

**CONTRACTORS SAFETY
PROGRAM**

TABLE OF CONTENTS

GENERAL SAFETY PROGRAM	PAGE 2
UPPER MANAGEMENT RESPONSIBILITIES	PAGE 3
SAFETY COORDINATOR'S RESPONSIBILITIES	PAGE 4
PROJECT MANAGERS RESPONSIBILITIES	PAGE 5
JOB SUPERINTENDENT'S RESPONSIBILITIES	PAGE 6
GENERAL EMPLOYEE RESPONSIBILITIES	PAGE 8
ACCIDENT INVESTIGATION	PAGE 9
ACCIDENT INVESTIGATION REPORT	PAGE 11
GENERAL SAFETY RULES	PAGE 12
PRE-PROJECT PLANNING	PAGE 14
EMPLOYEE SAFETY ORIENTATION AND TRAINING	PAGE 16
MEDICAL AND FIRST AID	PAGE 18
WHAT TO DO DURING AN OSHA INSPECTION	PAGE 19
GENERAL WORK RULES	PAGE 21
FIRE PROTECTION, PREVENTION AND EMERGENCY PRACTICES	PAGE 37
FIRE PREVENTION PROGRAM	PAGE 39
LOCK-OUT AND TAG-OUT PROGRAM	PAGE 41
CONFINED SPACE ENTRY PROGRAM	PAGE 43
EMERGENCY RESCUE PLAN	PAGE 46

GENERAL SAFETY PROGRAM

SAFETY POLICY

It shall be the policy of _____ to conduct all operations in a manner that will prevent injuries to persons and damage to (or loss of) property.

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

We will endeavor to maintain a safe and healthful work place. We will provide safe working equipment and necessary personal protective equipment. In the event of injury, we will provide the best first-aid and medical services available, investigate the causes and take effective actions to prevent recurrences.

It shall be our objective to never willfully violate, but rather to always comply with all codes, standards, laws, regulations, and generally-accepted safe practices as they apply to our operations.

To accomplish these efforts, the control of accidents shall be considered an integral part of any operational activity and not as a separate program functioning independently of other activities. This is consistent in regard to safety meetings as well, since they should be timely training sessions with subjects relating to work in progress. The present lines of responsibility that are now used for other operational or production functions shall be followed for accident control functions.

Every employee, manager and supervisor at all levels shall be held responsible and accountable for maintaining a maximum level of safety performance in all phases of accident control efforts in the operations they perform.

The reduction of accidents, illness and property damage 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.

President

UPPER MANAGEMENT RESPONSIBILITIES

- Require aggressive application of the safety program at all levels of employment.
- Occasionally spot check accident investigation reports, inspection forms and other aspects of this program to ensure that it conforms to the spirit of the basic policy.
- Whenever possible take an active part in the program to evidence management's interest and involvement.
- When and where applicable, because of losses or severe exposures, make formal safety inspections and require the necessary corrective actions.
- Assume final responsibility for the effectiveness of this program.
- Frequently attend the monthly safety dinner meetings.

SAFETY COORDINATOR'S RESPONSIBILITIES

- Be familiar with OSHA requirements and other applicable laws and standards. Aid line management in gaining compliance therewith.
- Constantly review and improve this program.
- Keep files of all safety related forms, statistics, references and correspondence and keep management informed of the progress of the program.
- Guide management, supervision, purchasing, engineering and all other functions to interface with employee safety.
- Maintain accident records that reflect both the overall effectiveness of this program, the trends and repetitive accident causes.
- Develop employee and supervisory safety training programs that respond to evidenced needs and OSHA requirements.
- Fully utilize outside sources of help such as the insurance carrier, insurance broker, AGC, OSHA, etc.
- When necessary, accompany superintendents and foremen on inspection tours in order to give special emphasis to high hazard situations. Keep routinely informed on general safety conditions and upgrade superintendent's and foremen's skills.
- Coordinate safety presentations at safety dinner meetings.
- Develop job site fire protection plans including such subject matter as notification of the fire department, use of portable fire extinguishers, guiding fire fighters to the scene, evacuation of fire-involved and threatened areas, control of flammable liquids and gases, etc.

PROJECT MANAGER'S RESPONSIBILITIES

- Be thoroughly familiar with this program and aggressively apply it on your job. Know the safety program and its specific requirements for yourself and those reporting to you.
- Perform those tasks assigned to you in this program in a manner that will motivated those reporting to you to reflect you interest and enthusiasm.
- Know the accident experience of your job. Discuss corrective action with your Superintendent and follow through.
- Participate in the investigation of all serious injuries, fatalities, major property losses and equipment breakdowns on your jobs.
- Arrange for all necessary personal protective equipment on the job site.
- See that proper emergency first aid and medical treatment are ready and available.
- Set the best possible safety example for all persons on the job site.
- Maintain a job safety file for all inspection reports, accident investigation reports and other related data. Forward copies to the Safety Coordinator.
- Frequently attend the monthly safety dinner meetings.

