substitutes for guardrails, as they are not designed to bear weight or prevent falls.

B. Examples of barricades or barricade materials are:

a. Plastic/nylon ribbon in bright colors. Often called "Caution Tape."

b. Barricade tape (reinforced with nylon, able to be tied and will not tear).

c. Pennant flagging, hung from a reinforced strand and highly visible.

d. Sawhorse traffic barricades.

e. Snow fence.

f. Materials such as 2x4, pipe, or rope.

g. X brace barricades.

C. Areas which should be barricaded:

a. The swing radius of cranes (highly visible).

b. Areas where toxic, flammable, or hazardous materials are in use.

c. Trenches and excavations.

d. Areas where overhead work presents a hazard of falling debris, sparks, welding slag, etc.

e. Across doorways when work is being performed on the other side.

f. The area around the base of step ladders and extension ladders when the ladders are erected in traffic areas.

D. Barricades should be located 3 to 5 feet or more away from the actual hazard area.

E. Vehicular traffic areas require the use of ANSI-approved barricades.

F. Barricades should be continuous, or spaced closely enough so that no person or vehicle could reasonably travel between them unintentionally.

- JOBSITE POSTING & DOCUMENT REQUIREMENTS

A. The documents required on the jobsite should be placed on a bulletin board and covered by plastic to protect them from the weather. There are Federal, State, and Paric Corporation required documents. These are in addition to any work permits.

a. FEDERAL REQUIREMENTS:
Occupational Safety & Health Act – OSHA 29 CFR 1903.2(a)(1). Federal Minimum Wage Notice 29 USC. 206. Employee Polygraph Protection Notice 29 USC 2001. Equal Employment Opportunity Commission/Age. Discrimination 29 CFR 1601.30. This should include ADA information under 42 USC 12188. Family Medical Leave Act of 1993.

b. STATE REQUIREMENTS:
Unemployment Benefits. Workers' Compensation. Discrimination in Employment. Discrimination in Public Accommodation. Prevailing Wage poster. Emergency Numbers. Some states may have additional requirements for documentation on site.

TOOLS

- GENERAL REQUIREMENTS

  A. All hand tools, power tools and similar equipment provided by the Company or its employees must be maintained in a safe working condition. Unsafe tools are to be immediately tagged and removed from service until repaired.

  B. Power-operated tools which are designed to accommodate guards (e.g., grinders, saws, etc.) must be equipped with such guards prior to being issued to the job site. The use of power-operated tools without the required guards or impaired guards is prohibited. Guards cannot be altered in any manner, which would cause them not to function properly or void the manufacturer's warranty.

- HAND TOOLS

  A. Employees are not permitted to use unsafe personal hand tools.

  B. Wrenches (e.g., pipe, end, socket, adjustable, etc.) are not to be used when their jaws are sprung to the point that slippage occurs. The use of cheater bars to increase torque capacity is prohibited.

  C. Impact tools such as chisels, drift pins, punches and wedges are not to be used if they have mushroomed heads. Mushroomed heads may be dressed at the jobsite.

  D. The wooden handles of tools are to be free of cracks and splinters and kept tightly attached to the tool.

- POWER-OPERATED TOOLS

  A. Electric Power Tools

     a. All electric power tools are to be of a three-wire type or double insulated and are subject to the Company's Assured Grounding Program. (See Section 19)

     b. The use of electrical cords for hoisting and lowering of tools is prohibited.

  B. Pneumatic (Air) Power Tools and Hoses

     a. Pneumatic power tools and hoses must be secured at their couplings by a positive means (clips or wire) that prevent them from becoming accidentally disconnected.

     b. Safety clips or retainers must be installed and maintained on pneumatic impact (percussion) tools to prevent attachments from being accidentally expelled.

     c. All pneumatically driven nailers, staplers, and other similar equipment provided with automatic fastener feed, which operate at more than 100 psi pressure at the tool must have a safety device on the muzzle to prevent the tool from ejecting fasteners, unless the muzzle is in contact with the work surface.

d. Compressed air is not to be used for cleaning purposes except where reduced to less than 30 psi, and then only with effective chip guarding and personal protective equipment. The 30 psi requirement does not apply for concrete form, mill scale and similar cleaning purposes.

I. Compressed air is extremely forceful. Depending on its pressure, compressed air can dislodge particles. These particles are a danger since they can enter eyes or abrade skin. There have also been reports of hearing damage caused by the pressure of compressed air and by its sound.

II. Compressed air itself is also a serious hazard. On rare occasions, some of the compressed air can enter the blood stream through a break in the skin or through a body opening. The consequences of even a small quantity of air or other gas in the blood can quickly be fatal.

III. Horseplay has been a cause of some serious workplace accidents caused by individuals not aware of the hazards of compressed air or proper work procedures.

i. A compressed-air tool operator must wear eye protection and other appropriate personal protective equipment.
ii. Before operating an air hose, examine all connections to make sure they are tight and will not come loose under pressure. A loose air hose can make a dangerous bullwhip.
iii. Check the air hose carefully to make sure it is in good condition before opening the valve to let air into the hose; when the job if finished, turn off the valves on both the tool and the airline.
iv. Hold the nozzle when turning the air on or off.
v. Before turning on the air pressure, make sure that dirt from machinery will not be blown onto other workers.
vi. Don’t kink the hose to stop the airflow; always turn off the air and the control valve.
vii. Continuously check the condition of a compressed air tool and the air hose for damage or signs of failure.
viii. Never point a compressed air hose nozzle at any part of your body or another person.
ix. Never use compressed air for a practical joke.
x. Never look into the "business end" of a compressed air tool.
xi. Never use compressed air for cleaning work clothes or machinery.
xii. Keep air hoses out of aisle ways where they can be damaged by traffic or be a tripping hazard.

Equipment Requirements

Every air receiver shall be equipped with an indicating pressure gauge. Every air receiver shall be equipped with an indicating pressure gauge, so located as to be readily visible, and with one or more spring-loaded safety valves. The total relieving capacity of such safety valves shall be such as to prevent pressure in the receiver from exceeding the maximum allowable working pressure of the receiver by more than 10 percent.

Safety valves are tested. All safety valves shall be tested frequently and at regular intervals to determine whether they are in good operating condition. Safety valves, indicating/controlling devices and other safety appliances need to be constructed, located and installed so they cannot be rendered inoperative by any means.

PARIC requires frequent draining of the receiver. The drain valve on air receivers shall be opened and the receiver completely drained frequently and at such intervals as to prevent the accumulation of excessive amounts of liquid in the receiver.

Using Compressed Air for Cleaning
PARIC has specific requirements to prohibit employees from using compressed air for cleaning unless the pressure is reduced to less than 30 p.s.i. Compressed air shall not be used for cleaning purposes except where the pressure is reduced to less than 30 p.s.i. and effective chip guarding and personal protective equipment is implemented.

Inspection of Compressed Air Cylinders
Compressed air cylinders must be visually inspected. PARIC shall determine that compressed gas cylinders under their control are in a safe condition to the extent that this can be determined by visual inspection. These visual inspections shall be conducted as prescribed in the Hazardous Materials Regulations, as they pertain to the type of the compressed cylinders under PARIC control.

e. The manufacturer's safe operating pressure for hoses, pipes, valves, filters and other fittings cannot be exceeded.

f. The use of hoses for hoisting or lowering tools is not permitted.

g. All hose exceeding 1/2-inch inside diameter need to have a safety device at the source of supply or branch line to reduce pressure in case of hose failure.

C. Fuel-Powered Tools

a. All fuel-powered tools, (e.g., gasoline-operated welders, compressors, chop saws, etc.) are to be shut-off during refueling and/or for service or maintenance. All fuel shall be handled in accordance with CFR 1926.152 (See Section 21) and/or approved jobsite procedure.

b. When fuel-powered tools are used in enclosed spaces, the applicable requirements for concentrations of toxic gases and use of personal protective equipment apply.

D. Hydraulic Power Tools

a. The fluids used in hydraulic power tools must be fire-resistant fluids approved under schedule 30 of the US Bureau of Mines, Department of the Interior, and must retain its operating characteristics at the most extreme temperatures to which it will be exposed.

b. The manufacturer's safe operating pressures for hoses, valves, pipes, filters, and other fittings shall not be exceeded.

E. Powder-Actuated Tools

a. Only employees who have been trained and certified can operate powder-actuated tools.

I. Only manufacturer certified trainers should train and certify employees in the operation of powder actuated tools.

II. Employees are prohibited from operating any brand or model of powder actuated tool for which they have not been certified.

b. The tool is to be tested each day before loading to see that safety devices are in proper working condition. The method of testing must be in accordance with the manufacturer's recommended procedure.

c. Personal protective equipment should be worn. Personal protective equipment needs to be in accordance with CFR 1926.102.

d. Any tool found not in proper working order, or that develops a defect during use, must be immediately removed from service, tagged, and not used until properly repaired.

e. Tools are not to be loaded until just prior to the intended firing time. Neither loaded nor empty tools are to be pointed at any employee. Hands are to be kept clear of the open barrel end.

f. Loader tools are not to be left unattended.

g. Do not drive fasteners into very hard or brittle materials such as cast iron, glazed tile, surface hardened steel, glass block, face brick, hollow tile, etc.

h. Driving into materials easily penetrated must be avoided unless such materials are backed by a substance that will prevent the pin or fastener from passing completely through and creating a missile hazard on the other side.

i. Do not drive any fastener into a spalled area caused by an unsatisfactory fastening.

j. The use of safety glasses is a must for employees operating a powder-actuated tool. Other employees when in the area should wear safety glasses or goggles.

k. Powder actuated tools shall not be used in explosive or flammable atmospheres.

l. All tools must be used with the correct shield, guard, or attachment recommended by the

manufacturer.

m. Blind shots should not be made if the operator cannot see what is on the other side of the wall, partition, etc. The area must be secured by some form of barricade, or by blocking off access to danger area before operating the tool.

- GRINDING TOOLS AND ABRASIVE WHEELS

A. All grinding machines must be of sufficient power to maintain the spindle speed at safe levels under all conditions of normal operation.

B. All grinding tools are to be equipped with wheel guards or safety flanges appropriate to their work application. Guards and their fasteners must be strong enough to contain the fragments of a bursting wheel.

C. Bench- and stand-mounted grinders with abrasive wheels must be equipped with safety guards. The guards shall be strong enough to withstand the effects of a bursting wheel.

D. Bench- and stand-mounted grinders must be equipped with rigidly supported and readily adjustable work rests. Work rests are to be kept at a distance not to exceed 1/8 inch from the surface of the wheel.

E. Bench- and stand-mounted grinders should be equipped with tongue guards on the upper exposed surface of the wheel. These are usually attached to the upper front face of the wheel guard.

F. Cup-type abrasive wheels used for external grinding are to be protected by either a revolving cup guard or a band-type guard. All other portable abrasive wheels used for external grinding must be provided with safety guards.

G. All wheels, cups, discs, wire brushes, etc., should be matched to the equipment by shank size, wheel speed rating, etc.

H. The maximum angular exposure of the portable grinding wheel must not exceed 180 degrees.

I. Abrasive wheels are to be closely inspected and ring tested prior to mounting to ensure they are free of cracks and defects.

J. Grinding wheels are to fit freely on the spindle and not be forced on. The spindle nut must only be tightened enough to hold the wheel in place.

K. All employees using abrasive wheels, whether mounted on a bench, stand-mounted or portable grinder, shall wear approved eye and face protection.

L. Shielding or barricades should be placed around work areas near passageways and unprotected workers who would otherwise be exposed to flying shavings and grit produced during grinding operations.

M. When grinding operations are considered to be a fire hazard or hot work (e.g., at chemical plants

or refineries), permits may be required prior to starting work.

- POWER SAWS

A. All circular saws, cutoff saws and chain saws shall be equipped with the manufacturer's guarding devices. The removal, modification, or disabling of saw guarding systems is strictly prohibited.

B. The replacement of blades, cutoff wheels and chains shall only be performed with the saw's power source disabled. Electric-powered saws will be unplugged and gas-driven saws shut off.

C. All employees operating power saws or working within close proximity of their operation are required to wear approved eye and face protection.

D. All power saw blades and cutting wheels must be matched to the saw and material being cut.

EXCAVATING AND TRENCHING

- PURPOSE

The Occupational Safety and Health Administration (OSHA) has designated excavation work as one of the most dangerous types of work performed in the construction industry. The vast majority of these deaths are attributable to cave-ins in improperly designed and/or protected excavations and trenches. In an effort to reduce the number of cave-ins, which occur each year OSHA has enacted more stringent excavation and trenching regulations for the construction industry (29 CFR 1926. Subpart P). Paric has developed programs and procedures for conducting excavation and trenching work which meet or exceed the requirements of Subpart P and require all excavations constructed by the Company and all excavations constructed by others which Company employees have cause to enter be constructed within the parameters of this section.

- DEFINITIONS

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

B. Trench - a narrow excavation made in an earth surface. The depth of the excavation is greater than its width, however, the width of the excavation (measured at the bottom) is less than 15 feet. When concrete forms or other structures are installed or constructed in an excavation so as to reduce the distance from the side of the excavation to the forms or structure to 15 feet or less, (measured at the bottom) the area between the forms or structure to the face of the excavation is considered to be a trench.

C. Competent Person - a person 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 authority to take prompt corrective measures to eliminate such conditions.

   a. The company requires persons considered competent to conduct excavation and trenching operations to have a working knowledge of Subpart P and this section and possess extensive work experience with excavation and trenching operations and protective systems.

D. Protective Systems - Engineering practices and/or materials used to protect employees from cave-ins. Such practices include but are not limited to the sloping or benching of excavated earth faces or the installation of shoring or trench boxes. Such systems may be used separately or in approved combinations.

- EMPLOYEE RESPONSIBILITIES

A. Prior to commencing with any excavation the project supervision should notify and/or provide relevant information to the Safety Director. A pre-install meeting should be held with the Excavation Company, Paric safety representative, and Paric project team. Details should include the project supervision methods to evaluate work site conditions, pre-determine employee safe guarding methods and provide the competent person with a written scope of work. Consideration should be given to anticipated excavation depths and routes, the selection of the protective systems based upon soil classifications and work site conditions, the location of

underground installations, spoil and back fill storage and handling methods, traffic control and public safety.

B. Employee is responsible not to enter a trench or excavation 4’ or greater without proper shoring, access, egress, etc.

C. An excavation permit is required to be filled out daily, prior to work starting. The permit needs to be signed off and approved by the Superintendent on site, then posted in the work area.

- SPECIFIC REQUIREMENTS

A. Surface Encumbrances

Trees, boulders, and other surface encumbrances, located so as to create a hazard to employees involved in excavation work or in the vicinity thereof at any time during operations must be removed and made safe before excavating is begun.

B. Underground Utilities

a. Prior to opening an excavation, the estimated location of underground installations (i.e. sewer, water, gas, telephone, electrical services, etc.) needs to be determined and identified. Utility companies and owners must be contacted within established or customary local response times and advised of proposed work prior to the start of actual excavation. Many states have laws governing notification requirements, which must be observed.
b. Call dig rite for specific state.

c. When the excavation approaches the estimated location of an underground installation, the exact location will be determined by hand digging or other appropriate means.

d. Upon uncovering an underground installation, it should either be protected, supported or removed in order to protect employees.

C. Access and Egress

a. Ladders, stairways, earthen and/or structural ramps may be used for access and egress by employees.

b. Trenches and excavations 4 feet or more in depth must be provided with a means of employee access and egress.

c. Ladders, ramps, or stairways must be provided so that the distance of travel to a means of escape is no greater than 25 feet laterally

d. Ladders when used for access and egress should be erected with a 4:1 pitch when possible with the top of the ladders extending 3 feet above the top of the excavation.

e. Structural ramps designated for equipment and employee use should be designed by a competent person qualified in structural design. The design will utilize cleats of other surface treatments on the walking surface to prevent slipping.

f. Ramps constructed of two or more structural members should utilize members of uniform thickness and strength and need to have all structural members connected together on the bottom to prevent displacement.

D. Vehicular Traffic

Provisions should be made to divert vehicular and equipment traffic away from the excavation site.

a. Employees exposed to vehicular traffic are to be provided with and wear high visibility warning vests or other suitable garments.

b. Barricades and signs should be posted along public and construction roadways to divert passing traffic and pedestrians away from the excavation site.

c. Flagmen should be posted whenever workers or equipment enter traffic lanes.

E. Exposure to Falling Loads

No person is allowed underneath loads being handled by lifting or digging equipment. Employees must stay clear of any vehicle being loaded or unloaded to avoid being struck by any spillage or falling materials. Operators may remain in the cabs of vehicles being loaded or unloaded provided the vehicles are equipped with an over the cab shield or canopy capable of withstanding the force of a falling load.

F. Warning System For Mobile Equipment

A warning system such as a signalman, barricades, or stop logs will be utilized whenever mobile equipment must operate adjacent to an excavation or whenever such equipment is required to approach the edge of an excavation and the operator does not have a clear view and direct view of the edge.

G. Water Accumulation

Employees are not permitted to work within excavations where water has accumulated or is accumulating unless precautions have been taken to protect employees from the hazards posed by water accumulation. The precautions required to protect employees varies with each situation, but could include special support or shield systems to protect from cave-ins, water removal, or the use of safety harnesses and lifelines.

a. Pumping to remove accumulated water or to prevent accumulation must be monitored by a competent person to ensure the proper operation of pumping equipment.

b. If excavation work interrupts the natural drainage of surface water; diversion ditches, dikes, or other suitable means must be used to prevent surface water from entering the excavation.

H. Protection From Loose Rock and Soil

Employees must be protected from the hazard of loose rock and soil falling or rolling into the excavation.

a. Scaling (the removal of loose materials from the face of an excavation) will be performed as necessary to prevent loose materials from falling or rolling from the face of the excavation onto employees within the excavation.

b. Excavated materials (spoil) and backfill materials (when stored adjacent to the edge of the excavation) cannot be placed closer than 2 feet to an exposed edge or protected from entering the excavation by the installation of retaining barriers that are sufficient to prevent materials or equipment from rolling or falling into the excavation. At no time should spoil and backfill materials be placed adjacent to a trench or excavation in such a manner as to create additional height on an excavated face.

I. Hazardous Atmospheres

Excavations where the accumulation of hazardous atmospheres exist or where such atmospheres could be expected to exist are subject to Paric Confined Space Entry Procedure.

a. Atmospheres which either contain less than 19.5% oxygen, exceed 20% of the Lower Explosive Limit (L.E.L.) for flammable gases, exceed a specified Parts Per Million (P.P.M.) for toxic gases, vapors or fumes or any combination of the above are considered to be hazardous.

b. The presence of a hazardous atmosphere in an excavation may be reasonably suspected when work is conducted in or in close proximity to landfill areas, buried piping systems, and above and below ground fuel and chemical storage facilities.

J. Fall Protection

a. Where employees, equipment or the public are permitted to cross over excavations, walkways or bridges with standard guardrails must be provided. Such walkways and bridges must be designed by a competent person.

b. When necessary, standard guardrails or barricades should be erected along the perimeter of the excavation or trench to protect employees and the public.

K. Stability of Adjacent Structures

When excavations are made near or adjacent to existing walls, buildings and other structures due consideration must be given to the stability of such structures. Shoring, underpinning, or bracing is to be installed as necessary, inspected daily and maintained as required to ensure the stability of the structure for employee protection.

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

I. A support system, such as underpinning is provided to ensure the safety of employees and the stability of the structure;

II. The excavation is in stable rock; or

III. A registered professional engineer has determined that the structure is sufficiently removed for the excavation so as to be unaffected by the excavation activity or that the work will not pose a hazard to employees.

b. Sidewalks and pavements cannot be undermined unless a support system or other method of protection is provided to protect employees from possible collapse from such structures.

L. Inspections

a. The Competent Person will conduct documented inspections of the excavation and adjacent areas each day employees are required to enter the excavation. An inspection must be performed at the start of the work shift prior to any employee entering the excavation and throughout the work shift as necessary for evidence of situations that could result in possible cave-ins, indications of protective system failure, hazardous atmospheres, and other hazardous conditions. Inspections are to be made after every rainstorm and other hazard-increasing occurrence.

b. Where the competent person finds evidence of a situation that could endanger employee safety the competent person must order employees out of the hazardous area until all necessary precautions have been taken to assure employee safety.

c. The competent person should document all inspections and corrective actions taken to safe guard employees. All Supervisors Daily Safety Inspections should be maintained as part of the Company's permanent project records.

- SOIL CLASSIFICATION

A. Definitions

a. Cemented soil is soil in which the particles are held together by a chemical agent, such as calcium carbonate (lime), such that a hand sized sample cannot be crushed into powder or individual soil particles by finger pressure.

b. Cohesive soil is clay (fine grained soil), or soil with a high clay content which has cohesive strength. Cohesive soil does not crumble, can be excavated with vertical side slopes, and is plastic when moist. Cohesive soils are hard to break up when dry, and exhibit significant cohesion when submerged. Cohesive soils include clayey silt, silty clay, and organic clay.

c. Disturbed sample is a soil sample taken for testing which has been altered by wetting or drying of the sample.

d. Dry soil is soil that does not exhibit signs of moisture.

e. Fissured is soil material that has a tendency to break along definite planes of fracture with

little resistance, or material that exhibits open cracks, such as tension cracks, in an open surface.

f. Granular soil is gravel, sand, or silt, (course grained soils) with little or no clay content. Granular soil has no cohesive strength. Some moist granular soils exhibit apparent cohesion. Granular soil cannot be molded when moist and crumbles easily when dry.

g. Layered system is two or more distinctly different soil or rock types arranged in layers.

h. Moist soil is a condition in which a soil looks and feels damp. Most cohesive soil can be easily shaped into a ball and rolled into small diameter threads before crumbling. Most granular soils that contain some cohesive material will exhibit signs of cohesion between particles.

i. Plastic is a property, which allows the soil to be formed or molded without cracking, or appreciable volume change.

j. Saturated soil is a soil in which the voids are filled with water. Saturation does not require a flow of water from the soil. Saturation or near saturation, is necessary for the use of instruments such as a pocket penetrometer.

k. Soil classification system is a method of categorizing soil and rock deposits by a grading system, Stable Rock, Type A, Type B, and Type C, in decreasing order of stability.

l. Submerged soil is soil which is underwater, or freely seeping water.

m. Unconfined compressive strength is the load per unit area at which a soil will fail under compression. It can be determined in the field by thumb penetration or using a pocket penetrometer.

n. Undisturbed sample is a soil sample, which has not been altered and is taken immediately following excavation and tested for the purpose of determining soil classification by type.

o. Wet soil is soil that contains significantly more moisture than moist soil, but in such a range of values that cohesive material will slump or begin to flow when vibrated. Granular materials that would exhibit cohesive properties when moist will loosen their cohesive properties when wet

B. Soil Types

Soils have been classified into four general categories in order to aid in determining the type of protective system to be used within excavations. The soil types described below are listed in descending order of stability.

a. Stable Rock. Solid mineral matter that can be excavated with vertical sides and remain intact while exposed. Rock which has been subjected to blasting or jack hammering or which is cracked or fissured is not considered stable.

b. Type A soil. Cohesive soil with an unconfined compressive strength of 1.5 tons per square foot or greater. Examples of cohesive soils are: clay, sandy clay, clay loam, and in some cases

silty clay loam and sandy clay loam. Cemented soils such as hardpan and caliche are also considered Type A. However no soil is Type A and should be classified to a less stable soil if:

I. The soil is fissured; or

II. The soil is subject to vibration from heavy traffic, pile driving, or similar effects; or

III. The soil is previously disturbed; or

IV. The soil is part of a sloped, layered system where the layers dip into the excavation on a slope of four horizontal to one vertical (4h: 1v) or greater; or

V. The soil is subject to factors that would require it to be classified as a less stable materials.

c. Type B soil. Cohesive soil with an unconfined compressive strength greater that 0.5 tons per square foot but less than 1.5 tons per square foot. Other soils considered as Type B soils are:

I. Cohesion less soils including: angular gravel (similar to crushed rock), silt, silty loam, sandy loam, and in some cases, silty clay loam, and sandy clay loam; or

II. Previously disturbed Type A soils;

III. Type A soils which are either fissured or subject to vibration;

IV. Dry rock that is not stable;

V. Soil that is part of a sloped, layered system where the layers dip into the excavation on a slope less deep than four horizontal to one vertical (4h:1v), but only if the soil would otherwise be classified as Type B. However, no soil is type B and should be classified to a less stable soil if:

VI. The soil is fissured; or

VII. The soil is subject to vibration from heavy traffic, pile driving, or similar effects; or

VIII. The soil is previously disturbed; or

IX. The soil is part of a sloped, layered system where the layers dip into the excavation on a slope of four horizontal to one vertical (4h:1v) or greater; or

X. The soil is subject to factors that would require it to be classified as a less stable material.

d. Type C soils. Cohesive soils with an unconfined compressive strength of less than 0.5 tons per square foot. Other soils considered as Type C are:

XI. Granular soils, including gravel, sand and loamy sand;

XII. Submerged soils (soil which is under water) or freely seeping water;

XIII. Submerged rock that is not stable; or

XIV. Soil that is part of a sloped, layered system where the layers dip into the excavation on a slope of four horizontal to one vertical (4h:1v) or deeper.