JOB SUPERINTENDENT'S RESPONSIBILITIES

- Be thoroughly familiar with this program and aggressively apply it on your job. Know the safety program and its specific requirements for yourself and those reporting to you.
- Perform those tasks assigned to you by this program in a manner that will motivate and reflect your interest and enthusiasm.
- Know the accident experience of your job. discuss, document and follow through with corrective action with your Project Manger.
- A comprehensive safety inspection of your job site is expected each month. Fellow employee is to accompany you on this tour, rotating personnel so that all are involved. Take direct action to control unsafe acts or conditions, but if you sense a lack of authority, report in writing to your Project Manger.
- The necessary personal protective equipment is to be made available on the job site and is to be kept in good condition. See that employees use the proper personal protective apparel for the conditions they are exposed to.
- See that proper emergency first aid and medical treatment are ready and available.
- Personally see that craftsmen perform inspections required by OSHA standards. Require that they notify you when defects are noted.
- Make the best possible use of safety motivational materials for employees.
- Set the best possible safety example for all persons on the job site.
- Maintain a confidential safety file for all inspection reports, accident investigations reports, new employee safety orientation reports and other related data.
- Thoroughly investigate each employee accident, each case of significant material or equipment damage and each case of mechanical breakdown. Forward copies to your Project Manager.
- Inspect all equipment from the warehouse or yard. Do not allow use of any equipment that you deem unsafe or not in compliance with OSHA standards. Immediately report defects to the Project Manager after tagging such equipment out of service.
- Enforce safety rules strictly and fairly.

- Perform the new employee safety orientation, continuing training tasks and toolbox talks assigned to you in this program.
- Attend the monthly safety dinner meetings.

GENERAL EMPLOYEE RESPONSIBILITIES

- Observe all safety rules and regulations at all times. Always be alert to safety as it related to your job.
- Immediately correct any unsafe conditions that you encounter. If this is not possible, report the condition to your immediate supervisor.
- Always look out for the welfare of other employees - concern yourself with **EVERYONE'S** safety.
- Make it a point to know how to operate all safety and personal protective equipment - do not use the equipment without such knowledge.
- Do not operate any equipment or use any tool unless you fully understand how to use it.

ACCIDENT INVESTIGATION

A person who makes a mistake and does nothing about it has already made their second mistake.

Accidents should be investigated as soon after the occurrence as possible in order to determine the causes (unsafe conditions and unsafe actions) and to initiate necessary corrective action.

Accident reports are to be filled out by the Superintendent immediately after the occurrence of an accident resulting in injury or property damage. Accident forms can be obtained from Missouri Employers Mutual Insurance Company. A copy of this form is presented on the following page. Copies of the form are to be kept in the job site safety files at all times.

When completing the form, obtain as many details as possible and then compare all the facts to obtain the correct version of how and why the accident occurred - then promptly take the necessary action to prevent a similar accident from happening again. That action is to be documented.

The completed report must be reviewed by the Project Manager & Safety Coordinator, who must return those not completely filled out. One copy is to be retained on the job and one is to be sent to the office.

Additional accident record keeping and reporting requirements are as follows:

- A. Each employer shall maintain in each establishment a log and summary (OSHA Form No. 300 or equivalent) of all recordable injuries and illnesses (resulting in a fatality, hospitalization, lost workdays, medical treatment, job transfer or termination, or loss of consciousness) for that establishment, and enter each recordable event no later than six working days after receiving the information. Where the complete log and summary records are maintained at a place other than the establishment, a copy of the log shall be available at the experience of that establishment complete and current to a date within 45 calendar days.
- B. In addition to the log of occupational injuries and illnesses, each employer shall have available for inspection at each establishment within six working days after notification of a recordable case, a supplementary record (OSHA Form No. 101 or the State Of Missouri First Report of Injury form) for each occupational injury or illness for that establishment.

- C. Each employer shall post an annual summary of occupational injuries and illnesses for each establishment, compiled from the collected Form 200's and including the years totals, calendar year covered, company name, establishment name and address, certification signature, title, and date. A form OSHA No. 200 shall be used in presenting the summary. The summary shall be posted by February 1, and shall remain in place until March 1.
- D. The log and summary, the supplementary record, and the annual summary shall be retained in each establishment for 5 years following the end of the year to which they relate. Records shall be made available, as authorized, upon request.
- E. Within 48 hours after its occurrence, an employment accident which is fatal to one or more employees or which results in the hospitalization of five or more employees shall be reported by the employer, either orally or in writing, to the nearest OSHA Area Director.

Accident Investigation Report

Injured employee _____ **Department** _____

Date of Injury _____ **Last Day Worked** _____ **Accident Time** _____

Witnesses _____

Engaged in what work when injured? _____

Nature and extent of injury _____

Name and address of doctor or hospital _____

Description of accident _____

What unsafe condition or act caused accident? _____

What action have you taken to prevent similar accidents? _____

Recommendations for additional action _____

Foreman and Dept. _____ **Date** _____

GENERAL SAFETY RULES

The following is a condensed list of general safety rules typical to construction. It is by no means complete - the code of Federal Regulations, 29 part 1926 is to be consulted for specific requirements.

- Injury to yourself, others, or damage to property must be reported immediately to the foreman.
- Do not take unnecessary chances or work under hazardous conditions.
- Report all unsafe conditions to your foreman.
- Do not use unsafe tools and equipment.
- Your suggestions for improving job conditions are always welcome, so let's have them.
- If you are in doubt about the safe or proper way to do a job, get instructions from your foreman or supervisor before you proceed with it.
- Horseplay is not permitted. Do not distract or interfere in any way with a person performing their job.
- Be continually alert for unsafe ladders, scaffolding and other elevated work areas. Report defects to your foreman.
- Utilize all required personal protective apparel as directed.
- **Immediately** replace or repair guardrails and other safeguards whenever you note them to be out of place or missing.
- Practice good housekeeping. Wherever possible clean up after yourself. If proper facilities are not available, request them.
- Inspect all equipment before using. Report defects.
- Use or possession of alcoholic beverages or drugs on the job site is forbidden. Workers reporting under the influence of alcohol or controlled substances will not be allowed to work. (Penalties will be enforced up to and including discharge.)

- Wear hard-hats whenever there are any moving objects or work overhead.
- Attend monthly safety dinner meetings.

Signature, Supt.: _____

Employee: _____

PRE-PROJECT PLANNING

(Coordinator, Project Manager, Job Superintendent)

Establishing standard safe work procedures for your job site requires a study of the hazards associated with each specific project. From this study, the work methods and protection necessary to make the work safer can be developed along with their cost. A careful study should be made during the estimating and planning stages of each project. (Planning extends through all phases of the operation.) Verify that all equipment usage is suitable to achieve management-stated loss control goals.

There are three main phases that should be considered:

- Preparation (making ready or setting up)
- Operation (actual construction)
- Disposal (the transport of either the product created or the materials or waste related to it)

All applicable government regulations should be considered in the pre-project planning:

First aid or medical facilities

Location of workers, materials and equipment

Clearing of land

Movement of supplies, equipment and vehicles

Storage facilities

Personal facilities

Work areas and surfaces

Mechanical equipment and guarding

Housekeeping and sanitation

Hand tools and power tools

Fire protection and control

Occupational disease prevention

Machinery and equipment maintenance

Personal protective equipment

Electrical safety

Protection of the public.

Each of the above noted managers must review these items at the stage in which the employee becomes involved with a job.

EMPLOYEE SAFETY ORIENTATION AND TRAINING

Safety Rules

Superintendents must discuss the list of safety rules with each new employee. The reasons for each rule must be explained as must the disciplinary action that will be applied for failure to comply.

The form shown in Section VIII must be completed and, after orientation is completed, signed by both parties.

This form must then be routed to the employee's personnel file at the office.

Toolbox Talks

Toolbox talks are to be held by the Superintendent on a weekly basis. During one session each week, the Superintendent is to present one "talk" from the Tool Box Talk collection. Any hazardous materials that will be used on the job must also be discussed. The time at which these meetings are held is up to the Superintendent.

To confirm the meeting, the Superintendent will then list the lessons covered, hazardous materials discussed (if any) and the signatures of those attending on a separate time sheet. (See time sheet example on next page). This is to be turned in with the weekly time tickets.

One copy is to remain with the superintendent in the field with the JOB SITE file and one copy is to go to the Project Manager, who files it in the office file folder entitled "Tool Box Safety Meetings" for that project.

Subcontractors are welcome to attend these meetings.

Short Safety Reminder

Each foreman must contact at least one employee per day for a short safety reminder. These must not result from unsafe acts of employees, but must be in addition to the foreman's ever present responsibility to correct all noted unsafe acts.

Training Programs

Foremen and Superintendents may occasionally be assigned short, formal training programs to present the employees. The safety director will provide the necessary meeting guides and forms. These are to be performed as soon as possible after receipt. The forms must be filled out and returned to the Safety Director.

NO. OF JOB _____ DATE _____

CRAFT _____

Rates and Hours

NAME								
TOTALS								

DISTRIBUTION

TOTALS								

SIGNED: _____
FOREMAN

MEDICAL & FIRST AID

In the interest of personnel welfare, prior to the start of all jobs the Project Manger shall prearrange for medical treatment with hospitals or clinics nearest to the site. The phone numbers of doctors or hospitals, ambulance, fire department and police will be posted on all job sites.

First aid supplies will be provided for each project. They will be stored in a proper manner and will be easily recognizable and readily accessible.

General first aid rules begin with the idea of remaining calm in order to quickly size up an injury. In the case of an injury, immediately take care of the most important concerns, such as severe bleeding or stoppage of breath, and remove the injured person if at risk of additional injury at the present location. Try to keep the victim lying down and comfortable and call or arrange for trained medical help to come to the site. Otherwise, when the patient is "ambulatory", transport him to the nearest medical source for help.

Employees must report all accidents, even of a minor nature, immediately to their supervisors.

First aid information will be provided to the Superintendent by the Safety Coordinator. This information is to be kept in the project Safety/Hazcom file and available to all employees at all times.

WHAT TO DO DURING AN OSHA INSPECTION

The function of the OSHA Compliance Officer is to identify, measure and photograph conditions and/or acts which they consider unsafe and in violation of the construction safety regulations. In the pursuit of their duties, they may go wherever they wish on the project. They may take samples or measurements, and request copies of literature, documents or contracts relating to safety or industrial hygiene.

The Compliance Officer may not violate any known safety regulations and is responsible for providing and wearing personal safety equipment as needed. Failure to comply with the project safety program is cause for not permitting a Compliance Officer onto the site or for stopping an inspection already underway.

Upon arrival at the job site, the Compliance Officer will present identification and state the purpose of the visit. An opening conference is then held with representatives from all contractors on site, union stewards and construction managers.

During the conference the inspector will:

- State the nature of his inspection - i.e. general complaint, random inspection, etc.
- State the approximate time he or she will be on site.
- Request copies of safety programs, accident reports and inspection surveys. The employee may not review any contractor documents other than the General Conditions and similar front-end documents.
- Approve members of the inspection party. Each employer has the right to representation; the Compliance Officer has the right to choose the representative.
- Generally discuss the purpose of the OSHA Act, its sanctions, and the authority vested in him by the Act.
- Advise that at the conclusion of the inspection, a closing conference will be held to advise of any alleged violations noted and to determine corrective measures and answer questions.

During the inspection:

- The Superintendent should call the Project Manager immediately. The Project Manager and Safety Coordinator will come out to the job site if possible, and the inspector would be asked to wait until they arrive. If the inspector will not wait, remain with them as they conduct the inspection. Do not volunteer any information.
- Do not permit unneeded contractor employees to linger near the inspection party.
- Do not harass, threaten or otherwise intimidate the Compliance Officer.
- The employer has the right to protect “trade secrets”.
- Keep a chronological record of where the Compliance Officer goes, how long he or she talks to employees, and whether he or she returns to a location previously inspected. When photographs are taken, ask the nature of the suspected violation and record. (Ideally, similar pictures should also be taken for your record.)