C. Soil Tests

At least one visual test and one manual test must be performed to determine soil type. The performance of such tests and their outcome should be documented.

a. Manual Tests

I. Plasticity test. Mold a moist or wet sample of soil into a ball and attempt to roll the soil into a thread approximately 1/8" in diameter. Cohesive material can be successfully rolled into a thread without crumbling. If the thread can be held at one end and does not tear into sections less than two inches in length, the sample is a cohesive Type B soil.

II. Dry Strength. If the soil is dry and crumbles on its own or with moderate pressure into individual grains or fine powder, it is granular (any combination of gravel, sand, or silt). If the soil is dry and falls into clumps which break up into smaller clumps, but the smaller clumps can only be broken up with difficulty, it may be clay in any combination with gravel, sand, or silt. If the dry soil breaks into clumps which do not break up into small clumps and which can only be broken with difficulty, and there is no visual indication the soil is fissured, the soil may be considered unfissured.

III. Thumb Penetration. The thumb penetration test can be used to estimate the unconfined compressive strength of cohesive soils. (This test is based on the thumb penetration test described in American Society for Testing and Materials (ASTM) Standard designation D2488—"Standard Recommended Practice for Description of Soils (Visual—Manual Procedure)".) Type A soils with an unconfined compressive strength of 1.5 tsf can be readily indented by the thumb; however, they can be penetrated by the thumb only with very great effort. Type C soils with an unconfined compressive strength of 0.5 tsf can be easily penetrated several inches by the thumb, and can be molded by light finger pressure. This test should be conducted on an undisturbed soil sample, such as a large clump of spoil, as soon as practicable after excavation to keep to a minimum the effects of exposure to drying influences. If the excavation is later exposed to wetting influences (rain, flooding), the classification of the soil must be changed accordingly.

b. Visual Tests

Visual tests are conducted to determine qualitative information regarding the excavation site in general, the soil adjacent to excavation, the soil forming the sides of the open excavation, and the soil taken as samples from excavated material (spoil).

I. Observe soil samples that are excavated and soils in the sides of the excavation. Estimate the range of particle sizes and the relative amounts of the particle sizes. Soil

that is primarily comprised of fine-grained material is cohesive. Soils that are composed of course-grained sand and gravel are granular material.

II. Observe the soil as it is excavated. Soil that remains in clumps is cohesive. Soil that breaks up easily and does not stay in clumps is granular.

III. Observe the sides of the opened excavation and the surface areas adjacent to the excavation. Crack-like openings such as tension cracks could indicate fissured material. If chunks of the soil spall off a vertical face the soil could be fissured. Small spall are evidence of moving ground and are indications of potentially hazardous situations.

IV. Observe the area adjacent to the excavation and the excavation itself for evidence of existing utility or other underground structures in order to identify previously disturbed soil.

V. Observe the opened side of the excavation to identify layered soil systems. Examine the layered systems to identify if the layers slope toward the excavation. Estimate the degree of slope of the layers.

VII. Observe the area adjacent to the excavation and the side of the open excavation for evidence of surface water, water seeping from the sides of the excavation, or the location of the level of the water table.

VIII. Observe the area adjacent to the excavation and the area within the excavation for sources of vibration that may affect the stability of the excavation face. Vehicular and heavy equipment traffic, pile driving, etc are sources of vibration.

- PROTECTIVE SYSTEMS

A. General

Each employee working within an excavation needs to be protected from cave-in by an adequate protective system. Systems which involve the sloping, benching, or shoring of trench faces, or the insertion of trench boxes, or approved combinations of these methods are considered adequate, provided the soils within the excavation are properly classified by a competent person and the protective systems are installed by a competent person in accordance with tabulated data and/or information contained in this section with these exceptions:

a. Excavations, which are made entirely in solid rock;

b. Excavations less than 5 feet in depth, which upon examination of the ground by a competent person provide no indication of collapse;

c. The Company has been provided with an approved excavation and protective system design, by a registered professional engineer which deviates from this section. All such designs must be maintained on site during the excavation operations and maintained as part of the projects permanent record.

d. Excavations greater than 20 feet in depth and their protective systems must be of a design approved and signed off by a registered professional engineer. All such designs must be maintained on site during the excavation operations and maintained as part of the projects permanent record.

- SLOPING AND BENCHING

Sloping and/or benching may be utilized for cave-in protection in excavations 20 feet or less in depth, in soil types A, B, and C, provided the soils are properly classified by a competent person. Soils, which are not classified, should be considered as Type C. Excavations greater than 20 feet in depth which involve sloping or benching must be of a design approved and signed off by a registered professional engineer.

A. Definitions

a. Slope. To excavate an excavation face at an angle.

b. Bench. To excavate an excavation face with a series of alternating vertical faces and horizontal tiers so as to create series of steps rising up the face of an excavation.

c. Actual slope. The angle to which an excavation face is excavated.

d. Maximum allowable slope. The steepest incline of an excavation face that is acceptable for the most favorable site conditions as protection against cave-in and is expressed as the ratio of horizontal distance to vertical rise (H:V).

e. Toe. The point where an excavation face intersects with the bottom of the excavation.

B. The amount of actual slope an excavation face requires is determined by the classification of the soil comprising the excavation face and other factors which can effect soil stability. The lower the soil classification the greater the actual slope that is required. Type A soil requires less slope than Type B soil. Type B soil requires less slope than Type C soil, however, at no time can the actual slope exceed the maximum allowable slope for the soil classification (See Table 7.1).

TABLE 7.1

MAXIMUM ALLOWABLE SLOPE BY SOIL CLASSIFICATION FOR SLOPING AND BENCHING		
SOIL OR ROCK TYPE	MAXIMUM ALLOWABLE SLOPES (H:V) FOR EXCAVATIONS LESS THAN 20 FEET DEEP	
STABLE ROCK	**VERTICAL**	(90^0)
TYPE A (< 12 feet deep and open less than 24 hours)	**1/2:1**	(63^0)

TYPE A	**3/4:1**	(53^0)
TYPE B	**1:1**	(45^0)
TYPE C	**1 1/2:1**	(34^0)

C. Sloping and Benching Designs

a. Simple slope. An excavation which has its faces excavated at a straight angle extending from the top edge of the excavations face to its toe. Simple slope configurations are acceptable in all soil types.

b. Simple Bench. Similar in design to the simple slope except, the bottom of the excavation incorporates a single bench on both sides, which has vertical faces up to 4 feet in depth and a shelf of up to 4 feet in width. Simple bench excavations are acceptable in Type A soils and cohesive Type B soils.

c. Multiple bench. An excavation which is excavated utilizing a series of alternating vertical faces and horizontal shelves tiers so as to create a series of steps rising up the face of an excavation in line with the actual slope. Multiple benching is acceptable in Type A soils and cohesive Type B soils.

d. Unsupported vertically sided lower portion excavations. An excavation configuration which can be made in Type A soil only, which utilizes a combination of upper sloped faces and vertical lower faces (up to 3 1/2 feet in height) and does not require the use of a support system (i.e. shoring or a trench box). This type of excavation can be made to a maximum depth of 8 feet using a maximum allowable slope of 3/4(h):1(v) and up to maximum depth of 12 feet using a maximum allowable slope of 1(h):1(v). Slopes in this unsupported configuration are calculated from the center of the excavation.

e. Supported vertically sided lower portion excavations. This excavation configuration can be constructed in soil types A, B and C at depths of up to 20 feet and utilizes a combination of an upper sloped face and vertical lower faces which are protected by trench box(s) or shoring (see Section 8 of this section for shoring limitations). This excavation can be used provided, (1) the maximum height of the vertical faces is 18 or more inches below the top of the support system; (2) the maximum allowable slope used according to the soil type is calculated from the top of the vertical face on each side of the excavation; and (3) the support system must be used in accordance with the manufacturer's tabulated data and all calculations should be for the entire depth of the excavation.

f. Layered Soil Systems- Layered soils are soils in which one soil class (i.e. Type A soil) is present over another soil class (i.e. Type B soil). These conditions can occur naturally or be man-made. Natural layering can be caused by sedimentation, glaciation, and other forces of nature. Man-made layering occurs when backfill materials are placed over existing soils to raise the grade.

g. Two typical conditions occur in layered soil systems. A more cohesive soil such as a Type A soil is located over a less cohesive soil such as a Type B or Type C. The reverse of this

condition can also exist with a less cohesive soil being present over a more cohesive soil. Both natural and man-made soil layering conditions must be addressed when selecting protective systems for excavation faces.

h. The maximum allowable slope in a layered soil system where a more cohesive soil over lies a less cohesive soil will be based solely upon the classification less cohesive (lower) soil. For example: If a Type A soil is layered over a Type C soil the maximum allowable slope can be no greater than 1 1/2 to 1.

i. When less cohesive soil overlays a more cohesive soil two (2) maximum allowable slopes can be used. For example: If a Type C soil is layered over a Type A soil the lower Type A soil can have a maximum allowable slope of no greater than 3/4 to 1 while the upper layer of Type C soil must have a maximum allowable slope no greater than 1 1/2 to 1.

j. Extra information can be found in Subpart "P" in Appendix B.

- SHORING

A. Definitions

a. Shoring system. A structure built within a trench or excavation which utilizes hydraulic, pneumatic, or mechanical jacks or timbers in conjunction with uprights or wales to prevent the collapse of an excavated face.

b. Cross braces. Commonly referred to as jacks are timber, mechanical, hydraulic, or pneumatic horizontal members of a shoring system installed perpendicular to sides of the excavation for the purpose of placing pressure against the uprights or wales.

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

d. Wales. Horizontal members of a shoring system placed parallel to the excavation face whose sides bear against the vertical members of the shoring system on the earth.

•GENERAL WALKING AND WORKING SURFACES

A. On every Paric job, people must be protected from falling by means of a guardrail, net, or personal fall arrest system when the fall potential is six (6) feet or greater.

B. Fall protection shall be required at all times for anyone who is elevated six (6) feet or greater.

Fall protection can be in the form of guardrails, personal fall arrest systems or a combination of all.

C. Refer to Sections 16, 17 and 18 for floor and wall openings, stairways and ladders, and scaffold fall protection requirements.

D. Site specific fall protection plans will be created by a qualified person for each work site.

•PERSONAL FALL ARREST SYSTEMS

A. Personal Fall Arrest Systems include a point of anchorage, a full body harness and a standard lanyard, a shock absorbing lanyard, a retractable lanyard, lifeline, or suitable combination of these. Only double locking lanyards are allowed.

B. It should be noted that body belts are not permitted for fall arrest but are permitted for fall prevention as positioning devices in some situations. Paric requires full body harnesses whenever they can be used.

•FALL PROTECTION ALTERNATIVES

A. OSHA Standard 1926.502(k) describes the requirements of a fall protection plan that is permitted during leading edge work, precast concrete erection and residential construction. While this type of plan may be advisable in some rare situations, it is a requirement on Paric jobs to use a personal fall arrest system wherever possible. If this plan is required, contact the Safety Director (qualified person) for assistance.

•TRAINING

A. Paric Superintendents will assure that each of our employees have been trained by a competent person qualified in the following areas. Training must be completed before the employee is assigned to work that requires fall protection. The training must be documented, retraining must be given where appropriate. Training subjects include:

a. The nature of the fall hazards in the work areas.

b. Personal protective gear worn by workers performing the job.

c. Connective devices that attach to the workers' protective gear, such as lanyards, rope grabs and retractable lifelines.

d. Anchoring devices that support the entire weight of the system. Commonly called a tie-off point, the anchorage must be capable of supporting 5,000 pounds per attached worker. Eye bolts, overhead beams and integral parts of building structures are all examples of tie-off points. Contact the Safety Director if you have concerns about the anchor points.

e. The use and operation of guardrail systems, safety net systems, warning line systems, safety monitoring systems and controlled access zones.

•PERSONAL FALL ARREST SYSTEM REQUIREMENTS

A. A complete personal fall arrest system consists of:

a. Full body harness.

b. Shock-absorbing lanyard with double locking snaps.

c. Reliable tie-off points: Tie-off attachment points must be capable of supporting 5,000 pounds per worker. Always tie-off above your head if possible.

d. All harnesses, lanyards and other equipment must be visually inspected before each use. Regular inspection for wear, damage, elongation and corrosion must be conducted by a competent person. Defective equipment must be replaced immediately.

e. Employees must also remember to tie off in a manner that will prevent them from coming into contact or striking the next lower level. If using a shock-absorbing lanyard, it can elongate as much as 3-1/2 feet during the shock absorbing process.

f. An employee six feet tall using a six-foot shock-absorbing lanyard must tie off a point at least 15-1/2 feet from a lower level. If you cannot tie off at this height, shorter lanyards must be used.

g. If a fall occurs, all components of the fall arrest system should be removed from service and turned over to the Safety Director. A fall can substantially decrease the strength of all parts of the system, so all components should be replaced after a fall. This is a mandatory OSHA requirement.

h. Paric Superintendents must plan ahead for the safe retrieval of any worker who should

fall and be suspended by a personal fall arrest system. This plan must be done before any work starts.

- ## WARNING LINE SYSTEMS

A. A warning line system is a barrier erected on a low slope roof to warn workers that they are approaching an unprotected roof side or edge. If work is required beyond the warning line, employees shall use a proper fall arrest system. Where it is infeasible, or the use of a fall arrest system poses a greater potential hazard, a safety monitor system will be implemented.

B. Any warning line systems installed on a Paric job must comply with the OSHA standard set forth in Subpart M on fall protection.

C. No worker is allowed in the area between a roof edge and a warning line unless performing roofing work.

D. Mechanical equipment on roofs should be used or stored only in areas where workers are protected by a warning line system, guardrail system, or personal fall arrest system.

•FLOOR AND WALL OPENINGS

A. On every Paric job, people must be protected from falling by means of a guardrail, net, or personal fall arrest system when the fall potential is (6) feet or greater.

   a. Hazardous areas to address include areas such as floor holes, mechanical chases, elevator shafts, stair openings, floor edges, roof edges, skylights, hoist areas, ramps. Also, unprotected door and window openings, leading edges of floors and roof decks.

B. On every Paric job, people must be protected from falling objects.

   a. Hazardous areas include areas where tools, materials, or equipment can roll or be accidentally dislodged and fall onto people below scaffolds, roofs, open floor edges, walkways, skylights, mezzanines, floor openings and mechanical chases.

C. Guarding Wall Openings

   a. Wall openings from which there is a drop of more than (6) feet and the bottom of the opening is less than 39 inches above the working surface, need to be guarded by standard railings.

   b. Extension platforms outside of wall openings onto which materials can be hoisted for handling must have standard guardrails or equivalent guards of standard specifications. One side of an extension platform may have removable rails. When employees have to work close to the unguarded edge, safety harnesses and lifelines will be utilized. Lifelines are to be adjusted as to not permit the workers to travel any further than the unguarded edge.

   c. Unsheathed wall studs where the studs are spaced 18” on center, or greater must have horizontal guardrails attached at 21” and 42” above the floor if the fall on the opposite side of the wall is greater than 6 feet.

•SPECIFICATIONS FOR STANDARD RAILINGS AND COVERS

A. A standard guardrail consists of a top rail, intermediate rail, toe board and posts, and has a vertical height of approximately 42 inches from the upper surface of the top rail to the floor, platform, runway, or ramp level. The top rail should be smooth surfaced throughout the length of the railing. The intermediate rail is to be placed halfway between the top rail and the floor, platform, runway, or ramp. The ends of the rails cannot overhang the terminal posts except where such overhang does not constitute a projection hazard.

B. Standard toe boards are 3 1/2 inches minimum in vertical height from its top edge to the level of the floor platform, runway, or ramp. It must be securely fastened in place and not have more than ¼ inch clearance above floor level. It can be made of any substantial material.

C. Standard guardrail strength is such that the completed structure is capable of withstanding a load of at least 200 pounds applied within 2" of the top edge, in any outward or downward direction at any point on the top rail, with a deflection no less than 39" above the floor.

a. For wood railings, the posts and top rails are to be of at least 2" x 4" stock. The intermediate rail should be of 1" x 6" or 2" x 4" stock. Post spacing should not exceed 8 feet.

b. For pipe railings, the posts, top and intermediate railings are to be of at least 1-1/2 inch (schedule 40) pipe. Post spacing not to exceed 8 feet.

c. For structural steel railings, posts, top, and intermediate rails are to be at least 2" x 2" x 3/8" angle iron. Post spacing not to exceed 8 feet.

d. For wire rope railings, 3/8" minimum can be used. It must be stretched and maintained taut. It must be flagged with high visibility material at a 6' maximum spacing.

D. Covers for floor and roof openings are to be capable of supporting twice the weight of employee's equipment, and materials imposed on the cover. The cover shall be marked "HOLE" and secured to avoid being displaced. When a cover is removed, a removable railing should guard the hole, or a person should be posted near the hole to warn others of the hazard.

E. Covers located in roadways or vehicle aisles must be capable of supporting twice the maximum axle load of the largest vehicle expected to cross over it.

F. Where employees will work or travel under a cover that is used by vehicles or equipment, an engineer must design the cover and its supports and retention system.

- **SAFETY PROCEDURES**

A. Guardrails

a. Employees who remove guardrails or who open access gates in guardrail are responsible for closing such openings upon the completion of work or upon leaving the immediate area. Under no circumstances shall such openings be left unattended.

b. All broken and missing guardrails shall be corrected and/or reported immediately to

supervision responsible for their maintenance. Such areas are to be temporarily barricaded until repairs or replacements have been made.

c. During the erection of structural steel buildings, no employee other than actual erectors and guardrail installers are allowed onto a floor until it has been equipped with a standard railing with an intermediate rail.

d. In the absence of a guardrail, employees who must lean into an opening (such as a hoist area), must be protected from falling by a personal fall arrest system.

B. Hole Covers

a. Employees who remove hole covers are responsible for their replacement upon the completion of work or upon leaving the immediate area.

b. Whenever a floor opening has been opened, an employee must be stationed at the opening or barricades erected to direct passersby around the opening.

c. Floor openings, which are to be left open past the end of the work shift must be barricaded prior to the responsible employee(s) leaving the work area.

d. All floor openings, which have missing or broken hole covers are to be reported immediately to the supervision responsible for their placement and maintenance. Such areas will be temporarily barricaded until repairs or replacements have been made.

e. Entry through floor openings into pits, vaults, sumps, or other confined spaces are subject to confined space entry procedures (see Section 23).

•PROTECION FROM FALLING OBJECTS

A. On every Paric job, people must be protected from falling objects, and all exposed workers must wear a hard hat.

B. Protection is to be provided to prevent the objects from falling such as sufficiently high toe boards on guardrails, screening, canopies, or secured containment.

C. If physical protection cannot be provided, then keep all potential falling objects back from the edge and barricade the area below far enough out to prevent anyone from being struck.

• TRAINING

A. All employees exposed to falls are to be trained to recognize fall hazards and the necessary procedures to prevent falls.

B. Training is to be done by a competent person who has had the experience and training regarding fall hazards and prevention.

C. All employee training will be documented as to the employee's name, date of training, and the trainer will sign off as to the type of training given.

D. Employee's will be retrained as necessary because of apparent lack of understanding, changes in the workplace, or changes in fall protection systems used.

SCAFFOLDS

- **GENERAL**

A. Scaffolding must have a solid footing or anchorage capable of carrying the maximum intended load without settling or displacement. Unstable objects such as boxes, bricks, or concrete blocks cannot be used to support scaffolds or planks. Scaffold must be designed by a qualified person.

B. Scaffolds can only be erected, moved, altered, or dismantled under the supervision of a competent person. The competent person must inspect the scaffold daily before use and periodically throughout the shift.

C. Scaffolds over 6' high should have standard guardrails and toe boards installed on all open sides and ends before employee use.

   a. Top rails need to be constructed approximately 42" high.

   b. Mid rails need to be at least equivalent in strength to 1" x 6" lumber.

   c. Toe boards should be a minimum of 3 ½" high and placed within ¼" of the platform.

   d. Supports need to be spaced at intervals not to exceed 8 feet.

   e. Where the installation of standard guardrails is impossible, employees will wear a safety harness and lanyard. Tie-offs should be made to anchorages located above the waist, which are capable of supporting a 5,400 pound load. Suitable tie off points include, but are not limited to structural and support steel, static lines etc.

D. Where there is a danger of objects falling onto persons below the scaffold, steps need be taken to prevent them such as barricading, higher toeboards, screening between top rail and toeboard, canopies, debris nets, etc.

E. Overhead protection shall be provided for workers on a scaffold exposed to overhead hazards.

F. Scaffolds must be constructed to support four times the maximum intended load, suspension rope and hardware must support six times the maximum intended load.

G. Damaged or weakened parts of scaffolds are to be replaced or repaired immediately.

H. No space over 1" wide is allowed between the parallel planks on a platform. Platforms must be at least 18" wide.

I. Platform planks must extend over the end of the platform supports, at least 6” or be cleated. The maximum extension for platforms less than 10’ is 12” and 18” when greater than 10’ long, unless workers are blocked from the cantilevered end.

J. Overlapping platform planks are to be overlapped a minimum of 12” or secured from movement.

K. Scaffolds with a point of access greater than 2’ above or below the platform must be provided with a ladder or an equivalent means of safe access.

L. The poles, legs, or uprights of scaffolds are to be plumb, securely and rigidly braced to prevent swaying and displacement.