At the completion of the inspection, the Compliance Officer will either hold a general meeting or meet with each individual contractor. The contractor representative should attempt to attend all meetings if held individually for the purpose of recording each contractor’s alleged violation. **NEVER ADMIT RESPONSIBILITY FOR A HAZARD NOR OFFER TO CORRECT HAZARDS CREATED BY OTHERS.**

GENERAL WORK RULES

The following is a collection of general rules concerning hazards typical in construction, as taken from the U. S. Government Digest of construction Industry Safety and Health Standards. It is by no means complete - it is meant to provide quick information on typical hazards. The Code of Federal Regulations, 29 part 1926 is to be consulted for specific requirements. Each job site safety/hazcom file has a copy of this manual.

Abrasive Grinding

Abrasive wheel grinders must have safety guards strong enough to withstand bursting wheels. Adjust work rests on bench and pedestal grinders to a clearance not to exceed 1/8 inch between rest and wheel surface. Inspect and ring test abrasive wheels before mounting. Always leave wheel in working condition for next user. Properly dress wheel before using and/or when finished.

Access

Only safe means of access to and from work areas will be used. Jumping is not allowed nor sliding down cables, ropes or guys.

Air Tools

Secure pneumatic tools to hose in a positive manner to prevent accidental disconnection. Install and maintain safety clips or retainers on pneumatic impact tools to prevent attachments from being accidentally expelled. All hoses exceeding 1/2 inch inside diameter require automatic shut-off device at source of supply to cut off pressure in case of hose failure.

Attitude

All company employees are required to treat safety as a number one priority. As such they are expected to report to work in good mental and physical condition to safely perform their assigned duties. Before starting any task employees must consider the possible effects of their actions on themselves and others and take appropriate protective measures.

Belt Sanding Machines

Belt sanders will not be used without guards in place.

Compressed Air, Use of

Compressed air used for cleaning purposes may not exceed 30 psi and then only in conjunction with effective chip guarding and personal protective equipment. Exception to 30 psi are allowed only for concrete form, mill scale, and similar cleaning operations.

The use of compressed air to clean off yourself or other workers is a life threatening practice that is prohibited.

Compressed Gas Cylinders

Put valve protection caps in place before compressed gas cylinders are transported, moved, or stored. Cylinder valves will be closed when work is finished and when cylinders are empty or being moved.

Compressed gas cylinders will be secured in an upright position at all times. Keep cylinders at a safe distance or shield from welding or cutting operations. Place them where they cannot become part of an electrical circuit. Oxygen and acetylene must not be stored together.

Oxygen and fuel gas regulators must be in proper working order at all times.

Concrete, Concrete Forms and Shoring

All protruding reinforcing steel must be guarded to eliminate a hazard . Wire mesh should be secured from recoiling.

Formwork and shoring will be designed and constructed to safely support all loads imposed during concrete placement. All components will be inspected prior to erection. Drawings or plans of jack layout, formwork, shoring, working decks, and scaffolding systems should be available at jobsite.

Forms and shores may not be removed until it has been determined that the concrete has gained sufficient strength to support its weight and superimposed loads.

Electrical - Grounding

15 and 20-ampere receptacle outlets on single-phase, 120-volt circuits for construction sites which are not a part of permanent wiring of the building or structure must be protected by either ground-fault circuit interrupters or an assured equipment grounding conductor program.

An assured equipment grounding conductor program covers all cord sets, receptacles which are not a part of the permanent wiring of the building or structure and equipment connected by cord and plug.

Inspect each cord set, attachment cap, plug and receptacle of cord sets, and any equipment connected by cord and plug, except cord sets and receptacles which are fixed and not exposed to damage, before each day's use for external defects and possible internal damage. Remove from service or repair immediately any defective items.

Tests will be performed on all cord sets, receptacles which are not a part of the permanent wiring of the building or structure, and cord-and-plug-connected equipment required to be grounded. Grounding conductors will be tested for continuity. Each receptacle and attachment cap or plug will be tested for correct attachment of the equipment required to be grounded. Grounding conductors will be tested for continuity. Each receptacle and attachment cap or plug will be tested for correct attachment of the equipment grounding conductor.

Tests will be recorded. This test record must identify each receptacle, cord set, and cord-and-plug-connected equipment that passed the test, and will indicate the last date it was tested or the interval for which it was tested. No electrical tool or cord may be used unless it has been tested according to company's assured grounding program. The non-current-carrying metal parts of fixed, portable and plug-connected equipment must be grounded except those protected by an approved system of double insulation. The path from circuits, equipment, structures, and conduit or enclosures to ground must be permanent and continuous and have ample current-carrying capacity.

Equipment Operation

No employee will operate electric, gas, or hand powered tools or equipment unless familiar with use of the item and safety precautions required. Supervision will provide necessary safety information for all tasks and equipment.

Excavating and Trenching

Before opening any excavation, efforts, including utility company contact, must be made to determine if there are underground installations in the area. Underground facilities must be located and supported during excavation operation.

Walls and faces of trenches 5 feet or more in depth and all excavations in which employees are exposed to danger from moving ground or cave-in must be guarded by shoring or sloping.

Where employees may be required to enter excavations, excavated material must be stored at least 2 feet from excavation edge.

Make daily inspections of excavations. If evidence of possible cave-ins or slides is apparent, cease all work in excavation until precautions have been taken.

Trenches 4 feet deep or more require adequate means of exit such as ladders or steps, located so as to require more than 25 feet of lateral travel.

Explosives and Blasting

Only authorized and qualified persons will be permitted to handle and use explosives. Smoking and open flames are not permitted within 50 feet of explosives and detonator storage magazine.

Eye and Face Protection

Eye and face protection will be provided and must be worn when machines or operations present potential eye or face injury. Employees involved in welding operation must wear filter lenses or plates of the proper shade number. Employees exposed to laser beams must use suitable laser safety goggles that will protect for the specific wave length of the laser and be optical density (O.D.) - adequate for the energy involved.

Goggles will be worn over any employee-owned prescription glasses that do not meet industrial safety standards.

Fencing

Security fencing protects employees, the company and the general public. All fencing must be maintained by all employees to the extent of their job description. Report defects beyond your ability to repair to your supervisor.

Fire Protection

Fire-fighting equipment must be conspicuously located and readily accessible at times, and periodically inspected and maintained in operating condition. Report any inoperative or missing equipment to supervision.

If the project includes automatic sprinkler protection, installation will closely follow construction and be placed in service, as soon as applicable laws permit, following completion of each story.

Fire extinguishers, rated not less than 2A, will be provided for each 3,000 square feet of building area (or major fraction). Travel distance from any point to the nearest fire extinguisher may not exceed 100 feet with at least one extinguisher per floor. In multi-store buildings, at least one fire extinguisher must be located adjacent to stairway.

Flagmen

When signs, signals, and barricades do not provide necessary protection on or adjacent to a highway or street, flagmen or other appropriate traffic controls may be used. Flagmen will wear a red or orange warning garment. Warning garments worn at night will be of reflective material.

Flammable and Combustible Liquids

Only approved containers and portable tanks will be used for storage and handling of flammable and combustible liquids.

No more than 25 gallons of flammable or combustible liquids may be stored in a room outside of an approved storage cabinet.

No more than 60 gallons of flammable or 120 gallons of combustible liquids may be stored in any one storage cabinet.

No more than three storage cabinets may be located in a single storage area. Inside storage rooms for flammable and combustible liquids must be of fire-resistive construction, with self-closing fire doors, 4-inch sills or depressed floors, a ventilation system of at least six air changes per hour, and electrical wiring and equipment approved for Class 1, Division 1 locations.

Storage in containers outside buildings may not exceed 1,100 gallons in any one pile or area. Grade storage areas to divert possible spills away from building or other exposures, or surround with a curb or dike. Locate storage areas at least 20 feet from any building and keep free from weeds, debris, and other combustible materials.

Keep flammable liquids in closed containers when not in use.

Post conspicuous and legible signs prohibiting smoking in service and refueling area.

Floor Opening, Open Sides, Hatchways, Etc.

Guard openings with a standard railing and toeboards or cover. Provide railing on all exposed sides, except at entrances to stairways.

Every open-sided floor or platform, 6 feet or more above adjacent floor or ground level, must be guarded by a standard railing, or the equivalent, on all open sides except where there is entrance to a ramp, stairway, or fixed ladder.

Runways 4 feet high or more need standard railings on all open sides.

Guarded ladderway floor openings of platforms with standard guardrails and standard toeboards on all exposed sides, except at entrance to opening, with passage through the railing provided by a swinging gate or offset so a person cannot walk directly into an opening.

Temporary floor openings will have standard railing or effective covers.

Floor holes into which persons can accidentally walk will be guarded by either a standard railing with standard toeboard on all exposed sides, or a standard floor hole cover.

While the cover is not in place, the floor hole will be protected by a standard railing.

Gases, Vapors, Fumes, Dusts, and Mists

Exposure to toxic gases, vapors, fumes, dusts, and mists at a concentration above those specified in the "Threshold Limit Values of Airborne contaminants" of the AGCY. should be avoided.

When engineering and administrative controls are not feasible to achieve full compliance, protective equipment or other protective measures will be used to keep the exposure of employees to air contaminants within the limits prescribed. Any equipment and technical measures used for this purpose must be reviewed for each particular use by a technically qualified person. Employees will wear all furnished equipment at all times.

Hand Tools

Employees will not use unsafe hand tools. Wrenches may not be used when jaws are sprung to the point that slippage occurs. Keep impact tools free of mushroomed heads. Keep wooden tool handles free of splinters or cracks and tight in the tool.

Electric power-operated tools will be either approved double insulated, they will be properly grounded, or they will be used with ground fault circuit interrupters.

Hard Hats

Hard Hats will be worn at all times on construction sites where there are moving objects or work overhead.

Hazard Communication

Employees will receive training in their rights, duties and responsibilities under the Hazardous Communication Standard. A copy of the company's program and the standard will be made available to all employees on request. Employees will review material safety data sheets when working with a hazardous material for the first time and anytime thereafter when a question arises. Safety precautions outlined on Material Safety Data Sheets are to be followed. (For additional information see Hazard communication Program.)

Hearing Protection

Hearing Protection will be worn in areas where sound levels may exceed 85 decibels.

Heating Devices, Temporary

Fresh air must be present in sufficient quantities to maintain safety for workers. Solid fuel salamanders are prohibited in buildings and on scaffolds.

Hoists, Material and Personnel

Rated load capacities, recommended operating speeds, and special hazard warnings or instructions posted on cars and platforms must be heeded. Material hoistway entrance hoists will be protected of personnel hoists will be not less than 6 feet 6 inches high, operated from the landing side and are accessible only to persons on the car. Provide overhead protective covering on the top of the hoist cage or platform.

Horseplay

All disruptive activities usually referred to as horseplay are forbidden. No practical jokes or fights will be tolerated.

Housekeeping

Form and scrap lumber with protruding nails and all other debris will be kept clear from work area. Remove combustible scrap and debris at regular intervals. Containers will be provided for collection and separation of all refuse. Covers are required on containers used for Flammable or Harmful Substances.