M. All scaffolds are to be tagged-out with a "Danger" tag during erection and dismantling to warn others that the scaffold is not to be used.

a. Materials hoisted onto or near scaffold must have a tag line.

b. Employees cannot work on scaffolds located outdoors during high winds or storms, unless they are tied-off and working only under the specific direction of a competent person.

c. Tools, material, or debris is not allowed to accumulate excessively on scaffolds.

d. Working on scaffolds covered with ice, snow, or other slippery material is prohibited.

e. All guidelines associated with the clearance between scaffolds and power lines must be followed at all times. The minimum is 3’ for less than 300 volts insulated line and the minimum is 10’ for insulated lines up to 50kv. Never less than 10’ for un-insulated lines of any voltage.

f. Employees cannot stand, climb, or sit on the guardrails nor can ladders, crates, buckets, or other objects be used to raise the working level of the scaffold deck.

g. The placement of scaffold planks through the ladder rungs on patent scaffold section to provide a work bench is permissible provided:

I. The scaffold deck is fully planked.

II. All open sides of the scaffold work deck are provided with guardrails.

- **TRAINING**

A. Every worker on a scaffold must receive training by a competent person on the scaffold being used, including (fall electrical, falling objects), fall protection use and load capacity.

B. Every worker who erects, dismantles, moves, or maintains a scaffold must be trained by a competent person.

C. Retraining needs to be done as necessary. Retraining is required in at least the following situations:

   a. Where changes at the worksite present a hazard about which an employee has not been previously trained.

   b. Where changes in the types of scaffolds, fall protection, falling object protection, or other equipment present a hazard about which an employee has not been previously trained.

   c. Where inadequacies in an affected employee's work involving scaffolds indicate that the employee has not retrained the requisite proficiency.

• TUBULAR WELDED FRAME SCAFFOLDS (Additional Requirements)

A. Scaffolds are to be properly braced by cross, diagonal, or horizontal bracing, or all three for securing vertical members laterally. The cross braces are to be of such length which will automatically square and align the vertical members so that the erected scaffold is always plumb, square and rigid. All brace connections must be made secure.

   a. The mixing of different manufactures frames, brackets and other hardware is prohibited.

   b. Scaffolds exceeding 125' in height must be designed by a registered professional engineer. Copies of the design documents should be maintained on site.

B. Scaffold legs are to be set on adjustable or plane bases and placed on mudsills or other firm foundation to adequately support the maximum rated load.

C. The frames/sections are to be set one upon the other utilizing couplings or stacking pins to provide proper vertical alignment of the legs.

D. Where uplift may occur, panels/sections must be locked together vertically by pins, or equivalent means.

E. Scaffolds greater than 4:1 (height to width) must be restrained from tipping by guying, tying, bracing, outriggers, or other equivalent means (review OSHA regulations).

F. Standard guardrails and toe boards should be installed in accordance with paragraphs 1.3 of this

section.

- **MOBILE (ROLLING) SCAFFOLDS (Additional Requirements)**

A. The platform must not extend past the base supports unless outrigger frames or equivalent devices are used to ensure stability.

B. Casters are to be capable of supporting 4 times the maximum intended load and be equipped with a positive locking device.

C. Rolling scaffolds must be erected plumb and properly braced using cross bracing and horizontal bracing. All locks and pins are to be installed.

D. Platforms must be tightly planked the full width of the scaffold and the planking secured from movement.

E. Standard guardrails and toe boards should be installed in accordance with paragraphs 1.3 of this section.

F. The force necessary to move the scaffold must be applied near or as close to the base as possible. Scaffolds shall only be moved on level floors free of obstructions and holes.

G. Scaffolds in use by any persons must rest on a suitable footing and stand plumb. Casters or wheels must be locked except when the scaffold is being moved. Caster stems need to be secured.

H. Scaffolding that is 40" or less in width may only be used to a height of 6'. When work is required above 6' Paric recommends the use of light weight scissor lifts.

- **AERIAL LIFTS**

A. Aerial lifts include the following types of vehicle-mounted aerial devices used to elevate personnel to work areas above ground: extensible boom platforms, aerial ladders, articulating boom platforms, scissor lifts, or any combination thereof. Lifts may be constructed of metal, wood, fiberglass reinforced plastic, or other material and may be powered or manually operated. Common names are JLG, manlifts, bucket trucks, etc.

B. Aerial lifts cannot be modified unless approved in writing by the manufacturer.

C. Work around live electrical lines should only be performed with equipment rated as dielectric.

   a. The insulated portion of any aerial lift cannot be altered in any way.

D. Only authorized, trained personnel may operate an aerial lift.

a. Prior to initial use on each shift, all controls must be tested to determine their safe working condition.

b. Employees must observe and not exceed the boom or basket's recommended load limits.

c. Booms and platforms must always be lowered for travel.

d. All aerial lifts must have a back up alarm or the use of a spotter when backing.

e. The brakes are to be set and the outriggers deployed, if the aerial lift is so equipped, prior to extending the boom or raising the work platform.

I. Outriggers must only be deployed on solid, stable surfaces. When necessary, cribbing which is wider than the widest width of the rigger base or shoe must be placed under the outrigger to provide a solid, stable footing.

II. Employees are prohibited from removing or disabling aerial lift outriggers.

III. Wheel chocks are to be installed before using an aerial lift on an incline, provided they can be safely installed.

E. Work within 10' of live electrical lines can only be performed by properly trained and equipped employees; otherwise, wires will be covered and/or de-energized and grounded.

F. Employees are to close and secure the platform's gate or chains prior to raising the platform.

G. Employees should always stand securely on the floor of the platform and not sit or climb on the edge or railing.

a. The use of ladders, planks, or other objects to gain additional height on the platform is prohibited.

b. Employees are required to tie-off to the platform's railing or boom with a safety harness and lanyard.

c. Tying-off to structures outside the basket or platform is prohibited.

d. Employees should only enter and exit the platform from the lowered position.

•OTHER SCAFFOLDS

A. For guidelines and safety requirements for various types of scaffold refer to the OSHA Appendix A in OSHA Subpart L, as well as the main requirements in 1926.452.

B. All suspended scaffolds must be erected, used, maintained and dismantled in accordance with OSHA 1926.451(d) criteria for suspension scaffolds.

STAIRWAYS AND LADDERS

- GENERAL REQUIREMENTS

A. A stairway or ladder is to be provided at all personnel points of access where there is a break in elevation of 19” or more, and no ramp, runway, sloped embankment, or personnel hoist is provided.

B. Employee cannot use any spiral stairways that will not be a permanent part of the structure on which construction work is being performed.

C. A double-cleated ladder or two or more separate ladders are to be provided when ladders are the only means of access or egress from a working area for 25 or more employees, or when a ladder is to serve simultaneous traffic, two-way traffic.

D. When the building or structure has only one point of access between levels, that point of access is to be kept clear to permit the free passage of employees. When work must be performed or equipment must be used such that free passage at that point of access is restricted, a second point of access needs be provided and used.

E. When a building or structure has two or more points of access between levels, at least one point of access needs to be kept clear to permit free passage of employees.

F. All required fall protection devices for stairways and ladders shall be installed prior to use of such devices for access to other levels.

- STAIRWAYS

A. Temporary and permanent stairways are to be erected in accordance with the following standards.

a. Stairway landings at least 30" long in the direction of travel and 22" wide will be provided for every 12 ‘ or less of vertical rise in the stairway.

b. Stairs are to be installed between 30 degrees and 50 degrees from horizontal.

c. Riser height and tread depth must be uniform within each flight. Variations in riser height and tread depth cannot be more than ¼” in any stairway system.

d. Where doors or gates open directly on a stairway, a platform is to be provided and the swing of the door or gate must not reduce the effective width of the platform to less than 20 inches.

e. When metal pan stairs are used as the means of access from floor to floor solid material will be installed in the pan steps to prevent a tripping hazard.

f. All parts of stairways are to be free of hazardous projections, such as protruding nails.

g. Slippery conditions on stairways must be eliminated before the stairway is used to reach other levels.

B. Temporary Service

a. Except during stairway construction, foot traffic (except by those involved in the stairway's construction) is prohibited on stairways with pans stairs where the treads and/or landings are to be filled at a later date, unless the treads and landings are filled with wood or other solid material at least to the top edge of the pan.

b. Except during stairway construction, foot traffic (except by those involved in the stairway's construction) is prohibited on skeleton metal stairs where permanent treads and/or landings are to be installed at a later date, unless the stairs are fitted with secured temporary treads and landings long enough to cover the entire tread and/or landing area.

c. Treads for temporary service are to be made of wood or other solid material and installed the full width of the stair.

C. Stair rails and Handrails

a. Definitions

I. Handrail: A rail used to provide employees with a handhold for support.

II. Stair rail system: A vertical barrier erected along the unprotected sides and edges of a stairway to prevent employees from falling to lower levels. The top surface of a stair rail may be used as a handrail.

b. Stairways having four or more risers or rising more than 30”, whichever is less, are to be equipped with at least one handrail and one stair rail system along each unprotected side. However, when the top edge of the stair rail also serves as a handrail, subsection 2.3.5.1 of this section applies.

c. The height of stair rails cannot be more than 36 inches from the upper surface of the stair rail system to the top of the tread, in line with the face of the riser at the forward edge of the tread.

d. Mid rails, screens, mesh, or equivalent are to be provided between the top rail of the stair rail system and the stairway steps.

I. Mid rails are to be located at a height midway between the top edge of the stair rail system and the stairway steps.

II. Screens or mesh must extend from the top rail to the stairways steps and along the entire opening between top rail supports.

e. Handrails cannot be more than 37” or less than 30” in height from the upper surface of the handrail to surface of the tread, in line with the face of the riser at the forward edge of the tread.

I. When the top edge of a stair rail system also serves as a handrail, the height of the top edge cannot be more than 37” nor less than 36” from the upper surface of the stair rail system to the surface of the tread, in line with the face of the riser at the forward edge of the tread.

f. Handrails and the top rails of stair rail systems must be capable of withstanding, without failure, a force of at least 200 pounds applied within 2” of the top edge, in any downward or outward direction, at any point along the top edge.

g. Stair rail systems and handrails are to be so surfaced as to prevent injury to employees from punctures or lacerations, and to prevent the snagging of clothing. The ends of stair rail systems and handrails cannot constitute a projection hazard.

h. Temporary handrails must have a minimum clearance of 3” between handrails and walls, stair rail systems and other objects.

i. Unprotected sides and edges of stairway landings shall be provided with standard guardrail system.

- LADDERS

A. All ladders must be capable of supporting 4 times the maximum intended load. Portable manufactured step and extension should be rated extra-heavy-duty type 1A (300lb). and sustain 3.3 times the maximum intended load.

a. Portable manufactured ladders constructed of wood and fiberglass or metal are generally acceptable for all work applications, however, some owners prohibit the use of metal ladders on their premises. Check the project's specifications prior to using metal ladders.

b. Job-built ladders must be designed and constructed by a competent person in accordance with all ANSI safety standards.

B. Care and Maintenance

a. Ladders are to be maintained free of grease, oil and other substances, which could cause a loss of handholds or footing.

b. Wood ladders cannot be coated with paint or other coatings, which would mask defects.

c. All ladders are to be inspected prior to use for missing, broken, or corroded hardware and cracked or broken side rails or rungs and other weakening conditions or defects.

I. Portable ladders with structural defects are to be immediately removed from service, rendered unusable and disposed of.

II. Fixed ladders and job-built ladders are to be immediately removed from service and not used until repaired.

C. Ladder Erection

a. Ladders should only be used on stable, level surfaces unless secured to prevent accidental displacement.

b. Ladders are to be secured at the top or bottom and/or held by a ground man to prevent accidental displacement.

c. Ladders cannot be used on slippery surfaces unless secured from movement or equipped with slip resistant feet; however, the use of slip resistant feet is not to be a substitute for assuring the ladder's stability through proper placement, attachment, or by a ground man.

d. Ladders erected in high activity and traffic areas such as: doorways, hallways, and driveways are to be anchored or held to prevent displacement, furthermore, the area around the base of the ladder must be barricaded to direct traffic away from the ladder.

e. Upper and lower landing areas are to be made and maintained free of trip and fall hazards. Stored materials, debris, extension cords, welding leads, and hoses, must be kept clear of the walking and climbing areas.

f. Ladders manufactured with non-conductive side rails (e.g. fiberglass) are to be employed whenever there is the potential for the ladder or its occupant to come into contact with electrical circuits.

g. Ladders cannot be used as pick boards.

h. Step ladders are to only be used in a fully opened and locked position. The use of stepladders erected in a straight ladder configuration is prohibited.

i. Step ladders cannot be used to gain access to or exit onto other working levels such as upper floors, roofs and the top of equipment.

j. Manufactured straight and extension ladders and job built ladders must be erected at an angle such that the horizontal distance from the top support to the foot of the ladder is approximately one-quarter the working length of the ladder (the distance along the ladder between the foot and the top support). This is a ratio of 4 vertical to 1 horizontal (4:1).

I. Job built ladders with spliced side rails must be erected at an angle such that the horizontal distance from the top support to the foot of the ladder is approximately one-eighth the working length of the ladder (the distance along the ladder between the foot and the top support). This is a ratio of 8 vertical to 1 horizontal (8:1).

k. When a manufactured straight or extension ladder or job built is used to access upper landing areas such as roofs or upper floors, the side rails of the ladder are to be secured and extend at least 3’ above the upper landing surface. When the ladders length does not permit its side rails to reach beyond the top landing surface the ladder must be secured at the top and a system should be provided to assist employees with accessing and exiting the ladder.

l. All manufactured straight or extension ladders or job built being placed to provide extended access to upper landing areas must be secured at the top to prevent displacement.

m. Hoist lines should be affixed adjacent to the ladder whenever possible for the hoisting and lowering of tools and materials.

D. Ladder Use

a. Employees must only climb or descend in a position that faces the ladder. Employees must use at least one hand while climbing or descending. Employees must maintain three points of contact at all times. Sliding down the side rails is prohibited.

b. The carrying of tools, materials and other items up and down ladders is prohibited unless such items are hung from the waist or slung over one shoulder, provided the item(s) being carried neither block the employee's view of the top of the ladder or impair employees ability to climb the ladder in a safe manner.

c. Ladders cannot be moved, shifted, or extended while occupied.

d. Employees using ladders as work platforms need to tie-off when possible to a secure anchorage located at or above the waist when the fall exposure is 6’ or greater as measured from the waist. Tie-offs may be made to ladders provided the ladders are securely anchored at the top.

e. Employees need to confine their work activities to within an arm's reach beyond the ladder’s side rails. Leaning beyond the side rails or straddling between the ladder and an adjacent foothold or handhold is prohibited.

f. Standing on the top two rungs of ladders and/or on top of the rear cross brace of step ladders is prohibited.

g. Climbing or standing on a stepladder's rear cross bracing is prohibited.

h. Straddling the tops of step ladders (standing with one foot on a step and another on a rear cross brace) is prohibited.

ELECTRICAL

- GENERAL PROTECTION REQUIREMENTS

A. No employee will be allowed to work on or in such proximity to any part of an energized electrical circuit that he may come into contact with it during the course of his work. The employee must be protected either by de-energizing and locking out the circuit or the use of proper protective equipment and tools. If we are going to work on energized electric then we must fill out the Energized Electrical Work Permit.

   a. During work operations, which require excavation, trenching, or the breaking, drilling, or cutting of concrete, the exact location of buried or embedded power circuits should be determined prior to starting of work. If the exact location is unknown, employees using hand tools (i.e., jack hammers, bars, shovels and power tools which may come into direct contact with an energized circuit) must be provided with insulated protective gloves.

B. Only qualified personnel are allowed to perform any type of electrical work.

C. All employees who face potential risk of electric shock in their respective job assignments will be trained and made aware of electric safety practices and necessary clearance distances regardless of qualifications.

D. Vehicular and Mechanical clearance distances of 10 feet will be listed and maintained. Any other necessary protective measures will be utilized.

E. Unqualified personnel must always maintain clearance distances of 10’ for 50kV plus 4” for every additional 10kV.

F. If work is being done under overhead lines, lines must be de-energized and grounded before work can begin.

G. When working on or near exposed de-energized parts or conductors which have not been locked out, they shall be treated as live.

H. All qualified personnel must always maintain the approach distances mentioned in Table S5 (shown below).

TABLE S5

Voltage Range (Phase To Phase)	Minimum Approach Distance
300V and less	Avoid Contact
Over 300V, not over 750V	1 ft. 0 in. (30.5 cm)
Over 750V, not over 2kV	1 ft. 6 in. (46 cm)
Over 2kV, not over 15kV	2 ft. 0 in. (61 cm)
Over 15kV, not over 37kV	3 ft. 0 in. (91 cm)
Over 37kV, not over 87.5kV	3 ft. 6 in. (107 cm)
Over 87.5kV, not over 121kV	4 ft. 0 in. (122 cm)
Over 121kV, not over 140kV	4 ft. 6 in. (137 cm)

I. Employees may not enter any space that contains exposed energized parts unless illumination is available that allows employees to work safely.

J. Work occurring in enclosed or confined spaces where potential electrical hazards may exist must employ the use of protective shields, barriers or insulating materials as needed.

K. Conductive items of jewelry or clothing shall not be worn unless they are rendered non- conductive by covering, wrapping or other insulating means.

- ELECTRICAL DISTRIBUTION AND LIGHTING SYSTEMS

A. Only qualified personnel/electricians can design, install and maintain temporary construction and permanent electrical distribution and lighting systems. Absolutely at no time will there be any exposure to open panels.

a. The use of portable gas-driven welding machines and generators and other truck mounted units are excluded from this requirement.

B. Ground Fault Protection

a. All 120-volt, 15- and 20-ampere receptacle outlets on construction sites which are not part of the permanent power wiring shall have approved ground fault circuit interrupters for employee protection or be subject to assured grounding tests.

b. Permanent electrical distribution systems used to provide electrical power for construction purposes need not be upgraded to provide ground fault circuit interruption protection, however, such work locations shall implement the Company's Employee Electrical Protection Program.

I. As a general rule, the Company requires all projects, regardless of location, to participate in the Employee Electrical Protection Program.

C. Temporary Lighting

a. Temporary lighting fixtures are to be equipped with bulb guards unless the bulb is deeply recessed inside the fixture's reflector.

b. Temporary lights should be equipped with heavy-duty electrical cords, with connections and insulation maintained in safe condition. Temporary lights cannot be suspended by their electrical cords, unless the cords and fixture are designed for suspension. Splices need to have insulation equal to that of the cable.

c. Cords and fixtures should not be located in such a manner in workspaces, walkways and other areas which could cause damage to the cords and fixtures or cause tripping or overhead hazards.

d. Portable, temporary lighting used in wet or hazardous locations, or in confined spaces, should be of an approved type which operate on 12 volts or less.

- ELECTRICAL POWER TOOLS, EQUIPMENT, AND EXTENSION CORDS

A. All 120-volt 15- to 20-ampere portable and fixed electrical tools and equipment shall be grounded through the use of a third wire in their electrical cord or double insulated.

B. All extension cords shall be of a three-wire type and rated for hard or extra hard use.

   a. The use of droplights as extension cords is prohibited.

C. Prohibited Items

   a. Extension cords constructed using hard wire (non-stranded Romex, BX, etc.) except when permanently installed.

   b. “Field-made” extension cords with duplex or four plex receptacle boxes.

   c. Employee owned power tools, equipment and extension cords except those required to be provided by collective bargaining agreements.

      I. All electrical tools, equipment and extension cords which employees are required to provide under collective bargaining must meet the requirements of this section.

D. Care and Maintenance of Tools and Cords

   a. All portable and fixed power tools, equipment, extension cords and droplights must be inspected prior to their first use of the shift for damage and defects.

      I. All defective and damaged electrical tools and equipment must be immediately removed from service, identified by the attachment of a Defective Tool tag and secured from employee access until returned to the appropriate party for repair or disposal.

      II. All defective or damaged extension cords and drop lights must be immediately removed from service, rendered inoperable by the removal of the male plug and properly disposed of.

      III. Making tape repairs to the cords or plugs of electrical devices and equipment, drop light and extension cords is prohibited.

      IV. Employees found using defective or damaged tools, equipment, extension cords and or droplights (including equipment owned by others) will be subject to disciplinary action.

   b. Signs of defect or damage.

      I. Tools, equipment, drop light cords and extension cords which have insulation which has been cut, burned, stretched, or frayed or where the cord's insulation has pulled away from the tool or the male or female plug are considered damaged or defective.

      II. Tools, equipment, drop lights and extension cords which have plugs with loose, missing, or deformed pins; loose contacts or loose or missing parts are considered damaged or defective.

      III. Tools, equipment, drop lights and extension cords which fail testing under the Company's

Assured Grounding Program for continuousness of the ground and/or polarity are considered damaged or defective.

c. Placement and care of electrical cords.

I. All cords need to be protected against accidental damage which may be caused by traffic, sharp corners, pinching in doors and placement under materials or equipment. Cords should either be covered or strung overhead to prevent damage to the cords or cause tripping hazards.

II. Only approved devices can be used to secure electrical cords in place. Cords are not to be hung on nails, suspended by un-insulated wire, or secured in place with staples.

III. Tool cords cannot be used to hoist or lower tools, nor can extension cords be used to hoist or lower attached tools or other materials.

IV. Extension cords and tool cords should not be allowed to lie in water.

- PORTABLE GENERATORS AND WELDING MACHINES

A. The use of portable and truck mounted gas-driven generators and welding machines to provide temporary electrical power is permitted.

B. All portable generators and welding machines are to be grounded at all times during their use. Grounds shall be made externally unless the equipment is internally grounded by manufacturer's design or truck mounted. All truck-mounted equipment must be designed for such use.

EMPLOYEE ELECTRICAL PROTECTION PROGRAM
GROUND FAULT CIRCUIT INTERRUPTERS
ASSURED EQUIPMENT GROUNDING CONDUCTOR PROGRAM
AND DAILY ELECTRICAL INSPECTIONS

- INTRODUCTION

A. The following sections (GROUND FAULT CIRCUIT INTERRUPTERS, have been prepared because OSHA Standard 29 CFR 1926.404 states that employers shall use either ground fault circuit interrupters as specified in paragraph (b)(1)(ii) of the standard or an assured equipment grounding conductor program as specified in paragraph (b)(1)(iii) of the standard. These requirements are in addition to other requirements for equipment grounding conductors. Paric will implement and use BOTH procedures.

B. Ground fault circuit interrupters (GFCIs) closely monitor any differences in current flow between the ground and neutral conductors, as low as fractions of a milliampere. When sufficient current leakage is detected the GFCI will break the electrical circuit.

C. Daily employee inspections of electrical cord sets and devices are essential to assuring employees are provided with cord sets and devices which are in good repair, thereby preventing injury to the employee and others from electrical shock.

D. It is the responsibility of the Project Management/ Supervision to:

a. Ensure the protection of employees (ground fault circuit interrupters & assured equipment grounding conductor program) is implemented for his/her work site.

b. Retain a copy of the written program at the work site and make the program available for employee review.

c. Assure daily employee electrical device inspections are performed.

d. Designate a competent person at the work site to administer the program and perform all tests and inspections as required.

- GROUND FAULT CIRCUIT INTERRUPTERS

A. Ground fault circuit interrupters are to be used on all 120-volt, single phase, 15-ampere to 20-ampere receptacles on construction sites, which are used by employees.

B. Temporary construction electrical receptacles may be installed with GFCI protection at the receptacle or at the temporary electrical breaker panel. Receptacle mounted protection is preferred.

C. In the event GFCI protection is not provided as part of the temporary construction electrical system employees shall use portable GFCIs in line between the receptacle and the cord set/cord and plug connected equipment.

D. Employees using receptacles which are part of a building's or structure's electrical system should use portable GFCIs in line between the receptacle and the cord set/cord and plug connected equipment.

E. Receptacles on two wire, single phase portable or vehicle mounted generators rated at less than 5kW, where the circuit conductors of the generator are insulated from the frame and all other grounded surfaces, do not require GFCI protection.

F. All ground fault circuit interrupters at the work site should be tested monthly to assure they are in proper working order. It is the responsibility of the project manager/supervisor to obtain a GFCI/receptacles circuit tester and to assign a competent person to perform the testing.

- DAILY ELECTRICAL INSPECTIONS

Each employee must visually inspect his/her electrical tools and cord sets for the following conditions:

A. Proper functioning of the ground fault circuit interrupter (GFCI).

B. Loose or missing ground pins on cord sets and equipment cords.

C. Torn or stretched insulation and exposed conductors.

D. Broken or cracked plugs and receptacles.

E. Faulty strain relief devices.

F. The general condition of the equipment device including missing or defective guards.

Any cord set or electrical tool, which is found to be defective, is to be brought to the attention of the employee's immediate supervisor. The supervisor must immediately remove the defective cord set from service by either:

A. Tagging the electrical tool (small power tools) with a "Defective Tool" tag, removing and placing the equipment under lock and key.

B. Tagging the electrical tool (large power equipment) with a "Defective Tool" tag and rendering the tool inoperable by removing the plug from the power cord.

C. Rendering cord sets (extension cords and drop lights) inoperable by cutting the cord (de- energized) and disposing of the cord set in the trash.

LOCK-OUT AND TAG-OUT

- PURPOSE

To ensure the safety and health of Paric employees and others during the performance of construction and maintenance work on process systems by establishing a procedure for isolation and securing a system of energy sources thereby:

A. Preventing the unexpected operation of systems during construction and maintenance operations.

B. Preventing the unauthorized operation of systems prior to turn-over to the owner.

C. Periodic inspections of the energy control procedure must be conducted at least annually to ensure that the procedure is being followed by the Safety Director or other qualified person. A certified review of the inspection will be documented.

D. Following the application of lockout or tagout devices to energy isolating devices, all potentially hazardous stored or residual energy shall be relieved, disconnected, restrained & otherwise rendered safe. If there is a possibility of reaccumulation of stored energy level, verification of isolation shall be continued until the servicing or maintenance is completed, or until the possibility of such accumulation no longer exists.

- IMPLEMENTATION

A. This procedure is written to provide general guidelines for locking-out equipment during construction, start-up and testing and maintenance operations. All equipment shall be locked primarily to protect against accidental or inadvertent operation when such operation could cause injury to personnel. Electrical rooms need to be isolated or secured as soon as possible. Electrical rooms over 600 volts, must be secured and controlled by lock and key or other equivalent means. Do not attempt to operate any switch, valve, or other energy-isolating device when it is locked. Tags will be used secondarily to further safeguard people in addition to locks.

B. This procedure is applicable during:

a. New construction activities when system construction has progressed to a point that a portion of the system can be mechanically or electrically activated.

b. System start-up and testing operations, if further work must be performed on a system in order

to prepare it for turn-over to the owner.

c. Maintenance and repair operations, if there exists the possibility of unauthorized or unintentional system activation while service personnel are performing work on the system.

- PROCEDURE

A. Definitions

a. ACTIVATION POINT - A valve, switch, breaker, gate or other device used to control/isolate system energy sources.

b. LOCK - A keyed padlock manufactured of materials of substantial strength to prevent removal except by the use of excessive force of tools such as bolt cutters.

c. LOCK BOX - A metal box used as an alternative lock-out point when actual lock-out point cannot accommodate the placement of several locks and tags. Keys from the initial lock-out are placed in the lock box and the locks and tags of others are placed on the lock box.

d. HASP - A metal device used to secure an activation point and able to accommodate the placement of several padlocks and tags.

e. TAG OR DANGER TAG - A 3" x 5" or larger tag imprinted with the words "DANGER - DO NOT OPERATE". The tag is provided with blank spaces for writing the name of the person placing the tag and the time and date the tag was placed. The reverse side of the tag has an area designated for remarks. Process system owners may designate the appropriate style of tag to be used on their premises.

f. SYSTEM and EQUIPMENT - Interchangeable terms, mechanical and electrical machinery and associated piping, wiring and activation points.

I. Start-up Unit refers to the organization which is authorized by the site owner, manager, or vendor to coordinate and/or perform the start-up and testing of systems.

II. Operations Unit refers to the owner's organization at existing plants, buildings and/or facilities which is responsible for the operation of systems and equipment and coordinating their shut-down and maintenance.

g. New Construction Activities

I. Normally, new construction activities are not affected by the hazards involved with a system's operation until portions of the system have been completed by being electrically energized and/or mechanically tied into existing power or process piping systems. At this point, it is essential that all completed activation points within the system be locked out to prevent unexpected energization, which could possibly cause personal injury and/or damage to the system.

II. Mechanical - As piping systems (i.e., steam, hydraulic, pneumatic, process, etc.) are tied into existing systems or are completed prior to start-up, all main distribution valves closest to the tie in shall be chained and locked in the closed position and tagged. The valves should

remain locked until system start-up and testing begins. If any valve must be unlocked for any reason, the Supervisor must notify the Start-up Unit and all other contractors involved in the system's construction so that the activity can be coordinated and conducted in a safe manner.

III. Electrical - Prior to the start of electrical work on the system(s), a lock-out agreement needs to be established with the electrical contractor and Start-up Unit in order to prevent electrical equipment within the systems, from being electrically energized once electrical circuits and their feeder circuits have been completed. The agreement should stipulate that once the circuits are completed, their disconnects must be locked out in the off position and tagged. The disconnects should be kept locked until start-up and testing begins. If a circuit disconnect must be unlocked for any reason, the electrical contractor must notify the Start-up Unit and all other contractors involved with the system's construction so that this activity can be coordinated and conducted in a safe manner.

IV. General

i. The Supervisor will be responsible for limiting access to the keys for locks used in the lock-out of the mechanical portion of the system. Locks and other isolating devices should be assigned individually and identified by color-coding or other unique means of identification.

ii. Prior to start-up and testing, the Project Manager, the Start-up Unit and the other contractors involved in the construction of the system should meet to set the groundwork for system turnover. This should include: determining the schedule for start-up and testing, the procedure for changing over contractor locks and tags for those of the Start-up Unit, coordinating the use of craft personnel during the start-up and testing process and notification of employees when system start-up and testing is in progress.

iii. All personnel involved with work on the system must receive training concerning the use of the procedure. The proper completion and the placement of tags must be emphasized. In the event a tag is placed without a lock, the tag must stand as an order not to operate or engage that portion of the system regardless of whether it is locked or not. Persons violating a lock-out tag, whether or not injury or damage results, are subject to disciplinary action and/or immediate termination.

a. Start-up and Testing Activities

I. Once a system has been energized for start-up and testing purposes, all further work on the system must be authorized by the Start-up Unit prior to the start of actual work. A written record may be required which states the piece of equipment or section of the system to be locked out, the dates and time of the lock-out, the work to be performed and the person(s) performing the work. Requests for lock- outs should be made well in advance of the requested work time so that minimal work delays will be incurred.

II. The Start-up Unit will obtain all necessary disconnects and, if necessary, have the system/equipment shut down. The Start-up Unit must place its own locks and tags at the lock-out points prior to the placement of any contractor locks and tags.

III. Each craftsman or his foreman must place his own lock and tag on the disconnect/valve.

IV. Once locks have been placed, the craftsman and Start-up Unit representative are responsible for checking equipment to insure that all possible activation points have been disabled. All start buttons, disconnect switches, and valves must be checked to insure activation is not possible. If there exists any doubt concerning the location of all possible activation points, the plans of the system or the manufacturer should be consulted.

V. Locks and tags should be removed at the end of each shift unless the work will take more than one day. Any work that will take more than one day should be stated on the tag. Upon the completion of work, the craftsman will remove the lock and tag. In all cases, the Start-up Unit's locks and tags are to be the first on and last off.

IX. When multiple shift crews work on the same unit, an orderly and well-document transfer of authority and responsibility will take place at, or before, shift changes by attachment of new tags, removal of old tags, changes in names, times, dates, etc.

X. Following the completion of work, the re-energizing of equipment and the opening of valves must be arranged through the Start-up Unit.

XI. Craft locks which are inadvertently or negligently left on equipment and valves which need to be operated can cause costly and time-consuming delays for personnel performing start-up and testing operations. If a lock has been left in this manner, the Start-up Unit is usually required to notify the responsible craftsman or his/her Supervision and request that the lock be removed. If this is not possible, the Start-up Unit representative(s) and the system/equipment operator must check the entire system to insure that it is safe to be energized and operated. At that point, the craft lock needs to be cut.

i. The forcible removal of a lock is a serious situation because it requires that all possible precautions be taken prior to the lock being cut. The seriousness of the situation will require the Start-up Unit representative to document and forward all pertinent information on to the responsible Project Manager/Supervision for investigation and corrective actions.

ii. The unauthorized removal of a lock and/or tag and the operation of the locked out equipment/system is considered a willful safety violation that can result in disciplinary actions, suspension, or immediate termination.

2. Maintenance Work Activities

I. Any lock-out/tag-out procedures within an operational plant or facility must be followed or (if deemed necessary) modified to adapt it to this procedure. Employee training should follow changes or institution of any procedural program. This includes following work permit procedures, as may exist within the plant or facility.

i. If an operational plant or facility does not have established procedures, the following should be negotiated with the operations unit, as necessary.

ii. Prior to starting work on or around any equipment, the craftsman or his/her Supervision must obtain authorization for lock-out from the operations unit or the owner's representative.

iii. The operations unit must obtain all necessary disconnects and shut any valves or open any circuits needed to de-energize the equipment or system and will place the first lock and tag on the disconnect.

iv. Supervision of each craftsman (if several craftsmen are to be working on the equipment) will place his own lock and tag on the equipment. If different crafts are to be working on the same piece of equipment (i.e., pipe fitters and electricians), each craft will be responsible for securing and locking the equipment.

v. Lock-outs must be removed at the end of the workday or work shift. If work will take more than one day, the tag must state the requirement.

vi. After locks have been installed, the operations unit and the craftsman will test the equipment for a zero rate of energy. This may include blanking lines, blocking and bleeding.

vii. More than one source of power may activate a system. Therefore, all sources must be locked out. If system plans are not available, the operations unit is responsible for identifying all energy sources. At this point, the test/check step becomes vitally important. If plant operations have overlooked an energy source, work must cease and the operations unit informed immediately.

viii. As each craftsman completes work, his lock is to be removed. The last craft to remove a lock must inform the operations unit that the equipment is ready to be returned to service. The lock placed by the operations unit will be the last to be removed.

ix. Only the operations unit may re-energize a piece of equipment.

x. If a lock is left on and the tag does not specify, the operations unit needs to contact supervision for lock removal. Only after a system walk-through by the operation unit and the craftsman or Supervision verifies that all work is complete and it is safe to re-energize the equipment, will re-energizing be done.

- ACTION REQUIRED

A. Any project whose activities involve employee exposure to the hazards of unanticipated start-up of equipment or discharge of product must adhere, at a minimum, to the guidelines specified above. It is anticipated that modifications to these procedures would be necessary to tailor them to specific situations or each project.

B. All employees must be made aware of the requirement to follow this procedure or other approved project lock-out procedure precisely. Failure to do so is an offense subject to disciplinary action, since such negligent actions carry the possibility of causing serious personal injury.

C. Any/all training or retraining must be documented, signed and certified.

FIRE PROTECTION AND PREVENTION

- FIRE PROTECTION

A. Project Fire Protection Plan

a. The project should develop a written fire protection plan, which needs to be posted in the company field office and in areas where it will be available for employees to review. All employees should be made aware of this plan.

B. Fire extinguishers and/or other approved firefighting equipment stationed on job sites need to exist in sufficient numbers and be of an appropriate type to provide adequate fire protection coverage for existing and anticipated fire hazards. All fire extinguishers shall be fully charged, conspicuously located and easily accessible. An unobstructed path must be maintained to all available firefighting equipment at all times.

a. It is recommended that fire extinguishers for other than general building protection be a minimum of a 10 lb., multipurpose dry chemical type.

b. The use of carbon tetrachloride and soda acid fire extinguishers is prohibited.

c. Pressurized water fire extinguishers may be used for general building protection. This type of extinguisher is of a class 'A' rating and is intended for fighting trash and wood fires.

d. Fire Extinguisher Locations

I. Protected building areas need at least one class 2A fire extinguisher for every 3000 square feet. The travel distance from any point within the protected area to a fire extinguisher cannot exceed 100 feet.

II. In multi-story buildings, a minimum of one class 2A extinguisher must be provided for each floor. An extinguisher should always be located next to the stairwell.

III. A class 10ABC extinguisher must be located within 50' of work operations where 5 or more gallons of flammable or combustible liquid or 5 or more pounds of flammable gas are in use.

IV. A class 20ABC extinguisher must be located outside of, but not more than 10' away from the door of a room where 60 or more gallons of flammable or combustible liquid is stored.

V. An extinguisher, rated not less than 2A, must be located in all open yard storage areas. The travel distance to an extinguisher should not exceed 100 feet.

VI. A class 20ABC extinguisher must be located not less than 25' nor more than 75' from an outside storage area for flammable liquids.

VII. A 10 lb. class ABC extinguisher must be located within 50' of storage areas for flammable gas cylinders.

VIII. A 10 lb. class ABC extinguisher must be located within the immediate area of all welding, cutting/burning operations.

IX. A 20 lb. class ABC extinguisher must be located within 75' of all vehicle and equipment refueling and service areas.

X. A 10 lb. class ABC extinguisher must be located in each job site trailer.

XI. All fire extinguishers which are in use in construction areas need to be inspected on a regular basis, as well as each month as a minimum. Inspect to ensure it is fully charged, has an unobstructed hose and nozzle and is in good repair. The inspection tag attached to the extinguisher should be dated and initialed by the person performing the inspection.

XII. All discharged or damaged extinguishers must be replaced immediately. The recharging and repair of extinguishers can only be performed by a licensed service.

XIII. Employees should be periodically trained to recognize fires by type and in the proper selection and use of fire extinguishers during weekly safety talks.

- Training and Education

The purpose of this section is to establish training procedures which are necessary for the proper use and understanding of a fire extinguisher and incipient stage fire fighting. Training will occur prior to initial assignment and at least annually thereafter.

On even numbered years this training will be conducted by a member of the local fire department (where possible) and will include "live fire" hands on use of the extinguisher. On odd number years this training will be conducted by the Safety Manager and will include a demonstration of the use of a fire extinguisher, without actually discharging the unit.

New employees will be given the odd number year training upon hire.

A. Initial Training Outline

- General principles of a fire
- Hazards employed with an incipient stage fire(s)
- When to "back off' (evacuate) of an incipient stage fire(s)
- General fire principles of a fire extinguisher
- Hazards employed with the use a fire extinguisher
- Use of a fire extinguisher

B. Retraining

a. Retraining shall reestablish employee proficiency and introduce new or revised control methods and procedures, as necessary. Retraining shall be provided for all authorized and affected employees whenever there is:

- An annual basis or

- A change in job assignment or
- COMPANY has reason to believe that there are deviations from or inadequacies in the employee's knowledge or use of fire extinguishers or fire prevention procedures.

C. Training Documentation

All training will be documented and each employee's understanding will be subject to a "hands-on" test. Documentation will consist of; as a minimum, the employee's name, the trainer's name, the date of the training, and an outline of training provided.

D. Maintenance

a. All fire extinguishers shall be mounted no higher and no lower than four (4) feet from the floor. All fire extinguishers shall be maintained as follows:
b. Numbered to identify their proper location
c. Fully charged and in operable condition
d. Clean and free of defects
e. Readily accessible at all times

E. Inspection, Maintenance and Testing

a. All fire extinguishers are to be visually inspected by PARIC employees monthly. All fire extinguishers are to receive an annual maintenance check by certified personnel from a fire extinguisher dealer. Fire extinguishers are to be inspected and re-charged by certified personnel after any use.

b. Any fire extinguisher that shows a loss of pressure during the monthly inspection will be inspected and re-charged by certified personnel. Completed fire extinguisher inspection logs will be maintained in the safety files and become a part of the safety records. They are to be maintained for 5 years.

- FIRE PREVENTION

A. Maintaining an acceptable level of housekeeping is essential to eliminating fire hazards.

a. Combustible trash and debris should be removed daily.

b. Metal containers, which are provided with lids, should be used for the disposal of rags and other such materials, which are used for application or removal of grease, oil, adhesives, etc. When such containers are kept indoors, they should be emptied daily.

c. Non-compatible materials must be segregated in storage.

B. Work operations, which involve welding, gas cutting, or the use of tools and equipment which produce sparks or heat require special attention.

a. All combustible materials should be removed from work areas where any of these work operations are being performed.

b. A fire watch should be posted in areas where the potential for fire exists including lower floors and ground level when there exists the possibility of slag and sparks falling to lower elevations. The workers performing the fire watch need to be instructed to inspect all such areas and remain on duty not less than 1/2 hour after the completion of work.

c. Situate internal combustion engines, so their exhaust outlets are well away from combustible materials.

d. Hot work, welding, open flame and/or sparking tool permits (when applicable) will be required prior to the actual start of work. Check with the owner regarding procedures for the issuance of such permits.

C. Smoking or open flames are prohibited in the vicinity of potential fire hazards (e.g., fueling areas, flammable material storage areas, etc.). All such areas must be posted "No Smoking or Open Flames."

D. Temporary heaters should only be used after consideration is given to flammability hazards in the area. Combustible materials must be kept at least 20’ away from temporary heaters.

E. All electrical installations, temporary or permanent, must comply with the National Electric Code. Except for temporary electrical installations made to installed outlets (e.g., extension cords, power tools, drop lights, etc.). Electrical installations and inspections must be performed by a competent electrician.

F. Temporary Buildings

a. Temporary buildings must be constructed and located in such a way as to not block or affect any means of access or egress, whether from itself or another building.

b. Temporary buildings located indoors, (e.g., tool cribs, storage rooms, etc.) must be constructed of materials with not less than a one-hour fire resistance rating.

c. Outside temporary buildings not used for the storage of flammable liquids or gases, should not be located closer than 10’ to another building or structure.

- FLAMMABLE AND COMBUSTIBLE LIQUIDS

A. Great caution and care must be used in the handling and storage of flammable and combustible liquids in order to lessen the fire hazards associated with their presence on the job site.

B. Handling and Use

a. Only approved containers should be used for the handling of flammable and combustible liquids.

I. Use only UL approved metal safety cans for the handling of flammable and combustible liquids in quantities less than five gallons. Safety cans have self-closing, spring-loaded, vented lids and internal flash arresters. All cans must be plainly labeled with their contents in accordance with the Company's Hazard Communication Program,

II. Original manufacturers' containers or approved metal safety cans may be used for handling flammable or combustible liquids in quantities of one gallon or less.

III. Original shipping containers may be used for handling flammable or combustible liquids which are highly viscous (hard to pour), such as: adhesives, gasket compounds, grease, etc., with no concern as to the quantity being handled.

b. Handling at Final Point of Use

I. Flammable liquids must be kept in closed containers when not in actual use.

II. Leakage and spillage need to be cleaned up immediately with approved materials and must be promptly and safely disposed of in accordance with the manufacturer's Safety Data Sheet (SDS).

III. Flammable liquids must never be used within 50’ of an open flame or other ignition source. If conditions warrant, greater clearance should be given.

c. General Storage Requirements

I. Flammable and combustible liquids can only be stored in approved containers or portable tanks.

II. Never store flammable liquids in areas used for stairways, exits and personnel passageways.

C. Indoor Storage

a. No more than 25 gallons of flammable or combustible liquid may be stored in a room outside of an approved storage cabinet.

b. Storage Cabinets

I. Quantities of flammable or combustible liquids in excess of 25 gallons must be stored in approved storage cabinets.

II. Do not store more than 60 gallons of flammable liquid or 120 gallons of combustible liquid in any one cabinet.

III. No more than 3 cabinets can be located in a single storage area.

IV. Approved storage cabinets must be constructed to meet or exceed OSHA specifications, 29CFR 1926.152.

V. Approved storage cabinets need to be conspicuously labeled "Flammable - Keep Fire Away.

c. Inside Storage Rooms

I. Quantities in excess of those allowed for safe storage in an approved storage cabinet need to be placed in an inside storage room.

II. Inside storage rooms must be constructed and equipped to OSHA specifications, 29CFR 1926.152.

III. Materials which react with water to create a fire hazard cannot be stored in the same room as combustible or flammable materials.

IV. At least one unobstructed aisle with a minimum width of 3’ must be maintained in each inside storage room.

V. Containers with over 30 gallons of capacity must not be stacked one upon the other.

D. Outside Storage

a. Do not place containers or portable tanks used for the storage of flammable or combustible liquids closer than 20’ to a building or structure.

b. Storage areas shall either be graded to divert possible spills away from buildings and exposures or surrounded by a curb or earthen dike at least 12” in height, with provision made for draining spilled liquids under fire conditions.

c. Storage areas need to be kept free of weeds, debris and all combustible materials not necessary to the storage area.

d. A 12’ wide access way must be located within 200’ of each container storage pile and each portable storage tank to allow for the approach of firefighting equipment.

E. Storage Containers (Drums and Barrels)

a. Storage containers are approved drums or barrels which do not exceed 60 gallons in total capacity.

I. A group or pile of storage containers cannot exceed 1,100 gallons in combined capacity.

II. Groups or piles of storage containers cannot be located closer than 5’ to one another.

b. Portable Storage Tanks

I. When two or more storage tanks are grouped together and have a combinedcapacity in excess of 2,200 gallons, they must be separated by a 5’ clear area. Individual tanks which exceed 1,100 gallons capacity must be separated from other storage tanks and containers by a 5’ clear area.

II. All portable tanks need to be equipped with approved emergency venting devices.

F. Dispensing Liquids

a. Protect all dispensing units (portable tanks, containers and hose stations) from collision damage.

b. Dispensing devices and nozzles must be of an approved type.

c. When flammable liquids are transferred from one container or tank to another container or

tank the two need to be electrically bonded (grounded to each other).

d. The transfer of flammable or combustible liquids should only be accomplished by the use of:

I. A closed piping system,

II. An approved safety can, or

III. A gravity fed or pump system equipped with a self-closing valve when dispensing from a container or portable tank.

e. Areas used for the dispensing of flammable liquids in quantities greater than 5 gallons at one time shall comply with OSHA specifications. (See 1926.152.)

- REFUELING AREAS

A. Employees entering refueling areas must observe and obey all posted warnings (e.g., "No Smoking - Shut Your Engine OFF").

B. Arrangements are to be made with job site fuel suppliers to insure their tank trucks are in compliance with Department of Transportation and local ordinances for transporting and dispensing of fuels. It may be necessary to acquire permits for such activities.

C. The placement and use of on-site refueling areas shall comply with OSHA specifications. (See 1926.152).

PROJECT FIRE PROTECTION PLANNING GUIDE

•PURPOSE

A fire can have a catastrophic effect on a construction project. Losses due to personal injury, damaged materials, rework and schedule slippages are rarely regained. A well planned fire protection program which is flexible to the changing needs of the job site and enforced on a daily basis is the best defense against construction fire losses.