At the end of each portion of work return all tools and excess material to proper storage. Clean up all debris before moving on to the next phase. Each employee is responsible for keeping his own work areas clean.

Illumination

Construction areas should be lighted to not less than minimum illumination intensities listed while work is in progress.

Foot-Candles: Area or Operation

- 5 General construction area lighting. General construction areas, concrete placement, active storage areas, loading platforms, refueling, and field maintenance areas and stairways.
- 5 Indoor: warehouses, corridors, hallways and exit ways.
- 5 Tunnels, shafts, and general underground work areas: (Exception: minimum of 10 foot-candles is required at tunnel and shaft heading during drilling, mucking, and scaling. Bureau of Mines - approved cap lights shall be acceptable for use in the tunnel heading).
- 10 General construction plant and shops (e.g., batch plants, screening plants, mechanical and electrical equipment rooms, carpenters shops, rigging lofts and active storerooms, mess halls, indoor toilets, and workrooms).

Injuries

All injuries - even those that seem slight - will be reported immediately to your supervisor.

Jointers

Every hand-fed planer and jointer with a horizontal head must be equipped with a cylinder cutting head. Keep opening in the tables as small as possible. Each hand-fed jointer with a horizontal cutting head must have an automatic guard to cover the section of the head on working side of fence or cage. Guards may not be removed.

A proper jointer guard will automatically adjust itself to cover any unused portion of the head and will remain in contact with material at all times. Each hand-fed jointer with horizontal cutting head must have a guard which will cover the section of the head back of the cage or fence.

Ladders

The use of ladders with broken or missing rungs or steps, broken or split side rails, or with other faulty or defective construction is prohibited. When ladders with such defects are discovered, withdraw them from service immediately. Place portable ladders on a substantial base at a 4-1 pitch, have clear access at top and bottom, extend a minimum of 36 inches above landing, or where not practical, provide grab rails. Secure against movement while in use.

Portable metal ladders may not be used for electrical work or where they may contact electrical conductors.

Job-made ladders will be constructed for their intended use. Cleats will be inset into side rails 1/2 inch, or filler blocks used. Cleats will be uniformly spaced, 12 inches, top-to-top.

Lasers

Only trained employees will be allowed to operate lasers. Employees will wear proper eye protection where there is a potential exposure to laser light greater than 0.005 watts (5 milliwatts).

Beam shutters or caps will be utilized, or the laser will be turned off, when laser transmission is not actually required. When lasers are left unattended for a substantial period of time, they shall be turned off.

Liquefied Petroleum Gas

Each system will have containers, valves, connectors, manifold valve assemblies and regulators of an approved type. Every container and vaporizer must be provided with one or more approved safety relief valves or devices. Containers will be placed upright on firm foundations or otherwise firmly secured.

Portable heaters must be equipped with an approved automatic device to shut off the flow off gas in the event of flame failure. Storage of LPG within buildings is prohibited. Storage locations must have at least one approved portable fire extinguisher, rated not less than 20-B.C.

Masonry Access Zone

Limited access zones are to be established on the unscaffolded side of unbraced masonry walls. The zones are to be equal to the finished height of the wall plus four feet.

Medical Services and First Aid

When a medical facility is not reasonably accessible, a person trained to render first aid will be available at the worksite.

First aid supplies must be readily available.

The telephone numbers of physicians, hospitals, or ambulances must be conspicuously posted.

Motor Vehicles and Mechanized Equipment

Check all vehicles in use at beginning of each shift to assure that all parts, equipment, and accessories affecting safe operation are in proper operating condition and free from defects. All defects shall be corrected before placing the vehicle in service.

No employee shall use any motor vehicles, earthmoving or compacting equipment having an obstructed view to the rear, UNLESS the vehicle has a reverse signal alarm distinguishable from surrounding noise level, or if the vehicle is backed up only when an observer signals it is safe to do so.

Heavy machinery, equipment, or parts thereof which are suspended or held aloft will be substantially blocked to prevent falling or shifting before employees are permitted to work under or between them.

Personal Protective Equipment

The employee is responsible for wearing appropriate personal protective equipment in operations where there is exposure to hazardous conditions or where need is indicated to reduce hazards.

Lifelines, safety belts, and lanyard will be used only for employee safeguarding. Employees working over or near water, where danger of drowning exists will wear U.S. Coast Guard approved life jackets or buoyant work vests.

Powder-Actuated Tools

Only trained employees will be allowed to operate powder-actuated tools. All powder-actuated tools will be tested daily before use and all defects discovered before or during use will be corrected. Tools will not be loaded until immediately before use. Loaded tools will not be left unattended.

Power Transmission, Mechanical

Belts, gears, shafts, pulleys, sprockets, spindles, drums, flywheels, chains or other reciprocating, rotating, or moving parts of equipment must be guarded if such parts are exposed to contact by employees or otherwise constitute a hazard. No equipment may be used without guards in place.

Protection of the Public

All company personnel are charged with aiding in the protection of the public including, as your job description dictates, installation and maintenance of signs, signals, lights, fences, guardrails, ramps, temporary sidewalks, barricades and overhead protection as may be necessary.

Railings

A standard railing will consist of top rail, intermediate rail, toeboard and posts, and have a vertical height of approximately 42 inches from upper surface of top rail to floor, platform, etc. The top rail of a railing will be smooth-surfaced, with a strength to withstand at least 200 pounds. The intermediate rail will be approximately halfway between top rail and floor.

A stair railing will be of construction similar to a standard railing, but the vertical height will be no more than 34 inches nor less than 30 inches from the upper surface of top rail to surface of tread in line with face or riser at forward edge of tread.