•GENERAL

A. The project must implement a written fire protection plan, which is to be developed by the Project Manager and the Project Supervisor. The plan must be developed in accordance with CFR 1926.150 and other applicable state and local laws and ordinances. The plan is to encompass work performed by the company and its subcontractors.

B. The Project Manager must define and make provisions for the following:

   a. GENERAL FIRE PROTECTION - systems and procedures prescribed by the jobsite owner, or the Company for fire protection and prevention for the jobsite as a whole.

   b. WORK AREA/WORK OPERATION FIRE PROTECTION - systems and procedures prescribed by the owner or their agent for fire protection and prevention in specific work areas and for specific work operations which pose an increased threat of fire.

- GENERAL FIRE PROTECTION

A. General fire protection pertains to the project as a whole and addresses the need for equipment and procedures to prevent and control or extinguish larger fires. Such plans are usually established, administered and funded by the jobsite owner.

B. The fire protection equipment provided in these plans will be dependent on the physical location of the work. New construction will rely heavily on fire extinguishers and temporary hose stations while work in existing facilities may rely mainly on permanent hose stations and/or sprinkler systems, which are supplemented with temporary services.

   a. In buildings with permanent hose stations, training is required for employees to learn how to use the fire hose in the fire hose cabinet.

C. The general fire protection plan may also require the daily issuance of hot work/fire permits. These permits are usually issued on each shift in order to assure the inspection of work areas for potential fire hazards.

- WORK AREA/WORK OPERATION FIRE PROTECTION

A. Work area/work operation fire protection addresses the requirement for fire protection and prevention equipment and procedures in specified work areas and for specific work operations

which pose a greater risk of fire.

B. Specified work areas which pose a greater risk of fire because of the presence of combustible, flammable, or explosive materials, vapors, mists, or dusts may be governed by procedures mandating air sample testing and the possible use of specialized tools and equipment and the issuance of permits.

C. Specific work operations such as welding, torch cutting and the use of flammable or explosive materials may be governed by procedure. By law, welding and torch cutting, and the handling and use of flammable materials, may only be conducted if a multi-class fire extinguisher is present in the immediate work area. Additional protective devices and personnel for welding and torch cutting (e.g., welding screens and blankets and the posting of fire watches) may be required for additional personnel and property protection. Local ventilation and designated no smoking, sparking tools, or open flames signs are required in area's where flammable materials are stored, handled and used.

- USE OF FIRE EXTINGUISHERS

A. Fire extinguishers are the first line of defense against unfriendly fires. As soon as a fire is discovered, the fire department must be notified. Notification must never be delayed in hope that use of the extinguisher will be sufficient. Almost all fires are small at first and might be easily extinguished if the proper type and amount of extinguishing agent is applied. Portable extinguishers are designed for this purpose, but their successful use depends on the following.

   a. The fire extinguisher must be properly located, in proper working condition and of the proper type for the fire that occurs.

   b. The fire must be discovered while still small enough for the extinguisher to be effective and by a trained person who is ready, willing and able to use the extinguisher.

B. Instructions for the proper use of fire extinguishers are clearly visible on the front of the extinguisher. The following are "general" instructions, which would apply to extinguishers found on most projects.

   a. Hold extinguisher upright.
   b. Pull ring pin.
   c. Aim extinguisher at base of fire.
   d. Squeeze handle or lever.
   e. Sweep/Spray extinguisher from side to side.

C. In the event where the use of a fire extinguisher does not put out the fire, all employees must evacuate immediately according to site evacuation plan.

- PROGRAM DEVELOPMENT

A. Prior to the start of work, the project manager need to review all job specifications and procedures, which pertain to project fire protection and prevention. This should include conducting a coordination meeting with the owner to determine the owner's involvement in the plan and the party responsible (the owner or the company) for the enforcement of procedures, issuance of permits and notification of procedural changes. The meeting should also include a discussion of the availability and use of owner controlled fire protection equipment and a walk-through of the project

site with an owner's representative to determine the location of such equipment and availability for contractor use.

B. Once the availability of owner fire protection/prevention equipment has been determined and inventoried the project manager needs to determine the type and quantity of fire protection and prevention equipment to be supplied by the company.

C. Employees will use the permanent fire alarm in the building for notification purposes. In the event that a jobsite is not equipped with a permanent fire alarm, they are required to have an air horn onsite for notification purposes. The standard fire signal on all Paric jobsites should be 3 blasts from the air horn.

- PROGRAM COMPLIANCE

A. The Project Manager is responsible for ensuring procedural compliance. However, he may delegate the duties required by this procedure to an on site supervisor or engineer. The Project Manager or his designee is responsible for:

a. Requesting the issuance of permits.

b. Inspection of work areas to ensure employees have and use the proper fire protection equipment and that employee actions are in compliance with procedures.

c. Placing requests for additional fire protection equipment as needed in order to prevent work delays, and

d. Orientation and training of workers in the requirements of the job's fire protection and prevention requirements and evacuation plan and procedures.

- PROGRAM REVIEW

A. Each jobsite's fire protection plan needs to be reviewed as necessary to keep pace with:

a. Procedural changes made by the site owner or Company.

b. Changes in the work environment caused by the progression of construction activities and the completion of permanent fire protection systems.

c. The introduction or removal of potential fire hazards from the job site.

WELDING AND CUTTING

- GENERAL REQUIREMENTS

A. Fire Protection and Prevention

a. A fire extinguisher must be located within 50’ of all welding and cutting operations. The extinguisher should be located so that it is available for immediate use. All combustible materials need be removed from the immediate work area or otherwise protected by the use of fireproof tarps, welding screens, etc. Combustible materials need to be stored at a minimum of 35’ from any hot work operation.

b. When the welding, cutting, or heating operation is such that normal fire prevention precautions are not sufficient, additional personnel need be assigned to guard (fire watch) against fire while the actual work is being performed and for a sufficient period of time (a minimum of 1 hour) after the completion of work to insure that no possibility of fire exists. Such personnel should be instructed as to the specific anticipated fire hazards, how the firefighting equipment provided is to be used and emergency action plans.

c. Drums, containers, pipes, ducts, or hollow structures which have contained flammable or toxic substances must either be filled with water or thoroughly cleaned of such substances, ventilated and tested before welding, cutting, or heating is undertaken on them.

d. No welding, cutting, or heating operations can be done in any atmosphere which contains flammable, combustible, or explosive dusts, gases, mists, fumes, or vapors.

e. A system of controlling "hot work" must be established where necessary.

f. Assigned fire watchers must be trained in the use of fire extinguishing equipment and familiar with the facilities for sounding an alarm in the event of a fire. This person will know who to contact in an event of an emergency.

g. Welders and their supervisors must be suitably trained in the safe operations of their equipment and the safe use of the process. If welding cannot be conducted safely then the welding and cutting shall not be performed.

h. Hot work permits need to be approved by site superintendent with assigned competent person and designated fire watch. Prior to issuing hot work permit, Superintendent shall review site specific safety plan and Pre-Task Safety Assessment.

B. Personal Protective Equipment

a. Goggles or safety glasses should be worn under face shields during chipping, cleaning, or grinding of metals and welds.

b. Welders are to wear welding hoods during welding operations in order to provide full-face protection.

c. Welders should wear safety glasses with side shields under welding hoods to provide additional eye protection from flying sparks and popping slag.

d. Hearing protection should be worn while performing work in confined spaces. It is recommended that employees wear hearing protection during all welding and cutting operations, especially when working overhead, to prevent hot particles from entering the ear canal.

e. Eye protection with tinted, filtered lenses appropriate to the work is to be provided and worn by all employees engaged in welding, cutting and burning operations (including helpers). See table 1.2.5.1 for selection of filter lenses.

Table 1.2.5.1

FILTER LENS SHADE NUMBERS BY WELDING OPERATION

Soldering	2
Torch brazing	3 or 4
Light cutting - up to 1"	3 or 4
Medium cutting - 1" to 6"	4 or 5
Heavy cutting - over 6"	5 or 6
Gas welding (light) - up to 1/8"	4 or 5
Gas welding (medium)- 1/8" to 1/2"	5 or 6
Gas welding (heavy) - over 1/2"	6 or 8
Shielded metal arc welding - 1/16" to 5/32" electrodes	10
Gas-shielded arc welding (nonferrous) - 1/16" to 5/32" electrodes	11
Gas-shielded arc welding (ferrous) - 1/16" to 5/32" electrodes	12
Shielded metal arc welding - 3/16" to 1/4" electrodes	12
Shielded metal arc welding - 5/16" and greater electrodes	14
Atomic Hydrogen Welding	10 - 14
Carbon-arc welding	14

f. All welders and helpers should observe the following recommended protection:

I. Flame-resistant gauntlet gloves to be worn except when welder is engaged in light work (i.e., TIG, MIG) where light leather-work gloves may be worn. Light cotton and synthetic gloves are prohibited.

II. Flame-resistant aprons or coats and chaps of leather, or other suitable materials should be provided and worn as protection against radiated heat and sparks as needed. Fire resistant "leathers," sleeves, caps, or shoulder covers should be worn during overhead welding and cutting operations.

III. Clothing must be free of grease and oil.

IV. Clothing made of natural fibers should be worn - wool will not ignite as readily as cotton. The wearing of clothing made of synthetic materials (e.g., double knit, polyester, nylon, rayon, etc.) is prohibited because such material will readily burn or melt when exposed to

flame or heat.

V. Pockets on the fronts of vests, shirts and jackets should either be removed from the garment or be constructed with a flap and button which should be kept closed at all times. The legs of trousers should not be cuffed and should extend over boot tops. All of the areas listed above can catch and trap sparks and slag.

VI. High topped safety shoes are recommended. Low-cut shoes with unprotected tops are prohibited.

VII. Gloves should be worn during cleaning, chipping, grinding, wire brushing, etc., in order to protect hands and wrists.

C. Welding screens or other types of protection should be erected around welding work areas to protect employees/public from flying sparks and slag and ultraviolet rays produced during arc and shielded gas- welding operations.

D. Ventilation and Respiratory Protection

a. Welding and cutting operations may normally be performed in free air areas without the use of mechanical ventilation or the use of respiratory protection devices.

b. When welding and cutting operations involve materials with preservative coatings or exotic, toxic metals (e.g., stainless steel, zinc, cadmium, beryllium, lead, mercury, chromium, etc.), local exhaust ventilation or proper respiratory protection (filter respirators or air-line respirators) needs to be provided.

c. Welding and cutting operations performed in confined spaces (e.g., tanks, manholes, etc.) need to be provided with mechanical ventilation (provided it does not block the means of egress) or airline respirators.

- GAS WELDING AND CUTTING

A. Transporting, Moving and Storing Compressed Gas Cylinders

a. Gas cylinders should be stored outdoors when possible with provisions made for securing cylinders in an upright position. Storage areas need to be kept clear of combustible materials.

b. Oxygen cylinders are to be segregated from and stored at least 20’ away from fuel gas cylinders, petroleum products and other flammable material. Fuel gas cylinders may be stored adjacent to oxygen cylinders provided the two are separated by a 5’ high barrier with a 1/2-hour fire rating.

c. Empty cylinders may be stored with full cylinders. It is advisable to identify empty cylinders with tags or markings (e.g. "MT") to prevent double handling of the cylinders. Under no circumstances should empty oxygen cylinders be stored with fuel gas cylinders. Storage requirements are the same as those stipulated in paragraph 2.1.2.

d. Valve protection caps are to be in place and secured when cylinders are not in use.

e. When gas cylinders are hoisted, they are to be firmly secured to a pallet, sling board, cradle, welding cart designed for hoisting, or materials cage or basket. They are not to be hoisted or

transported by means of magnets, chokers, slings, or by their caps.

f. Cylinders, when moved by hand, should be tilted and rolled on their bottom edge. Laying cylinders on their side and rolling them is prohibited. Cylinders are not to be intentionally dropped, struck, or permitted to drop or strike each other in a violent manner.

g. Cylinders which are being transported by truck or other powered vehicle should be secured in an upright position. If it is necessary to transport cylinders on their side, cylinders, which have been transported on their side, must not be used prior to one hour after being returned to the upright position.

h. Fuel gas and oxygen cylinders are only to be used in a vertical position.

i. Cylinders should only be moved with their regulators removed and valve protection caps in place, unless the cylinders are firmly secured to a special carrier (cylinder cart) designed for such use.

j. Compressed gas cylinders must be secured in an upright position at all times, except, if necessary, for short periods of time while cylinders are being hoisted or carried.

B. Placing Cylinders

a. Cylinders must be kept far enough away from welding and cutting operations so that sparks, hot slag, or flame will not reach them, nor should they be placed where they may become electrically energized.

b. Cylinders are not to be taken into a confined space.

C. Treatment of Cylinders

a. Gas cylinders, whether empty or full, should always be treated as if they are full.

b. Damaged or defective cylinders shall not be used. Leaking cylinders shall be immediately moved to an outside area away from other cylinders and the job site. The vendor should be called immediately to pick up the defective cylinder.

c. Cylinders, whether full or empty, cannot be used as rollers or supports.

d. Welding, burning, brazing, etc., cannot be performed on a cylinder under any conditions. Electrodes shall not be struck against cylinders to strike an arc.

D. Hose

a. All gas hose should be inspected prior to its first use of the work shift for signs of damage, excessive wear and flashback. Defective hoses need to be immediately removed from use and tagged.

b. Hose couplings are not to be of the type that can be disconnected by means of a straight pull without a rotary motion.

c. Hoses and couplings are to be color-coded, reverse threaded, or otherwise noticeably different to prevent confusion and intermixing.

d. Flashback arresters should be incorporated at the hose/torch connection points. Additional arresters are recommended at the hose/regulator connection.

e. Boxes used for the storage of gas hose must be well ventilated.

f. Hoses, cables and other equipment must be kept clear of ladders, passageways and stairways.

g. Hoses must never be used to hoist their attachments or other objects.

E. Torches

a. Torches must be inspected prior to their first use of the work shift for leaking cutoff valves, hose couplings and tip connections. Defective torches should be immediately removed from service and tagged.

b. Clogged torch tips must be cleaned with suitable cleaning wires, drills, or other approved devices designed for such use.

c. Torches should be equipped with flashback arresters.

d. Torches may be repaired by employees, which have been trained by the manufacturer or its representative to make such repairs, provided the training approval has been documented.

e. Torches can only be lighted by friction lighters or other approved devices. The use of cigarette lighters, matches and hot work for lighting torches is prohibited.

F. Regulators and Gauges

a. Gas regulators and their gauges are to be in proper working condition while in use.

b. Gas cylinder valves should be "cracked" slightly open and immediately closed to remove any foreign substances from the valve prior to mounting it with a regulator.

G. Storage and Care

a. All regulators, hoses, attachments, etc., should be stored in such a manner to prevent damage.

b. Oxygen cylinders, regulators and fittings need to be kept clean from the accumulation of grease and oil.

H. Safety Precautions

a. Oxygen should never be used for cleaning purposes, nor should it be blown onto surfaces or materials covered with grease or oil.

b. Cylinder valves should not be opened more than 1-1/2 turns to allow for quick closing.

c. If a special wrench is required to open and close cylinder valves, the wrench must be kept in

place while the cylinders are in use.

d. The correct tool needs to be used to assemble the rig attached to the cart.

e. Cylinder valves should be closed and the pressure in the regulator released when cylinders are not to be used for an hour or longer.

f. Cylinders should be inspected prior to use by using soap and water, or leak detectors.

- ARC WELDING AND CUTTING

A. Only arc welding equipment and machines of an approved design can be used.

B. Power circuits should be professionally installed and inspected prior to use to insure proper voltage, amperage and grounds are available prior to use.

C. The frames of all welding machines need to be grounded to the machines source of electrical current. A wire in the cable containing the power lead, or through a separate wire may complete the ground circuit. All ground circuits must be inspected to insure they are mechanically strong and electrically adequate for the required current.

D. Arc welding cables are to be completely insulated, flexible, stranded type, capable of handling the maximum current requirements for the work in progress. Cable connections and splices can only be made with substantially insulated connectors or cable lugs to give good electrical contact, and all exposed metal parts are to be completely insulated. Insulation should be equal to or greater than the original insulation. Mechanical connections should not be able to be pulled apart by means of a straight-line pull.

a. Cables with insulation worn to the point that bare conducts are exposed should not be used until properly repaired. Insulation may be repaired by the use of rubber and friction tape or other equivalent insulation.

b. Cables should be routed as not to interfere with the safe passage of workers.

c. The ground lead for welding circuits should be mechanically strong and electrically adequate. The grounding cable should be attached as close to the work operation as possible to prevent arc, spark and heat generation at structural joints and pipe joints, which are not electrically sound. Pipelines, which contain flammable gas or liquid shall not be used as welding grounds.

E. Electrode holders are to be of an approved design capable of safely handling the maximum rated current required by the electrode. Insulation must cover all current carrying parts which would arc or spark when the holder is laid directly onto a grounded surface. The holder's pigtail should be at least 10’ long and free of splices or repairs.

a. When electrode holders are to be left unattended, the electrode must be removed and the holder placed or protected so that they cannot make contact with employees or conductive materials.

b. Welding machines should be shut off whenever the welder leaves the work area for an appreciable amount of time or whenever the machine is to be moved.

c. Hot electrode holders cannot be dipped into water.

d. Equipment found to be defective or faulty should be reported immediately to the supervisor.

e. Electrode holder leads should not be wrapped around the welding machine.

F. Adequate exhaust to the outside should be provided where internal combustion engines are used to operate welding machines in enclosed spaces.

- WORKER TRAINING

A. The contractor shall conduct a training session prior to the beginning of the "hot work." All workers involved will be instructed as to:

a. The work to be performed
b. The precautions to be taken
c. How to use fire extinguishers
d. Emergency response techniques.

B. Work will not commence if any worker does not fully understand what is expected of him or her during "hot work" activities.

PARIC Corporation
Respirable Crystalline Silica Safety Manual
Table of Contents

1. Objective
   The objective of the Respirable Crystalline Silica Safety Program is to comply with the Occupational Safety and Health Administration's (OSHA) Standards, reduce exposure to crystalline silica and to minimize employee injury. Our policy is to take a proactive approach to employee safety through quality hiring, job hazard analysis, engineering and administrative controls, PPE and training. We take pride in our company and our employees. This manual is designed to provide an overview of safety rules, guidelines and policies.

2. Scope
   The policies of this manual cover all employees who are or might be exposed to respirable crystalline silica at a level of 25 micrograms per cubic meter of air as an 8-hour time-weighted average. All new hires will be required to read this manual at the time of their employee orientation. Additionally, supervisors should review these policies with their staff at least annually to ensure continued adherence. Copies of this program are available in the Safety Department for review by all employees.

3. Policies
   Working safely and promoting safety is expected of each employee. Any employee that willfully disregards safety regulations, policies and/or procedures or that bypasses or attempts to bypass safety features on equipment will face disciplinary action up to and including termination.

   a. Training
      All employees shall receive proper training for their work areas or jobs. Employees are expected to “actively participate” in their training to the fullest extent possible. Training could be in many possible forms such as videos, on-the job training, classroom instruction, demonstrations, etc.

   b. Safety Meetings
      An effective safety and health program requires the cooperation of both the employer and employees. Safety meetings and training sessions will be held as needed to ensure new or updated safety information is provided to all employees in a timely manner. Employees must attend all meetings as required.

   c. Basic Safety Rules

i. Employees should know how to properly perform their assigned task. If unsure, they should contact their supervisor before continuing any work.
ii. Employees should assess working areas and equipment before beginning work to identify any hazards. Corrective action must be taken to eliminate such hazards, if found.
III. Use equipment and tools for their intended purpose only.
IV. All equipment and tools should be properly cleaned and stored after use.
V. Machinery, tools, material or equipment which are unsafe or not in proper working order must be identified as unsafe by tagging or locking the controls to render them inoperable or be physically removed from the site.
VI. Proper use and care of Personal Protective Equipment is mandatory. All necessary equipment will be provided at no charge to the employee.

4. Responsibilities

To maintain a safe work environment, everyone must take an active role. The company's responsibilities include providing the necessary resources (money, equipment, employees, etc.) to ensure all employees are able to perform their duties safely. It is then up to the employees to do their part. A multi-stream flow of communication is vital to keep everyone informed of safety rules, needs and changes.

a. Management

i. All management personnel should lead by example. Safety rules should not only be enforced, but also followed.
ii. Management is ultimately responsible for all safety issues and the compliance of this and other safety policies by employees.
iii. Management should be very active in the relaying of information to supervisors and employees from outside contractors, suppliers, clients and management. iv. Management shall maintain all necessary records as required.

b. Supervisors

i. Supervisors will 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.
ii. Supervisors must be thoroughly knowledgeable in all areas of safety.
iii. Supervisors will make frequent and regular inspections of the job sites, materials and equipment.
iv. Supervisors shall have the authority to shutdown equipment for any safety reason.
v. Supervisors should know the cause, severity and cost associated with all accidents in their area.
vi. Supervisors must provide task specific training, as needed. Additionally, new training should be provided to all employees whenever a process is changed or new equipment is introduced.
vii. Supervisors must communicate with management and employees, ensuring all necessary safety information is presented and understood by everyone.

c. Competent Person

i. Will be capable of identifying existing and foreseeable respirable crystalline silica hazards in the workplace.
ii. Has authorization to take prompt corrective measures to eliminate or minimize such hazards. iii. Will make frequent and regular inspections of job sites, materials, and equipment to implement this exposure control plan.

d. Employees
   i. All employees are responsible for complying with rules and procedures.
   ii. Employees are responsible for having a safety attitude and developing safe work habits.
   iii. Employees must report any accident or near hit to their immediate supervisor.
   iv. Employees must report any unsafe equipment or unsafe work conditions to their supervisor.
   v. Employees need to be aware of the many different types of equipment that is utilized. Specific training on every piece of workplace equipment may not be required, but every employee should be cognizant of the characteristics and movements of the equipment. Only employees qualified by training or experience will be allowed to operate equipment and machinery.

5. Work Tasks
   All work tasks which involve exposure to respirable crystalline silica must be identified and listed on the Respirable Crystalline Silica Work Tasks Form (Appendix A.) The engineering controls, work practices, and respiratory protection used to limit employee exposure for each task must also be identified and listed on the same form. For tasks identified on appendix A, which are on Table 1 of OSHA's CFR 1926.1153, the specific engineering controls, work practices, and respiratory protections needed for the tasks are stated. Employees will utilize the stated methods in OSHA's standard for protection.

   Access to some work areas will be limited or restricted, when necessary, to minimize the number of employees exposed to respirable crystalline silica and their level of exposure, including exposures by other employers. Procedures will be formed and instituted to ensure the safety of all employees. These procedures will be determined by the location, duration and amount of exposure. Consult with your supervisor to learn what procedures are being utilized.

6. Housekeeping
   Dry sweeping and dry brushing is not allowed where such activity could contribute to employee's exposure to respirable silica. The use of wet sweeping, HEPA-filtered vacuuming or other methods that minimizes the exposure (wax-based compound sweeping compound). Additionally, the use of compressed air to clean clothing or surfaces is not allowed unless the compressed air is in use with a ventilation system that effectively captures the dust created by the compressed air.

7. Medical Surveillance
   Medical surveillance will be available at no cost to employees, for each employee who will be required to use a respirator for 30 or more days per year (according to OSHA's CFR 1926.1153). All medical examinations will be performed by a Physician or other licensed health care professional (PLHCP). The Human Resources Department will oversee all medical surveillance exams and other items relating to this area.

8. Training
   Each employee must be able to demonstrate knowledge and understanding of at least the following before being allowed to work in certain areas or be allowed to work with material containing respirable crystalline silica:

   a. The health hazards associated with exposure to respirable crystalline silica;
   b. Specific tasks which could result in exposure to respirable crystalline silica;
   c. Specific measures implemented to protect employees from exposure including engineering controls, work practices, and respirators to be used;

d. The identity of the designated competent person; and
e. The purpose and description of the medical surveillance program. Employees will be provided training through different means including but not limited to videos, booklets, handouts, seminars, quizzes, hands-on training, and supervised learning. Management will determine when and what training is necessary and your supervisor(s) will oversee your daily work knowledge and abilities. Should you not perform your job duties in the proper and safe manner you will be required to undergo additional training or retraining.

9. Recordkeeping
Employee training records and other necessary information will be kept on file in the Human Resources/Training Department.

Table 1. Specified Exposure Control Methods When Working With Materials Containing Crystalline Silica

Equipment/task	Engineering and work practice control methods	Required respiratory protection and minimum assigned protection factor (APF)	
		≤ 4 hours/shift	>4 hours/shift
(i) Stationary masonry saws	Use saw equipped with integrated water delivery system that continuously feeds water to the blade Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions	None	None
(ii) Handheld power saws (any blade diameter)	Use saw equipped with integrated water delivery system that continuously feeds water to the blade Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions:		
	-When used outdoors	None	APF 10
	-When used indoors or in an enclosed area	APF 10	APF 10
(iii) Handheld power saws for cutting fiber-cement board (with blade diameter of 8 inches or less)	For tasks performed outdoors only: Use saw equipped with commercially available dust collection system Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions Dust collector must provide the air	None	None

Equipment/task	Engineering and work practice control methods	Required respiratory protection and minimum assigned protection factor (APF)	
		≤ 4 hours/shift	>4 hours/shift
	flow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency		
(iv) Walk-behind saws	Use saw equipped with integrated water delivery system that continuously feeds water to the blade Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions:		
	-When used outdoors	None	None
	-When used indoors or in an enclosed area	APF 10	APF 10
(v) Drivable saws	For tasks performed outdoors only: Use saw equipped with integrated water delivery system that continuously feeds water to the blade Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions	None	None
(vi) Rig-mounted core saws or drills	Use tool equipped with integrated water delivery system that supplies water to cutting surface Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions	None	None
(vii) Handheld and stand-mounted drills (including impact and rotary hammer drills)	Use drill equipped with commercially available shroud or cowling with dust collection system Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a	None	None

Equipment/task	Engineering and work practice control methods	Required respiratory protection and minimum assigned protection factor (APF)	
		≤ 4 hours/shift	>4 hours/shift
	filter with 99% or greater efficiency and a filter-cleaning mechanism Use a HEPA-filtered vacuum when cleaning holes		
(viii) Dowel drilling rigs for concrete	For tasks performed outdoors only: Use shroud around drill bit with a dust collection system. Dust collector must have a filter with 99% or greater efficiency and a filter-cleaning mechanism	APF 10	APF 10
(ix) Vehicle-mounted drilling rigs for rock and concrete	Use dust collection system with close capture hood or shroud around drill bit with a low-flow water spray to wet the dust at the discharge point from the dust collector	None	None
	OR		
	Operate from within an enclosed cab and use water for dust suppression on drill bit	None	None
(x) Jackhammers and handheld powered chipping tools	Use tool with water delivery system that supplies a continuous stream or spray of water at the point of impact:		
	-When used outdoors	None	APF 10
	-When used indoors or in an enclosed area	APF 10	APF 10
	OR		
	Use tool equipped with commercially available shroud and dust collection system Operate and maintain tool in accordance with manufacturer's instructions to minimize dust		

Equipment/task	Engineering and work practice control methods	Required respiratory protection and minimum assigned protection factor (APF)	
		≤ 4 hours/shift	>4 hours/shift
	emissions		
	Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency and a filter-cleaning mechanism:		
	-When used outdoors	None	APF 10
	-When used indoors or in an enclosed area	APF 10	APF 10
(xi) Handheld grinders for mortar removal (*i.e.*, tuck pointing)	Use grinder equipped with commercially available shroud and dust collection system	APF 10	APF 25
	Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions		
	Dust collector must provide 25 cubic feet per minute (cfm) or greater of airflow per inch of wheel diameter and have a filter with 99% or greater efficiency and a cyclonic pre-separator or filter-cleaning mechanism		
(xii) Handheld grinders for uses other than mortar removal	For tasks performed outdoors only: Use grinder equipped with integrated water delivery system that continuously feeds water to the grinding surface	None	None
	Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions		
	OR		
	Use grinder equipped with		

Equipment/task	Engineering and work practice control methods	Required respiratory protection and minimum assigned protection factor (APF)	
		≤ 4 hours/shift	>4 hours/shift
	commercially available shroud and dust collection system		
	Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions		
	Dust collector must provide 25 cubic feet per minute (cfm) or greater of airflow per inch of wheel diameter and have a filter with 99% or greater efficiency and a cyclonic pre-separator or filter-cleaning mechanism:		
	-When used outdoors	None	None
	-When used indoors or in an enclosed area	None	APF 10
(xiii) Walk-behind milling machines and floor grinders	Use machine equipped with integrated water delivery system that continuously feeds water to the cutting surface	None	None
	Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions		
	OR		
	Use machine equipped with dust collection system recommended by the manufacturer	None	None
	Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions		
	Dust collector must provide the air flow recommended by the		

Equipment/task	Engineering and work practice control methods	Required respiratory protection and minimum assigned protection factor (APF)	
		≤ 4 hours/shift	>4 hours/shift
	manufacturer, or greater, and have a filter with 99% or greater efficiency and a filter-cleaning mechanism When used indoors or in an enclosed area, use a HEPA-filtered vacuum to remove loose dust in between passes		
(xiv) Small drivable milling machines (less than half-lane)	Use a machine equipped with supplemental water sprays designed to suppress dust. Water must be combined with a surfactant Operate and maintain machine to minimize dust emissions	None	None
(xv) Large drivable milling machines (half-lane and larger)	For cuts of any depth on asphalt only: Use machine equipped with exhaust ventilation on drum enclosure and supplemental water sprays designed to suppress dust Operate and maintain machine to minimize dust emissions For cuts of four inches in depth or less on any substrate: Use machine equipped with exhaust ventilation on drum enclosure and supplemental water sprays designed to suppress dust Operate and maintain machine to minimize dust emissions OR Use a machine equipped with supplemental water spray designed to suppress dust. Water must be combined with a surfactant	None None None	None None None

Equipment/task	Engineering and work practice control methods	Required respiratory protection and minimum assigned protection factor (APF)	
		≤ 4 hours/shift	>4 hours/shift
	Operate and maintain machine to minimize dust emissions		
(xvi) Crushing machines	Use equipment designed to deliver water spray or mist for dust suppression at crusher and other points where dust is generated (e.g., hoppers, conveyers, sieves/sizing or vibrating components, and discharge points)	None	None
	Operate and maintain machine in accordance with manufacturer's instructions to minimize dust emissions		
	Use a ventilated booth that provides fresh, climate-controlled air to the operator, or a remote control station		
(xvii) Heavy equipment and utility vehicles used to abrade or fracture silica-containing materials (*e.g.*, hoe-ramming, rock ripping) or used during demolition activities involving silica-containing materials	Operate equipment from within an enclosed cab	None	None
	When employees outside of the cab are engaged in the task, apply water and/or dust suppressants as necessary to minimize dust emissions	None	None
(xviii) Heavy equipment and utility vehicles for tasks such as grading and excavating but not including: Demolishing, abrading, or fracturing silica-containing materials	Apply water and/or dust suppressants as necessary to minimize dust emissions OR	None	None
	When the equipment operator is the only employee engaged in the task, operate equipment from within an enclosed cab	None	None

CONFINED SPACE ENTRY

- DEFINITIONS
  a. Controlling Contractor is the employer that has overall responsibility for construction at the worksite.
  b. Entry Employer means an employer establishing the permit program for a permit space.
  c. 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, whether or not such action is intentional or any work activities are actually performed in the space.
  d. Permit-required confined space (permit space) means a confined space that has one or more of the following characteristics:
     (1) Contains or has a potential to contain a hazardous atmosphere;
     (2) Contains a material that has the potential for engulfing an entrant;
     (3) Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly
     Converging walls or by a floor which slopes downward and tapers to a smaller cross-section; or
     (4) Contains any other recognized serious safety or health hazard.
  e. Non-permit confined space means a confined space that does not contain or, with respect to atmospheric hazards, have the potential to contain any hazard capable of causing death or serious physical harm.
  f. Rescue means retrieving, and providing medical assistance to, employees who are in a permit space.
  g. Entry rescue occurs when a rescue service enters a PRCS to rescue employees.
  h. Non-entry rescue means a rescue service, usually the attendant that retrieves employees in a permit space without entering the permit space.
  i. Rescue service means the personnel designated to rescue employees from permit spaces.

- PURPOSE AND SCOPE

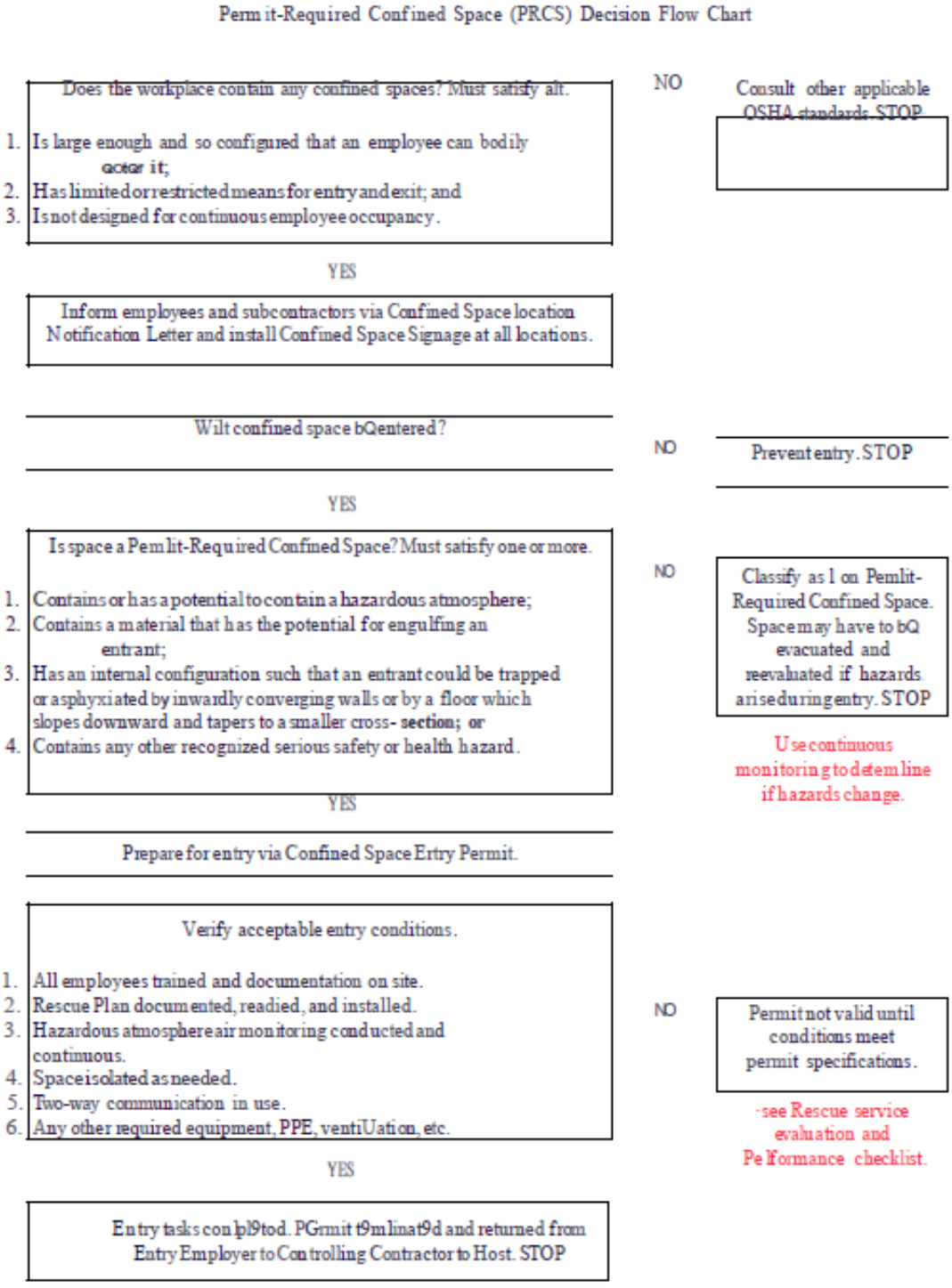
A. To establish a procedure whereby employees may safely enter and work within confined spaces without exposure to oxygen deficient or enriched atmospheres and/or exposure to hazardous accumulations of toxic or explosive gases or vapors. All confined space entries shall be conducted in accordance with OSHA standard CFDR 1926 1200 Subpart AA.

B. Confined space means a space that:

   a. Is large enough and so configured that an employee can bodily enter it;
   b. Has limited or restricted means for entry and exit; and
   c. Is not designed for continuous employee occupancy.

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

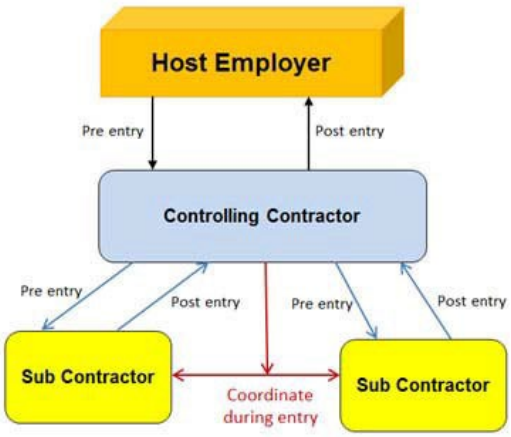
D. Permit-required confined space (permit space) means a confined space that has one or more of the following characteristics:
   a. Contains or has a potential to contain a hazardous atmosphere;
   b. Contains a material that has the potential for engulfing an entrant;
   c. Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross section; or
   d. Contains any other recognized serious safety or health hazard.



- COMMUNICATION

A. Each employer must ensure that a competent person Identifies all confined spaces and must mark them

a. The controlling contractor, rather than the host employer, the primary point of contact for information about permit spaces at the work site. The host employer must provide information it has about permit spaces at the work site to the controlling contractor, who then passes it on to the employers whose employees will enter the spaces (entry employers). Likewise, entry employers must give the controlling contractor information about their entry program and hazards they encounter in the space, and the controlling contractor passes that information on to other entry employers and back to the host. As mentioned above, the controlling contractor is also responsible for making sure employers outside a space know not to create hazards in the space, and that entry employers working in a space at the same time do not create hazards for one another's workers.



A. Each Subcontractor must email or otherwise communicate in writing to Paric that they intend to enter a confined space. This communication must include the confined space they intend to enter along with the date, time, and their confined space entry plan including rescue. Paric will require continuous monitoring for all confined space entries. When their work is complete in the confined space they will be required to communicate in writing that their work has completed and include all testing documentation and Permits.

B. Paric will then communicate this back to the Host Employer(Owner).

- PROCEDURE

A. Pre-entry requirements.

B. Any time an employee has cause to enter a confined space the confined space shall be assessed by a competent person to determine:

a. The presence existing hazards in the confined space, which need to be eliminated prior to employee entry.

b. The possibility of hazards entering the confined space or being generated from work operations during occupancy.
c. Required emergency rescue procedures in the event of a foreseeable emergency.

C. The Competent person is responsible for completing all applicable portions of the permit and posting of the Confined Space Entry Permit (Utilize Field 360 or intranet for forms) prior to allowing any employee to enter a confined space.

D. All completed Confined Space Entry Permits and any supporting documentation must be made part of the project's permanent records.

E. Atmosphere Testing

The atmosphere within the confined space is to tested prior to employee entry to determine if the atmosphere is oxygen deficient and/or enriched and/or if toxic, flammable, explosive, or combustible gases, vapors, ducts or fumes are present.

a. Testing is only to be performed by qualified persons using approved testing devices and/or monitors.
Testing devices must be capable of determining the following conditions.

I. Oxygen deficiency at 19.5% of air volume.
II. Oxygen enrichment at 22% of air volume.
III. The presence of common toxic gases or vapors.
IV. The presence of explosive gases or vapors at 10% of the lower explosive/flammable limit.
V. The presence of the hazard material(s) previously contained within the confined space.

b. Test results must be recorded on a Confined Space Entry Permit by the competent person.

c. Prior to entry into any confined space used or having been used for the storage, processing or transfer of hazardous materials the owner must be consulted to determine:

I. The previous contents of the confined space.
II. The methods used to remove the contents and to decontaminate the confined space.
III. The health hazards associated with the contents of the confined space. (Request a copy of the Safety Data Sheet).
IV. Proper testing procedures to determine if the confined space has been decontaminated to a level safe for human occupancy.
V. If the tests for hazardous gases, vapors, fumes, or dusts and oxygen deficiency or enrichment are negative, a Confined Space Entry Permit may be completed and work may begin.

d. If tests for hazardous gases, vapors fumes, and/or oxygen deficiency or enrichment are positive the following procedures must be observed:

e. Oxygen Deficiency/No Hazardous Gases Present

If a confined space contains less than 19.5% oxygen by volume, forced mechanical ventilation must be used in an attempt to introduce a sufficient amount of respirable air into the confined space. The atmosphere in the confined space must be retested after the mechanical ventilation has been in operation for a minimum of 15 minutes and before any worker enters the space. If

the retesting indicates a sufficient amount of oxygen, the Confined Space Entry Permit may be completed and work begun. Mechanical ventilation of the confined space must be continued until the completion of work.

If forced mechanical ventilation fails to provide sufficient oxygen, then either a self-contained breathing apparatus (S.C.B.A.), or air-line respirator with a self-contained rescue/evacuation air supply can be used only as long as necessary to find and correct the cause of the oxygen deficiency. The permit must state which respirator is to be used. All persons working in an atmosphere with less than 19.5% oxygen must wear a life-line and be observed by an outside attendant trained in rescue techniques.

f. Hazardous Gases Present/No Oxygen Deficiency

If testing reveals sufficient oxygen but the presence of hazardous gases, mechanical ventilation must be applied to the confined space, as described section E.e the space must be re-tested. If the test results indicate it is safe, the permit may be completed and work begun. Mechanical ventilation of the confined space must be continued until the completion of work.

If ventilation does not remove or lower the hazardous gases to an acceptable level, the confined space can be purged with water or an inert gas and the space re-tested. Testing must include a re-check of the oxygen level if an inert gas is used. (Some inert gases are heavier than air and can cause an oxygen deficiency, especially in the bottom of the confined space). If test results are negative, the permit may be completed and work begun. Mechanical ventilation of the confined space must be continued until the completion of work. If the tests reveal the presence of hazardous gases/no oxygen deficiency, then a self-contained breathing apparatus or air-line respirator must be used. A full face, chemical cartridge respirator may be used as protection against hazardous gases provided sufficient oxygen is present and the toxic gases have good warning properties that would warn the wearer of leaks in the face piece, or exhaustion of the cartridges, without posing an immediate threat to health or life. The permit is to then be completed and work begun. The permit must state the type of respirator to be used.

If the gases/vapors remaining in the confined space are potentially explosive, no work will be allowed that has the possibility of introducing sparks, flames, hot metal and static electricity, etc. Special personal protective equipment, tools and work procedures will be necessary to avoid the possibility of fire or explosion. Oxygen enriched atmospheres also pose special hazards because excessive oxygen can accelerate the rate of combustion of flammable/explosive gases/vapors and combustible materials.

g. Hazardous Gases Present/Oxygen Deficiency

Procedures and precautions outlined in both E.e and E.f shall be followed when tests indicate the presence of hazardous gases and lack of oxygen.

F. Continuous Monitoring

a. Confined space atmospheres are to be subject to continuous monitoring at all times.

b. Confined space engulfment hazards are to be subject to continuous monitoring at all times.

G. Alternate Procedures (Non-Permit Entry)

a. The employer can demonstrate that the only hazard posed by the permit space is an actual or potential hazardous atmosphere;
b. The employer can demonstrate that continuous forced air ventilation alone is sufficient to maintain that permit space safe for entry,
c. The employer develops and documents monitoring and inspection data that supports the determination; an initial entry of the permit space is not necessary to obtain the data
d. Entry into the permit space under these terms is performed as a non-permit entry.

H. Reclassification to Non-Permit 1203(g)

A permit space may be reclassified to a non-permit space if all of these are met:

a. No actual or potential atmospheric hazards exist or are eliminated without entry into the space and non-atmospheric hazards remain eliminated.
b. The entry employer must eliminate the hazards without entering the space, unless it can demonstrate that this is infeasible and the hazards remain eliminated. NOTE: Control of atmospheric hazards through forced air ventilation does not constitute elimination of the hazards.

c. Must document the basis for determining that all hazards have been eliminated.

d. If hazards arise each employee in the space must exit the space.

I. Other Hazards

Employees are to be prohibited from entering any confined space until other physical hazards have been assessed and abated.

a. The removal of physical hazards involves isolating any electrical and mechanical energy sources. This includes locking and tagging out electrical and mechanical energy sources (e.g motors, agitators and other moving parts) within the confined space. Acceptable means include draining and purging piping systems to prevent the flow of product into the confined space, closing, locking-out and tagging valves, installing blanks, etc. The confined space must be surveyed for the presence of pests. This includes insect, spiders, rodents and other animals which may be residing within the confined space. Attempts must be made to eliminate such pests or protect workers during entry if pests are present.

b. Employees caused to enter confined spaces which may harbor infectious agents are to be provided with appropriate personal protective equipment, offered the opportunity to receive available vaccines and provided training in proper hygiene practices.

c. Confined Space Attendants

No employee can enter into a confined space unless an outside attendant is stationed at the entrance to the confined space. It is the responsibility of the attendant to:

I. Stay at the entrance of the confined space.

II. Maintain constant communication with workers within the confined space. If the occupant(s) are working out of the sight of the attendant and/or the surrounding noise level or required respiratory protection equipment limits normal voice communications, the

attendant and the occupants must be supplied non-sparking radios or headsets to facilitate verbal communication.

III. Monitor the air quality (whenever gas detection equipment is stationed outside the confined space) and notify the occupants of any changes.

IV. Notify appropriate authorities in the event of any incident, which prohibits the occupants of the confined space from exiting under their own power.

V. Achieve rescue if and only if: 1) the occupant(s) of the confined space can be retrieved by either means of a lifeline or retrieval system, which is physically attached to the occupant(s) or 2) upon the arrival of rescue personnel if the attendant is qualified to perform rescue activities. Under no circumstance shall the outside attendant enter into a confined space regardless of the situation until rescue personnel arrive!!

J. Rescue Equipment

a. Retrieval Equipment

I. A retrieval system must be used during all entries in confined spaces unless it is determined that its use would hamper rescue attempts or endanger employee safety.

II. Employees caused to enter confined spaces by means of a vertical or near vertical entry must wear a body harness attached to a cable retrieval system. Such systems must either involve a winch or pulley system, anchored or supported above the opening, which the attendant can use to raise the occupant of the confined space through the man-way or opening.

III. Employees caused to enter confined spaces by means of a horizontal entry must use a body harness attached to a lifeline which extends outside the man-way or opening which the attendant can use to drag the occupant through the man-way or opening.