Respiratory Protection

In emergencies, or when feasible engineering or administrative controls are not effective in controlling toxic substances, approved respiratory protective equipment will be provided and used. Respiratory protective devices will be approved for the hazardous work requirements and conditions. Employees required to use respiratory protective devices will be thoroughly trained in their use after being qualified for use by a doctor. (Note: It is the employee's responsibility to ensure that he or she has been declared capable of wearing a respirator by a doctor.) Respiratory protective equipment will be inspected regularly and maintained in good condition.

Rollover Protective Structures (ROPS)

Rollover protective structures (ROPS) apply to the following types of material handling equipment: all rubber-tired, self-propelled scrapers; rubber-tired, front-end loaders; rubber-tired, dozers; wheel-type agricultural and industrial tractors; crawler tractors; crawler-type loaders, and motor graders with or without attachments that are to be used in construction work. This requirement does not apply to sideboom pipelaying tractors.

Safety Nets

Safety nets are required when workplaces are more than 25 feet above the surface and the use of ladders, scaffolds, catch platforms, temporary floors, safety lines, or safety belts is impractical.

Saws

All portions of band saw blades will be enclosed or guarded, except for working portion of blades between bottom of guide rolls and table.

Portable, power-driven circular saws will be equipped with guards above and below the base plate or shoe.

The lower guard will cover the saw to depth of teeth except for minimum arc required to allow proper retraction and contact with the work, and will automatically return to covering position when blade is removed from the work.

Radial Saws will have an upper guard which completely encloses the upper half of the saw blade. The sides of the lower exposed portion of the blade will be guarded by a device that will automatically adjust to the thickness of and remain in contact with the material being cut. Radial saws used for ripping must have non-kickback fingers or dogs. Radial saws will be installed so that the cutting head will return to starting position when released by the operator.

All swing or sliding cut-off saws will be provided with a hood that will completely enclose upper half of saw.

Limit stops will be provided to prevent swing or sliding type cut-off saws from extending beyond front or back edges of the table.

Each swing or sliding cut-off saw will be provided with an effective device to return saw automatically to the back of the table when released at any point of its travel.

Inverted sliding cut-off saws will be provided with a hood that will cover the part of the saw that protrudes above the top of the table or the material being cut.

Circular table saws will have a hood over the portion of saw above the table, so mounted that the hood will automatically adjust itself to thickness of and remain in contact with the table or the material being cut.

Circular table saws will have a spreader aligned with the blade, spaced no more than 1/2 inch behind largest blade mounted in the saw. Circular table saws used for ripping will have non-kickback fingers or dogs. Feed rolls and blades of self-feed circular saws will be protected by a hood or guard to prevent the hands of the operator from coming in contact with the inrunning rolls at any time.

Scaffolds (General)

Scaffolds will be capable of supporting 4 times maximum intended load and erected on sound, rigid footing, capable of carrying the maximum intended load without settling or displacement.

Guardrails and toeboards will be installed on all open sides and ends of platforms more than 10 feet above the ground or floor, except needle beam scaffolds and floats which require the use of safety belts. Scaffolds 4 feet to 10 feet in height, with a minimum dimension in either direction of less than 45 inches, will have standard guardrails installed on all sides and ends.

There will be a screen with maximum 1/2 inch openings between toeboard and guardrail where persons are required to work or pass under scaffolds. Planking will be Scaffold Grade or equivalent as recognized by approved grading rules for species of wood used. Overlap scaffold planking a minimum of 12 inches or secure from movement.

Scaffold planks will extend over end supports not less than 6 inches not more than 12 inches. Scaffolding and accessories with defective parts will be immediately replaced or repaired.

Scaffolds (Mobile)

Platforms will be tightly planked for full width of scaffold except for necessary entrance opening. Platforms will be secured in place.

Guardrails made of lumber, not less than 2 x 4 inches (or equivalent) approximately 42 inches high, with a midrail, of 1 x 6 inch lumber (or equivalent), and toeboards, will be installed at all open sides and ends on scaffolds more than 10 feet above the ground or floor. Toeboards will be a minimum of 4 inches in height. Where persons are required to work or pass under scaffolds, install wire mesh between toeboards and guardrail.

Scaffolds (Swinging)

On suspension scaffolds designed for a working load of 500 pounds, no more than two men will be permitted to work at one time. On suspension scaffolds with a working load of 750 pounds, no more than three men may work at one time. Each employee will wear an approved safety life belt attached to a lifeline. The lifeline will be securely attached to substantial members of the structure (not scaffold), or to securely-rigged lines, which will safely suspend an employee in case of a fall.

Scaffolds (Tubular Welded Frame)

Scaffolds will be properly braced by cross bracing or diagonal braces, or both, for securing vertical members together laterally. Cross braces will be of such length as will automatically square and align vertical members so that the erected scaffold is plumb, square, and rigid. All brace connections will be made secure.

Signs

For the protection of everyone, warning signs such as “No Smoking”, “Keep Out”, “Eye Protection Required”, “Out of Order - Do Not Use”, and “Authorized Personnel” will be posted. All employees will obey these direction and aid in maintaining these signs.

Stairs

Flights of stairs having four or more risers will be equipped with standard stair railing or handrails as specified below. On stairways less than 44 inches wide having on side open - at least one stair railing on the open side. On stairways less than 44 inches wide having both sides open - one stair railing on each side. On stairways more than 44 inches wide but less than 88 inches wide - one handrail on each enclosed side and one stair railing on each open side.

On all structures 20 feet or more in height, stairways, ladders, or ramps will be provided. Rise height and tread width will be uniform throughout any flight of stairs.

Storage

All materials stored in tiers will be secured to prevent sliding, falling or collapse.

Aisles and passageways will be kept clear and in good repair.

Stored materials will not obstruct exits. Materials will be sorted with due regard to fire characteristics.