K. Emergency Air

a. Employees entering confined spaces shall be provided and required to carry a ten-minute emergency/escape air supply under the following conditions:

b. Whenever a confined space has tested positive for oxygen deficiency and/or the presence of toxic vapors, gases, fumes, or dusts exist.

c. Whenever a confined space is unprotected from developing an oxygen deficient atmosphere and/or the confined space is unprotected from entrance presence of toxic vapors, gases, fumes, or dusts or simple asphyxiates.

d. Whenever employees are required to wear filter cartridge respirators or hose supplied respirators.

L. Tools and Equipment

a. Only approved electrical equipment can be used in potentially explosive atmospheres.

b. Only non-sparking tools can be used in potentially explosive atmospheres.

c. Compressed gas cylinders (other than emergency/escape air cylinders) cannot be taken into a confined space. All torch, purge and shield gas hoses are to be inspected for leaks prior to being taken into a confined space. All hoses must be removed from the confined space during breaks and upon completion of work and the gas supply shut off at the cylinder valve.

M. Emergency Planning

Prior to conducting any confined space entry an emergency plan must be devised which addresses foreseeable emergencies. All plans need to be approved by the Safety Director along with Project Supervision, if required. Emergency plans can be as simple as requiring the confined space attendant to attempt outside rescue (if possible) and to notify the rescue squad and the company Safety Director. Other plans may need to be more complex based upon the hazards involved, the location of the confined space, owner involvement and other factors. The minimum requirements for an emergency plan are:

a. The plan must be in writing.

b. The plan must account for foreseeable emergencies.

c. The plan must be made known to all involved personnel and practiced.

d. If emergency services are planned for rescue Fill out evaluation forms (Utilize Field 360 or intranet for forms: Rescue Services Evaluation Checklist and Rescue Team Performance Evaluation Checklist).

e. The plan must be approved by the company Safety Director and, if necessary, Project Supervision.

N. Employee Training

All employees involved in confined space entry should receive documented training in the recognition of the hazards involved and their abatement, safe work practices, personal protective measures and emergency rescue procedures. All training must be conducted and documented prior to an employee's conducting confined space entry. (Utilize Field 360 or intranet for forms)

MATERIAL HANDLER

- MATERIAL STORAGE

A. General Requirements for Storage

a. All material in storage must be stacked, blocked, interlocked or otherwise secured to prevent sliding, falling or collapse.

b. Materials can only be stored in designated areas which have adequate room for the safe movement of workers and equipment during material handling operations.

c. Material storage areas are to be kept clear from the accumulation of materials and debris which could cause hazards such as tripping, fire, explosion or pest habitation.

d. Items such as round stock, tube stock, unistrut, all thread, small pipe, etc., unless stored in racks, should be stacked and blocked during storage to prevent spreading and tilting.

e. Loose materials such as nuts, bolts and other hardware should be put in containers.

f. Materials cannot be stored on scaffolds or runways in excess of supplies needed for immediate use.

g. Non-compatible materials are to be segregated in storage.

h. Combustible and flammable liquids must be handled and stored in accordance with Section 21 of this manual.

i. Compressed gas cylinders are to be handled and stored in accordance with Section 22 of this manual.

j. Lumber Storage

I. Lumber is to be stacked on solid, supported sills, in such a manner that is self-supporting, and should not exceed 10’ in height.

II. All lumber, which is to be reused, must have its nails removed or bent over prior to stacking.

B. Indoor Storage Areas

a. Materials cannot be stored within 6’ of any floor opening, hoist way or stairway.

b. Materials cannot be stored within 10’ of an exterior wall unless the wall's height exceeds the height of the stored materials.

c. Posted floor weight limits must be observed.

d. Fire Prevention

I. Stored materials should not be located as to block or affect any means of access or egress.

II. Adequate clearance needs to be maintained around lights and heating units.

III. Materials cannot be stored within 36” of fire doors, sprinkler deflectors or sprinkler valves.

IV. Materials must be stored with due consideration given to their fire characteristics.

V. Aisle space wide enough to accommodate the widest firefighting equipment used in the building must be maintained between and around material piles.

C. Open Yard Storage Areas

a. Combustible materials are not to be stored within 10’ of a building or structure.

b. Suitable weather protection should be provided for materials, which could be damaged by the effects of weather.

- RIGGING EQUIPMENT FOR MATERIAL HANDLING

A. General

a. Rigging equipment for material handling must be inspected prior to use on each shift and as necessary during use to ensure that it is safe. Defective rigging equipment must be removed from service immediately.

b. Rigging equipment cannot be loaded in excess of its recommended safe working load. Working loads cannot be more than 1/5 the breaking strength (a safety factor of 5). Commercially available slings, chokers, shackles, hooks, etc., meet this specification.

c. Rigging equipment, when not in use, must be removed from the immediate work area so as not to present a hazard to employees.

d. Special custom design grabs, hooks, clamps, lifting beams, or other lifting accessories must be made of approved materials, marked to indicate the safe working loads and shall be proof-tested to 125 percent of their rated load.

e. When handling material a tag line shall be required.

B. Alloy Steel Chains

a. Welded alloy steel chain slings must have permanently affixed durable identification stating size, grade, rated capacity and manufacturer.

b. Hook, rings, oblong links, pear-shaped links, welded or mechanical coupling links and other attachments, when used with alloy steel chains, must have a rated capacity at least equal to that of the chain.

C. Wire Rope and Wire Rope Slings

a. All wire rope and wire rope slings and all other attachments, connectors and terminal hardware, used for hoisting materials must have a safety factor of not less than 5.

b. Wire rope slings and bridles should be visually inspected prior to their first use of the shift. Wire ropes, which show signs of kinking, bird caging, broken wires, wear in excess of allowable limits, or flattening must be immediately removed from service.

c. Only wire rope slings with commercially made splices should be used for hoisting.

d. The use of wire rope with job-made eye splices is permissible for use as life-lines, static- lines and tie backs, provided commercially available cable clamps (i.e., Crosby clips) are used. The wire rope and cable clamps used in the applications must have a safety factor of five. The use of job-made wire rope connectors is prohibited.

e. Except for eye splices made in the ends, wire ropes are to be one continuous piece without knots or splices.

f. Wire ropes cannot be secured or shortened by the use of knots. The use of bolts to shorten wire ropes is prohibited.

g. Protruding end of strands in splices are to be covered or blunted.

h. If two or more wire rope slings are to be joined together, a shackle must be used.

i. Any eyes formed by wire rope clips or other configurations need an appropriately sized thimble.

j. Slings are to be protected from the sharp edges of loads by some means of padding.

k. Cutting lengths of wire rope can only be done with cable cutters. Flame cutting is prohibited. Fittings, which require welding are to be welded prior to their attachment to the wire rope.

l. Cable Clips

I. When U-bolt cable clips (Crosby clips) or double saddle clips are used to form eyes, refer to Riggers Reference at the end of this section to determine the number and spacing of clips.

II. When Crosby clips are used to form eyes, the U-bolt must be applied so that the "U" section is in contact with the dead end (tail) of the rope.

III. Double saddle clips must be used when forming endless rope slings. U-bolt clips cannot be used for this purpose due to there being no dead end to take the "U".

D. Synthetic Webbing

a. All synthetic web slings shall have permanently affixed, durable identification stating the name or trademark of the manufacturer, type of material and rated capacity for the type of hitch.

b. Synthetic web slings should be immediately removed from service if any of the following

conditions are present: acid or caustic burns; melting or charring; snags, punctures, or tears which reveal colored wear threads; broken or worn stitching; distortion of fittings.

c. All attachments and fittings are to be of a minimum breaking strength at least equal to that of the sling.

d. Synthetic slings should not be exposed to the following environmental conditions:

I. Fumes, vapors, sprays, mists, or liquid or solid forms of acids, caustics, or other chemicals that could cause deterioration of the material.

II. Temperatures in excess of 180 degrees F.

III. Extreme cold.

IV. Used while wet or frozen.

V. Extended periods of exposure to sunlight.

VI. Petroleum products (contamination by).

e. Only the sling's manufacturer is allowed to repair or modify synthetic slings.

f. Synthetic slings may only be joined together by the use of a shackle.

g. Synthetic slings are to be protected from the sharp edges of loads.

E. Shackles and Hooks

a. A safety factor of 5 or more must be maintained in the use of all shackles. See Riggers Reference for safe working loads of various shackle sizes.

I. The replacement of shackle pins with bolts, rods, or other unapproved materials is prohibited.

b. The safe working loads of hooks are to be determined by the manufacturer.

I. All hooks must be marked with their safe working load limits. Hooks which do not have a manufacturer's safe working load limit must be tested to twice the intended safe working load prior to their initial use. Records of such tests must be maintained.

II. Safety latches, or mousings, are to be used on all load hoisting hooks to prevent loads from accidentally coming free of the hook.

III. Bent and distorted hooks are to be removed from service.

F. Natural and Synthetic Fiber Rope

a. Natural and synthetic fiber rope cannot be used for hoisting materials in excess of 100 lbs. Wire rope or synthetic web slings are the preferred rigging equipment.

b. Natural and synthetic fiber rope may be used to secure materials to prevent shifting and movement provided it is capable of withstanding the stress, which may result.

c. All splices must be made in accordance with fiber rope manufacturer's recommendations and be made by a competent person.

I. Knots shall not be used in lieu of splices.

CRANES

A. All manufacturer's specifications and limitations applicable to the operation of cranes shall be complied with at all times. Attachments used with cranes shall not exceed the capacity, rating, or scope recommended by the manufacturer.

   a. No modifications or additions can be made without the manufacturer's written approval. All charts, warnings, etc., must be changed accordingly if modifications or additions are made.

B. Rated capacities and recommended operating speeds, special hazard warnings, or instructions must be conspicuously posted on all equipment. Instructions and warnings must be visible to the operator from the control station.

   a. The crane's rated capacity chart and operator's manual shall be kept on the crane at all times.

   b. The operator must ensure that no operations occur that are outside the manufacturers recommendations and that the load is within the rated capacity of the crane being used.

   c. It is prohibited to use cell phones or other devices which may distract the operator from safely performing a task.

   d. Operators shall not leave the control while a load is suspended.

   e. Operators shall respond to signals only from a qualified signal person, but shall obey a stop signal at any time, no matter who gives it.

   f. Traveling with a load is prohibited if the practice is prohibited by the manufacturer.

   g. A tag or restraint line must be used if necessary to prevent rotation of the load that would be hazardous.

   h. A boom angle indicator in good working order must be provided and be visible to the operator from the control station.

   i. Load hooks, ball assemblies and load blocks must be of sufficient weight to overhaul the line from the highest hook position.

C. Hook and ball assemblies and load blocks must be marked with their rated capacity and weight.

D. Hooks must have safety latches.

E. Cabs and windows must conform to the requirement found in 29CFR1926.1433.

F. A qualified person must inspect the machinery and equipment after setup and prior to initial lift; before each shift; after every malfunction and completely on an annual basis to insure it is in safe operating condition. Any deficiencies are to be repaired, or defective parts replaced prior to continued use.

a. Inspection requirements for wire rope:

I. Documented visual inspections shall be performed daily, monthly, and annually by a qualified person prior to or during each shift.

II. During the inspection all wire rope shall be inspected for the following deficiencies:

III. Significant distortion such as kinking, crushing, unstranding, birdcaging, signs of core failure or steel core protrusion between outer strands.

IV. Significant corrosion

V. Electric arc or heat damage.

VI. Improperly applied end connections.

VII. Corroded, cracked, bent, or worn end connections.

VIII. Visible broken wires:

i. Running lines – Six randomly distributed broken wires in one rope lay or three in one strand a rope lay.

ii. Rotation resistant – two randomly distributed broken wires in six rope diameters or four randomly distributed broken wires in 30 rope spans.

iii. Standing lines – more than 2 broken wires in one rope lay beyond end connections and one broken wire located at an end connection.

IX. A diameter reduction of more than 5%.

X. Core protrusion or other distortion indicating core failure.

XI. A broken strand.

XII. After any electrical contact with a power line or lightning.

i. If any deficiencies are found that constitute a safety hazard the wire rope shall be replaced.

ii. Wire rope clips used in conjunction with wedge sockets must be attached to the unloaded dead end of the rope only, except that the use of devices specifically designed for dead-ending rope in a wedge socket.

G. All cranes are subject to annual inspection as required by CFR 1926 Subpart CC. A qualified person must maintain the dates and results of the inspections. A current copy of each cranes inspection results must

be maintained on each crane. Utilize Field 360 or intranet for forms

H. All cranes must be setup properly before making any lift of any weight. For all lifts over 75% of the cranes rated capacity a qualified person shall see that Paric's crane lift calculation form is completed. (See attachments). Completed crane lift calculation form must be kept on site in project file. A qualified person is responsible for:

   a. The proper placement of the crane in relationship to the load to be handled and the landing area so as to obtain the best-rated lift capacity

   b. Leveling the crane to within one degree of level and rechecking the level, a minimum of three times, during the eight-hour work shift

   c. The proper placement and use of outriggers for all lifts except where the manufacturer permits otherwise

   d. The determination of stable or unstable ground or footing. Should additional floats, cribbing, timbers or other structural members be needed, they need to be of proper design and sufficient to uniformly distribute the load

   e. The installation and maintenance of crane-swing radius protection

   f. Assuring the correct load chart is available

   g. Daily inspection of the crane before use

   h. Reporting any defects and ensuring they are corrected

   i. One of the critical factors of proper crane setup is a 'Firm supporting surface". For maximum capacity, the crane must be level. To maintain a level condition, however, the ground surface must be adequate to support the dynamic load of a "working crane". Use adequate blocking under all outriggers. Only heavy timber is to be used for blocking under outriggers. Four basic elements are to be considered:

      - Total Imposed Load
      - Supporting Surface Area
      - Pounds per Square Foot
      - Soil Stability

   j. Location of utilities, voids, or any other subsurface condition that would affect the safety of operations shall be established and communicated prior to assembly on site.

   k. Ground conditions shall be firm, drained and graded in order to meet the manufacturer's specifications for adequate support and degree of level.

   l. Total Imposed Load includes the weight of all equipment on the outriggers, including the wind.

   m. Total Supporting Surface Area is the outrigger area in contact with the ground and weight of the entire unit will determine the bearing pressure the crane and load exert on the soil. When it is

determined that the bearing pressure exceeds soils stability, the bearing area of the soil must be increased by the use of additional cribbing, or the load must be reduced.

Cribbing to be used must be:

I. Strong enough to withstand the weight of the crane without major deflection, thus actually increasing the bearing surface

II. Bolted or secured together to prevent slippage or collapsing

III. In complete contact with the soil – no voids, insupportable areas or the like

n. All rigging equipment should be inspected prior to each shift and as necessary during the shift to ensure safety. Damaged or defective slings should be immediately removed from service by a qualified rigger. Please Utilize Field 360 or intranet for forms for Riggers Reference Guide.

I. All rigging devised, including slings, should have permanently affixed identification stating size, grade, rated capacity and manufacturer.

II. "Shop-made" grabs, hooks, clamps or other lifting devices cannot be used unless proof-tested to 125% of their rated load by an approved testing agency. Approved devices must have the capacity permanently affixed.

III. Slings should not be left lying on the ground or otherwise exposed to dirt and the element.

IV. Eyes in wire-rope bridles, slings or bull wires cannot be formed by wire clips or knots.

V. Protruding ends of strands in splices on slings or bridles need to be covered. All rigging equipment in use must have a safety factor of five.

f. The following safe operating practices must be followed.

I. Slings cannot be shortened by knots, bolts or other makeshift devices.

II. Wire rope sling must be padded or softeners used to protect from damage.

III. Slings used in a basket hitch must have the loads balanced to prevent slippage.

IV. Loads handled by slings are to be landed on cribbing or dunnage so that slings need not be pulled from under or be crushed by the load.

V. Slings subjected to shock loading are to be immediately removed from use and destroyed.

VI. U-Bolts and/or wire rope clips are not permitted for use on slings. Only manufactured slings that are properly tagged are to be used.

g. Thorough inspection of slings in use should be made on a regular basis, as determined by:

- The severity of service conditions,

- The frequency of sling use,
- The nature of lifts being made and
- The experience gained on the service life of slings similarly used.

I. Inspection periods are not to exceed once in 12 months. A record of inspections must be maintained

h. Accessible areas within the swing radius of the rear of the rotating superstructure of the crane (e.g., crawler and truck mounted cranes) must be barricaded in such a manner as to prevent workers from being struck or crushed by the crane.

I. Crewmembers shall be trained in how to recognize struck-by and pinch/crush hazards posed by the rotating superstructure.

II. Barriers or control/warning lines shall be erected. Additionally, signage and reflective high visible marking shall be on the crane.

III. Employees should only walk on the operator's side of the crane until his presence is made known to the operator.

o. Whenever equipment powered by internal combustion engines exhaust into enclosed spaces, adequate ventilation must be maintained so that workers are not exposed to unsafe concentrations of toxic gases or oxygen deficient atmospheres. Whenever possible, stationary equipment must be equipped with exhaust ducts that extend outside the enclosed space. Consideration should be given to electrical and propane-powered equipment for inside use.

p. No one is permitted to ride the ball or hook of a crane, or any load being hoisted or lowered.

q. The use of crane-suspended boatswain chairs is strictly prohibited.

r. The use of crane-suspended personnel platforms (man baskets) is greatly restricted. The use of man baskets shall only be performed in accordance with the Occupational Safety and Health Administration's Standard. Guidelines and procedure for this standard are found in Attachments at the end of this manual.

- Overhead Power Line Crane Safety

A. All power lines are assumed to be energized at all times unless the utility owner/operator confirms that the power line is De-energized and visible grounding is present at the worksite.

B. The power line company should be contacted to get voltage on power lines that could possibly effect ANY operations.
C. All employees on-site shall know these voltages.

D. Prior to operations a hazard assessment shall be done of the work site.

E. The hazard assessment shall include the following steps:

a. Identify the work area as 360degrees around the equipment and marking boundaries through

the use of either visual or positive limiting devices.

b. Determine if any part of the equipment, load-line, load, or rigging at maximum working radius could get closer than 20 feet from a power line.

F. If, at maximum working radius the equipment could get closer than 20 feet one of the following safety precautions must be followed.

a. De-energize and ground the line. Confirmation from the power company is required.

b. Ensure that no part of the equipment will come within the 20 foot rule.

c. Use the following clearance table.

Table A – Minimum Clearance Distances

Voltage (nominal, kV, alternating current)	Minimum clearance distance (feet)
up to 50	10
over 50 to 200	15
over 200 to 350	20
over 350 to 500	25
over 500 to 750	35
over 750 to 1000	45
over 1000	(as established by the power line owner/operator or registered professional engineer who is a qualified person with respect to electrical power transmission and distribution)

G. Work practices where contact is possible.

a. A meeting shall be conducted prior to the start of operations with the operator and crew covering the location and voltage of power lines in the work zone and measures to be taken to prevent encroachment/electrocution.

b. Tag lines must be non-conducive.

c. One of the following measures must be implemented:

I. Erect and maintain visible markers in view of the operator 20 feet from the power lines.

II. Have a dedicated spotter that can communicate directly with the operator

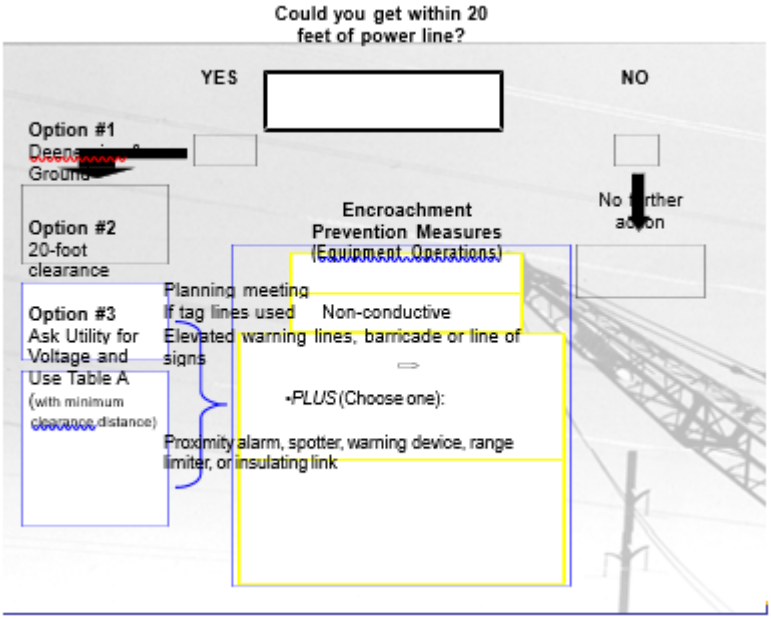
III. Use of a proximity warning device, a range control warning device, or an automatic range of movement limiting device.

d. When working near transmitter/communication towers where the equipment is close enough for an electrical charge to be induced in the equipment or materials being handled, the transmitter must be de-energized or the following precautions taken:

I. The equipment must be provided with an electrical ground.

II. If tag lines are used, they must be non-conducive.

e. If during operations any part of the equipment must be operated closer than the minimum approach distances authorization must be given by the safety department and all requirements found in 29CFR1926.1410 shall be followed.



H. Power lines over 350kV.

a. The distances used in the initial hazard assessment shall be increased from 20 to 50 feet for power lines between 350kV and 1,000kV.

b. For power lines over 1,000kV minimum clearances shall be established by the utility owner/operator or a RPE who is qualified with respect to electrical power transmission and distribution.

I. Traveling underneath power lines.

a. All parts of the equipment must be lowered to ensure minimum clearances are kept.

b. Effects of speed and terrain shall be considered and a safe path of travel shall be identified and used.

c. If visibility is poor the power lines shall be illuminated and a spotter shall be used.

d. The minimum safe distances found in the following table shall be kept while traveling under power lines.

Voltage (nominal kV, alternating current)	While Traveling – minimum clearance in feet
Up to 0.75	4
0.75 to 50	6
Over 50 to 345	10
Over 345 to 750	16
Over 750 to 1,000	20
Over 1,000	Est. by the utility owner/operator or a RPE

e. Training requirements.

f. All operators and crew members shall be trained in the procedures to be followed in the event of an electrical contact with a power line, including:

I. The danger of touching any part of the equipment/load and the ground simultaneously.

I. The importance of staying in the cab unless an imminent danger is present.

II. The safest means of evacuating equipment that may be energized.

III. Dangers associated with the energized zones around the equipment.

IV. Safe clearance distances.

V. Limitations of any safety devices employed.

VI. Proper grounding techniques.

VII. Designated spotters shall be trained to appropriately perform their duties.

- Qualified Rigger

A. Protection from overhead loads:

a. All materials must be rigged by a qualified rigger.

b. Special precaution shall be used while lifting around members of the public. (This will be determined at the pre-lift meeting.)

c. Crewmembers are not allowed to stand underneath an overhead load at anytime.

d. Only essential crewmembers are allowed within the fall zone of a load.

e. Areas in the path of suspended loads will be cleared of any unnecessary equipment or materials.

f. Loads shall be handled as closed to the ground as is safe.

- Qualified Signal Person -Utilize Field 360 or intranet for forms for mobile crane hand signals

A. Only personnel qualified in accordance with 29CFR1926.1428 shall be allowed to signal cranes. (Must have OSHA qualified crane signaling certification card.)

B. A signal person must be provided if the operator's view is obstructed, if site specific safety concerns require it or if the operator determines that it is necessary.

C. Once a signal person begins giving signals he or she is solely responsible for the load.

D. All persons flagging cranes manually must stay in direct sight of the operator. If the operator loses sight of the flagger the lift will be immediately stopped until visual contact is made.

E. All blind lifts using radio communication shall be done utilizing a dedicated frequency.

F. Signal personals shall stand clear of loads and should avoid moving loads over employees.

G. Signal persons shall warn other crew members to stay clear of a load being lifted.

- **Assembly/Disassembly**

A. Manufacturer's procedures shall be followed during assembly/disassembly.

B. Assembly/Disassembly Director:

a. The A/D director shall meet the criteria established by OSHA for a competent and qualified person.

b. The A/D director must understand the applicable procedures to be utilized.

c. Assembly procedures shall be reviewed immediately prior to assembly unless he has specific knowledge of the equipment being assembled and has performed the task before.

d. If the A/D director or operator determines that the ground conditions do not meet the manufacturer's requirements, assembly is to stop until appropriate corrective measures have been taken.

e. Before assembly the A/D director shall ensure the crew know the following:

I. Individual tasks.

II. Hazards associated with the task to be performed.

III. Any and all hazardous positions/locations that need to be avoided.

*Please Utilize Field 360 or intranet for forms

C. Power Line Safety:

a. Before assembling or disassembling equipment, the employer must determine if any part of the load line or load (including rigging and lifting accessories) could get, in the direction or area of assembly/disassembly, closer than 20 feet to a power line during the assembly/disassembly process. If so, the employer must meet the following requirements.

I. De-energize and ground. Confirm from the utility owner/operator that the power line has been de-energized and visibly grounded at the worksite.

II. 20 Foot clearance. Ensure that no part of the equipment, load line or load (including rigging and lifting accessories) gets closer than 20 feet to the power lines by implementing the following measures.

i. Preventing encroachment/electrocution. When encroachment precautions are required the following requirements must be met:

1. Conduct a planning meeting with the Assembly/Disassembly director, operator, assembly/disassembly crew and the other workers who will be in the assembly/disassembly areas to review the location of the power lines and the steps that will be implemented to prevent encroachment/electrocution.

2. If tag lines are used, they must be nonconductive.

3. At least one of the following additional must be in place. The measure selected from this list must be effective in preventing encroachment.

4. Use a dedicated spotter who is in continuous contact with the equipment operator. The dedicated spotter must be equipped with a visual aid to assist in identifying the minimum clearance distance. Examples of a visual aid include, but are not limited to: A clearly visible line painted on the ground; a clearly visible line of stanchions; a set of clearly visible line-of-sight landmarks (such as a fence post behind the dedicated spotter and a building corner ahead of the of the dedicated spotter.)

5. Be positioned to effectively gauge the clearance distance.

6. Where necessary, use equipment that enables the dedicated spotter to communicate directly with the operator.

7. Give timely information to the operator so that the required clearance distance can be maintained.

8. A proximity alarm set to give the operator sufficient warning to prevent encroachment.

9. A device that automatically warns the operator when to stop movement, such as a range control warning device. Such a device must be set to give the operator

sufficient warning to prevent encroachment.

10. A device that automatically limits range of movement, set to prevent encroachment.

11. An elevated warning line, barricade, or line of signs, in view of the operator, equipped with flags or similar high-visibility markings.

Table A – Minimum Clearance Distances

Voltage (nominal, kV, alternating current)	Minimum clearance distance (feet)
up to 50	10
over 50 to 200	15
over 200 to 350	20
over 350 to 500	25
over 500 to 750	35
over 750 to 1000	45
over 1000	(as established by the power line owner/operator or registered professional engineer who is a qualified person with respect to electrical power transmission and distribution)

b. Determine the line's voltage and the minimum clearance distance permitted under Table A.

c. Determine if any part of the equipment, load line, or load (including rigging and lifting accessories), could get closer than the minimum clearance distance to the power line permitted under Table A. If so, then the employer must follow the requirements to ensure that no part of the equipment, load line, or load (including rigging and lifting accessories), gets closer to the line than the minimum clearance distance.

d. Assembly/disassembly below power lines prohibited. No part of a crane/derrick, load line, or load (including rigging and lifting accessories), whether partially or fully assembled, is allowed below a power line unless the employer has confirmed that the utility owner/operator has de-energized and (at the worksite) visibly grounded the power line.

e. Assembly/disassembly inside Table A clearance prohibited. No part of a crane/derrick, load line, or load (including rigging and lifting accessories) whether partially or fully assembled, is allowed closer than the minimum approach distance under Table A to a power line unless the employer had confirmed that the utility owner/operator has de-energized and (at the worksite) visibly grounded the power line.

f. Voltage information. The utility owner/operator of the power lines must provide the requested voltage information within two working days of the employer's request.

g. Power lines presumed energized. The employer must assume that all power lines are energized unless the utility owner/operator confirms that the power line has been and continues to be de-energized and visibly grounded at the work site.

h. Posting of electrocution warnings. There must be at least one electrocution hazard warning conspicuously posted in the cab so that it is in view of the operator and (except for overhead gantry and tower cranes) at least two on the outside of the equipment.

D. Additional Requirements:

a. All assembly/disassembly crew members who are engaging in work out of the operator's view in a hazardous location must inform the operator or his/her location/task. The operator must not perform a task that may endanger the crew member until they have reached a safe location.

b. Employees are not to be underneath the boom or jib while pins or similar devices are being removed.

c. Capacity limits for loads imposed on the equipment must not be exceeded.

d. All component weights shall be known prior to commencement of work.

e. Placement of blocking material to be used shall be reviewed and installed to ensure adequacy and stability of its placement.

f. At no time shall cranes to be operated outside of the manufacturer's guidelines. If the load to be imposed on the assist crane exceeds 75% of its capacity the A/D director shall follow Paric Corporation's critical lift procedures. Utilize Field 360 or intranet for forms for Critical Lift Calculation Form

g. Outriggers used during assembly/disassembly shall be full extended.

h. Pick points on booms and jib shall be established prior to movement and prevent

i. Care shall be taken that pendant lines and suspension ropes do not snag.

j. While assembling/disassembling counterweights great care shall be taken to ensure that no crew members are exposed to hazards associated with them falling or swinging.

k. All components that are integral to the safe assembly/disassembly of the equipment shall be tested prior to use.

l. No pins in the pendants are to be removed (partly or completely) while the pendants are in tension.

m. No boom pins are to be removed while the pendants are in tension.

n. No boom pins are to be removed when their removal may result in collapse due to insufficient support of the boom or of a cantilevered section.

o. Weather shall be monitored and activities stopped if a hazardous condition arises.

p. A post assembly inspection of the crane shall be performed to ensure that it is safe to operate.

PROCEDURE FOR THE TESTING AND USE OF

CRANE SUSPENDED PERSONNEL-PLATFORMS-MAN BASKETS

- SCOPE

This procedure prescribes the use, testing and restrictions for crane or derrick suspended personnel platforms - man baskets - as dictated by the Occupational Safety and Health Administration Standard [29CFR 1926.1431] and applies to all Paric operations.

- GENERAL REQUIREMENTS AND RESTRICTIONS

A. The use of man baskets to hoist workers is prohibited, except when the erection, use and dismantling of conventional means of reaching the worksite, such as a personnel hoist, ladder, stairway, aerial lift, elevating work platform, or scaffold, would be more hazardous.

B. The use of job built man baskets, skip boxes and man baskets which lack proper engineering documentation is prohibited.

C. The use of man baskets as skip boxes or the use of the man basket rigging for any other purpose is strictly prohibited.

- CRANE EQUIPMENT

A. The crane is to be in good operating condition including engine, drive train, all running and standing ropes, drums, brakes and other components.

B. The crane's rated capacity in all configurations and at all radiuses during the lift must equal or exceed twice the weight of the loaded man basket including: tools, materials and personnel.

C. Load lines must be capable of supporting, without failure, seven times the maximum intended load, except where rotation resistant rope is used, the lines must be capable of supporting without failure ten times the maximum intended load.

D. Load hooks are to be of the type that can be closed and locked eliminating the hook throat opening.

E. Cranes equipped with variable angle booms must be equipped with an operable boom angle indicator which is visible to the operator while in the seated position at the operator's station.

F. Cranes with telescoping booms must be equipped with a device or system which clearly indicates to the operator, at all times, the length of the boom, or an accurate determination of the load radius to be used during the lift must be made prior to the hoisting of personnel.

G. The crane must have a functioning anti-two-blocking device.

- CRANE OPERATION

A. The crane is to be uniformly level within one percent of grade and located on a firm footing. Cranes equipped with outriggers are to have them fully deployed when hoisting workers.

B. The crane operator is to remain alert and at the operator's station at all times while the man basket is suspended.

C. The hoisting of man baskets is to be performed in a slow, controlled and cautious manner with no sudden movements of the crane, boom, or man basket.

D. The load, hoist and swing brake/locking mechanisms must be engaged whenever the man basket is in a stationary position.

E. Man baskets can only be lowered in a power down mode. The free fall of man baskets is prohibited.

F. Hoisting of workers while the crane is traveling is prohibited.

G. The hoisting of materials on other crane load lines is prohibited while workers are suspended.

- MAN BASKET AND RIGGING DESIGN CRITERIA

A. The man basket and suspension system is to be designed by a qualified engineer in structural design.

B. The suspension system is to consist of a four point bridle and must be designed to prevent tipping of the man basket due to the movement of personnel occupying the man basket. All rigging components (i.e. wire rope, shackles, etc.,) must be capable of supporting, without failure, five times the maximum intended load to be transmitted to that component. All wire rope slings must be fabricated with thimbles.

C. The man basket must be capable of supporting at least five times the maximum intended load.

D. All welding on the man basket and its components is to be performed by a qualified welder familiar with the weld grade types and materials specified in the man basket design.

E. The man basket must be conspicuously posted with a plate or other permanent marking which indicates the weight of the man basket and its rated load capacity or maximum intended load.

F. Additional overhead protection should be provided on the man basket if the possibility exists of workers within the man basket being struck by falling objects.

G. Tag lines shall be attached to the man basket unless their use creates an unsafe condition.

- MAN BASKET LOADING

A. Man basket loads cannot exceed the rated load capacity of the man basket, the man baskets rigging, nor the rated load capacity of the crane and its components.

B. The number of workers occupying the man basket can be no more than is required for the work being performed.

C. Man baskets can only be used for the hoisting of workers, their tools and the materials necessary to do the work.

D. All materials and tools for use during the lift should be evenly distributed and secured within the confines of the basket while the man basket is suspended.

- EMPLOYEE SAFETY PRACTICES

A. Workers are to keep all parts of the body within the man basket during raising, lowering and positioning operations. This provision does not apply to an occupant of the man basket performing the duties of signal person.

B. Employee's are prohibited from entering or exiting suspended man baskets except when the basket has been secured to the structure. Securing to the structure may be waived if it creates an unsafe condition; however, additional fall protection must be utilized. This will be determined by Qualified person.

C. Hoisting of workers is to be discontinued upon indication of any dangerous weather conditions or other impending danger.

D. Except over water, workers within the basket are to use a harness system with lanyard appropriately attached to the load block or overhaul ball, or to a structural member of the man basket capable of supporting a fall impact for workers using the anchorage. When working over water the requirements of 29CFR 1926.106 shall apply.

E. Workers being hoisted must remain in direct sight of and in direct communication with the crane operator or the signalman. In the event 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 by radio, may be used.

F. Work in close proximity to electrical distribution lines requires advance notification of the electric utility in order to arrange for the de-energizing and grounding of the lines or the installation of additional line protection.

- PROOF TESTING, TRIAL LIFT AND INSPECTION

A. A proof testing lift shall be conducted on each job site prior to the hoisting of workers and following the repairs or modification of the man basket. Proof testing shall involve:

a. Loading the man basket to 125% of its rated load capacity in an evenly distributed manner.

b. Holding the loaded man basket suspended for five minutes.

c. Following the landing of the man basket an inspection by a competent person is to be conducted for defects and deficiencies in the man basket and its components.

In the event defect(s) or deficiencies are detected, the man basket must be repaired and/or its components replaced. Proof testing is to be repeated until such time that the man basket and its components are considered safe for the hoisting of workers. (Proof testing may be conducted in conjunction with the trial lift procedure described in paragraph 8.2 of this procedure).

B. Trial Lift

a. Immediately prior to the actual hoisting of workers a trial lift of the unoccupied man basket must be conducted. The trial lift is to commence from ground level or other location where workers will enter the man basket. The crane operator must hoist the man basket from that location to all locations along the lift route where the man basket is to be hoisted and positioned. A single trial lift may be performed at one time for all locations to be reached from a single crane set up location. Requirements for the trial lift are as follows:

I. The unoccupied man basket must be loaded to its anticipated lift weight - including the weight of workers, tools and materials. (Tools and materials to be used during the actual lift may be used with additional weight added to simulate occupant weight).

II. The operator is to determine that all crane systems, controls and safety devices are activated and functioning properly; that no interferences exist; and that all crane configurations to reach each work location do not exceed 50% of the cranes rated load capacity.

b. The trial lift must be repeated whenever the crane is moved and set up in a new location, returned to a previously used location, or the crane is used to hoist loads other than the man basket. Additionally, the trial lift must be repeated when the lift route changes unless the operator determines that the route change is not significant (i.e. would not affect the safety of the hoisted workers).

c. After the trial lift and just prior to hoisting workers, the man basket must be hoisted a few inches and inspected to ensure that it is secure and properly balanced. Workers cannot be hoisted unless the following conditions are found to exist:

I. Hoist ropes are to be free of kinks.
II. Multipart lines cannot be twisted around each other.
III. The primary attachment must be centered over the man basket.
IV. The hoisting system must be inspected if the load line is slack to ensure all lines are properly stated on the drum and in sheaves.

d. Immediately following the trial lift and inspection of the crane, and its support base/ground a competent person must determine whether testing has exposed any defect or adverse effect on the component or structure. Any defects, which are found, are to be corrected prior to hoisting workers.

- PRE-LIFT MEETING

A. A pre-lift meeting attended by all personnel involved in the hoist [i.e. crane operator, signal person(s) and workers to be hoisted] must be conducted by the job supervisor. The meeting must include a review of all applicable parts of paragraph (g) of OSHA standard 29CFR 1926.1431 and the procedures to be followed during the lift.

B. This meeting is to be held prior to the trial lift at each work location and must be repeated for any worker newly assigned to the operation.

The Man Basket Checklist can be found in the attachments section.

- DOCUMENTATION

A. The following documentation shall be maintained and/or generated on the job site while man basket lifts are in progress:

a. All design drawings and certifications for the man basket should be available upon request.

RESPIRATORY PROTECTION PROGRAM

Respirators shall be provided by Paric when such equipment is necessary to protect the health of the Employee. Paric shall provide the respirators which are applicable and suitable for the purpose intended. In such instances, the Project Staff shall be responsible for the written Respiratory Protective Program which shall be established with the assistance of the Safety Director.

I. PURPOSE

To establish a Respirator Program in accordance with OSHA Respirator Standard (29 CFR 1910.134). Control of airborne contaminants is accomplished, when feasible, by accepted engineering controls. When effective engineering controls are not feasible or while they are being implemented, approved respirators are used.

II. GENERAL

A. The Respiratory Protection Program is designed to protect Employees from airborne contaminants.

B. A Manager/Superintendent is assigned to coordinate the program.

III. PROGRAM REQUIREMENTS

A. Each Project that is going to use respirators shall appoint a Manager/Superintendent to be responsible for implementing the Respirator Program in an effective manner.

B. The Manager/Superintendent must maintain written procedures.

C. The Manager/Superintendent must complete the Worksite Specific Respiratory Protection Plan, prior to the start of any work requiring respiratory protection.

D. Personnel must only wear respirator equipment approved by the Manager/Superintendent.

E. Personnel must be issued their own respirators when practical.

F. Respirators must be kept in a clean, sanitary condition.

G. The Manager/Superintendent must provide convenient, sanitary storage for each respirator.

H. All respirators must be periodically inspected, cleaned and sanitized in accordance with standards and this program.

I. Approval must be obtained from the Jobsite Health Service Consultant(s) for any Employee to use a respirator. The Health Service Consultant must be established prior to Project start-up. This to be coordinated with the Safety Director.

J. The Respirator Protection Program must be evaluated annually by the Safety Director to determine its effectiveness.

K. Employees must leave work area that requires respirator use to wash, change cartridges or they detect a break-through or resistance.

L. Working in IDHL atmosphere is not allowed for Paric Employees.

M. All respirator users must be trained and fit tested, except as follows: If disposable dust masks are approved and used only at the desire of workers when exposure levels are below permissible limits, the Manager/Superintendent may allow optional use without implementing the entire program procedures.

IV. SAFETY MANAGER/SUPERINTENDENT RESPONSIBILITY

A. The Manager/Superintendent is responsible for administration of the Respiratory Protection Program as described below.

1. Provide a site summary of locations or job descriptions where Employees must wear respirators and under what conditions (normal or emergency).

2. Maintain facilities and procedures for fit testing.

3. Coordinate training for both new and experienced Employees.

4. Establish care and maintenance requirements for individually assigned respirators.

5. Establish procedures for Health Service Consultants' approval of Employee use of respirators.

6. Audit care and use of respirators.

7. Consult with the Paric Safety Manager or Industrial Hygienist Consultant to:

   a. Determine if airborne contaminant levels have changed, which would require a change in respirator use or type used.
   b. Provide guidance on types of respirators to be used.
   c. Approve types of filters, canisters and cartridges used with respirators.

B. Maintaining fit test, training and medical approval records.

V. RESPIRATOR SELECTION

The Manager/Superintendent will select all respiratory protection devices and maintain a listing of approved respirators for existing applications. Only those respirators approved by the Safety Manager/Superintendent may be used.

VI. TRAINING

A. The Manager/Superintendent is responsible for the training of Employees in the Respirator Program relative to their responsibilities. This consists of classroom sessions with visual aids as well as hands on training. The Manager/Superintendent shall ensure each Employee can demonstrate knowledge of the following:

1. Why the respirator is necessary and how improper fit, usage, or maintenance can compromise the protective effect of the respirator.

2. The limitations and capabilities of a respirator.

3. How to inspect, put on and remove, use and check the seals of a respirator.

4. What the procedures are for maintenance and storage of the respirator.

5. How to recognize the medical signs and symptoms that may limit or prevent the effective use of respirators.

B. Retraining shall be conducted annually, and when the following situations occur:

1. Changes in the workplace that renders previous training obsolete.

2. Inadequacies in the Employee's knowledge or use of the respirator.

C. Training shall be documented. Copies of all fit testing, training and inspections shall be maintained on site and will be available upon request

MEDICAL EVALUATION AND FIT TESTING

A. Every Employee who is being considered for inclusion in the Respirator Protection Program must participate in a medical evaluation. A determination is made initially upon employment, or change into a job classification requiring respiratory protection, and every 24 months thereafter.

B. The Employee will fill out the Medical Questionnaire for Respirator Users, which will be reviewed by a physician. If the physician deems it necessary, the Employee will receive an examination. The purpose of the questionnaire and the examination is to assure that the Employee is physically and psychologically able to perform their work while wearing respiratory equipment. If the physician denies approval, the Employee will not be able to participate in the Respiratory Program.

C. Each respirator user and potential user is fit tested by the Health Service Consultant to assure proper face to face piece seal. The Employee must be fit tested with the name make, model, style and size of respirator that will be used.

D. Qualitative fit testing may only be used to fit test negative pressure respirators that must achieve a fit factor of 100 or less.

E. Quantitative fit testing must be used for tight fitting half face pieces when the fit factor is equal to or greater than 100 and equal to or greater than 500 for tight fitting full face pieces. Respirator users are to be fit tested annually. In the case of any facial structure change, such as surgery or dental changes, the user must then be refitted.

G. Each time a respirator is donned, the user must:

1. Check to see that it is properly sealed and will not loosen during use.

2. Leak test the respirator according to established procedures. (Positive and negative pressure fit check)

H. Respirators must not be worn when conditions prevent face piece to face seal.

1. Employees required to use a respirator are not allowed to have a beard, sideburns, or mustache that passes between the face and the sealing surface of the respirator.

2. Any Employee with a facial condition that prevents a proper seal (missing dentures, growths, severe acne, one day beard, etc.) must not be allowed to perform duties that require the use of a respirator until that facial condition is corrected.

(Note: Acceptable fit testing methods are outlined in OSHA 1910.134, Appendix A. Your Health Service Consultant should be familiar with these).

II. INSPECTION AND MAINTENANCE

A. Respirators must be inspected as follows:

1. All respirators used must be inspected by the user before and after use, and during cleaning.

2. Emergency respirators must be inspected at least once a month, as well as after each use, with records maintained of inspection dates and findings.

B. Respirator inspections must include the following:

1. Check condition of face piece, headbands, valves, connection tabs and cartridges. Replace defective parts or take respirator out of service.

2. Gently stretch rubber or elastomer parts to detect cracks or deterioration.

3. Check tightness of connections.

4. Check cleanliness.

C. Only trained persons may make repairs with parts supplied for that respirator. Only those repairs recommended by the manufacturer may be made.

D. The user will change cartridges on air purifying type respirators. Check the manufacturer recommendations for different filter life guidelines. Industry accepted guidelines suggest changing the cartridge when breathing becomes difficult or when chemical odor is detected, both indicate that the cartridge is at the end of its useful life.

III. CLEANING

A. Respirators shall be maintained in a clean, sanitary condition. Individually assigned respirators shall be cleaned after each day's use. Respirators issued to more than one Employee shall be cleaned and disinfected before being worn by different individuals.

B. During cleaning, the respirator is disassembled, inspected, repaired (if necessary), thoroughly washed and disinfected.

C. Respirators are to be cleaned in warm water not to exceed 110 degrees F (110°F), using a mild detergent and disinfecting agent, and air dried.

IV. STORAGE OF RESPIRATORS AND CARTRIDGES

A. Respirators must be stored so that no pressure is placed on the face piece and exhalation valve. Improper storage can deform the face piece and create a poor sealing surface. The straps must not be stored inside the face piece. Respirators must be protected against dust, sunlight, hot, extreme cold, excessive moisture, and damaging chemicals.

B. Organic Vapor Cartridges may be left installed in the face piece, if desired, and stored in the storage container. There is low potential for contamination of the face piece and the storage container because the cartridge filtering media absorbs the contaminant.

C. Dust/Fiber Cartridges may be returned to the cleaned face piece as long as they are covered with protective cartridge covers. If protective covers are not used, the cartridges must be removed from the face piece and stored in plastic bags. The face piece and the bagged cartridges should be stored together in the storage container.This step is recommended because of some potential for

contamination if the face piece is stored with cartridges still installed.

V. OPTIONAL USE

A. If the use of filtering face pieces (dust mask) are provided at the Employee's request when exposure levels are below permissible limits, all phases of the Respirator Program do not have to be followed. Dust mask (filtering face piece) use will be allowed on approved job descriptions where respirator use is not required.

(Note: Appendix D of OSHA 1910.134 is mandatory information for Employees using respirators when not required under the standard.)

VI. DEFINITIONS

A. Health Service Consultant: Third Party Consultant responsible for administrating the Pulmonary Function Test and Respirator Evaluation Questionnaire and fit testing, as requested.

B. Industrial Hygienist Consultant: Third Party Consultant responsible for determining on site atmospheric hazards.