Tire Cages

A safety tire rack, cage, or equivalent protection will be provided and used when inflating, mounting, or dismounting tires installed on split rims, or rims equipped with locking rings or similar devices.

Toilets

Toilets will be provided according to the following: 20 or fewer persons - one facility; 20 or more persons - one toilet seat and one urinal per 40 persons; 200 or more persons - one toilet seat and one urinal per 50 workers.

Wall Openings

Wall openings, from which there is a drop of more than 4 feet, and the bottom of opening is less than 3 feet above the working surface, will be guarded. When the height and placement of the opening in relation to the working surface is such that a standard rail or intermediate rail will effectively reduce the danger of falling, one or both will be provided. The bottom of danger of falling, one or both will be provided. The bottom of a wall opening that is less than 4 inches above the working surface will be protected by a standard toeboard or an enclosing screen.

Welding, Cutting and Heating

Proper precautions (isolating welding and cutting, removing fire hazards from the vicinity, providing a fire watch, etc.) for fire prevention will be taken in areas where welding or other "hot work" is being done. No welding, cutting or heating will be done where the application of flammable paints, presence of other flammable compounds or heavy dust concentrations creates a fire hazard. Equip torches with anti-flashback devices.

Arc welding and cutting operations will be shielded by noncombustible or flameproof shields to protect employees from direct arc rays.

When electrode holders are left unattended, electrodes will be removed and holder will be placed or protected so they cannot make electrical contact. All arc welding and cutting cables will be completely insulated. There will be no repairs or splices within 10 feet of electrode holder, except where splices are insulated equal to the insulation of the cable. Defective cable will be repaired or replaced.

Fuel gas and oxygen hose must be easily distinguishable and not interchangeable. Inspect hoses at beginning of each shift and repair or replace if defective.

General mechanical or local exhaust ventilation or air line respirators will be provided, as required, when welding, cutting or heating hazardous materials. Always wear approved tinted eye protection when welding or in areas where welding is being done.

Wire Ropes, Chains, Ropes, Etc.

Wire ropes, chains, ropes and other rigging equipment will be inspected prior to use and as necessary during use to assure their safety. Remove defective rigging equipment from service immediately.

Job or shop hooks and links, or makeshift fasteners formed from bolts, rods, etc., or other such attachments, will not be used. When U-bolts are used for eye splices, the U-bolt will be applied so that the "U" section is in contact with the dead end of the rope.

Woodworking Machinery

All fixed power-driven woodworking tools will be provided with a disconnect switch that can be either locked or tagged in the "off" position.

Fire Protection, Prevention & Emergency Practices

A portable aerosol-type air horn, kept in the jobsite Safety/Hazcom file, is to serve as our primary Emergency Warning System on each Project. The emergency horn will be blown to alert all jobsite employees in the event of a fire or other emergency.

One long blast is to indicate a fire in process or that an explosion is possibly imminent.

Two long blasts are to indicate another disaster potential or event such as collapse, serious accident, etc.

Three long blasts are to indicate a natural disaster potential such as a tornado, etc.

When the horn is heard, all personnel on site are to assemble at the "Field Office" to let the exact nature of the emergency and to obtain specific instructions on appropriate action to follow from the superintendent or Project Manager. If working in a multi-story structure, personnel will exit by stairway and not by elevator, manlifts, material hoist, etc.

Emergency horns will be located in the field office and in each separate division of the structure (s) under construction. These stations will be designated by appropriate signs.

LIFE SAFETY IS OUR FIRST PRIORITY. On assembly, all crafts are to proceed with "roll call" to confirm that all personnel are present or accounted for.

The second order of business after sounding the warning is to telephone for public assistance such as the fire department, rescue squad, hazardous material leak response team, police bomb squad, etc. Emergency phone number lists are to be kept updated and posted next to the field office phone. Know in advance the location of the nearest "back up" telephone, and be prepared to take the phone number list. call the main office to alert them to the problem if and when your time permits.

When personnel have been accounted for, they will be dismissed, except for key people who will be designated to direct emergency personnel who arrive on site or whose services might otherwise be needed to assist in the emergency. (In the event of a bomb threat, however, before dismissal determine if anyone has seen any suspicious packages or persons on site). While it is not our policy to have an established Fire Brigade, instruction on the most effective use of fire extinguishers will be given periodically for "first aid" purposes (ie. to fight small fires in early stages and to aid in evacuating people from the scene).

All personnel are alerted never to attempt to move a small fire, such as in a vessel, to the outside. In the event of an earthquake or tornado, personnel may be encouraged to gather inside the most protected area of the structure, which will be up to the judgment of the Superintendent project Manager and will be voluntarily given and acted upon. Assembly in the corner of a basement is no longer recommended as a safe act in the case of a tornado. In suburban areas located away from public disaster warning systems, emergency broadcasts will be monitored.

Fire Prevention Program

During the course of construction, good housekeeping is essential for fire prevention. All areas of the project must be kept clean and in generally good order with aisles established. Exits and exit routes are to be posted if exits are not obvious. Unnecessary combustibles such as wood scraps, cardboard, paper, etc. are not to accumulate but are to be properly disposed of in noncombustible containers or dumpsters kept no closer than 50 feet from the structure unless made "fire safe" (ie tightly covered with noncombustible cover). Flammable material spills should be contained in accordance with the Material Safety Data Sheet (MSDS) guidelines, laws and regulations. As soon as possible after moving on a site, weeds are to be cut and removed from the site.

Flammable material storage is to be kept to a minimum inventory (several days' supply only) unless otherwise approved by the authority of the Superintendent/Project Manager or as required by laws and regulations. Such storage will be in an approved location marked by appropriate warning signs posted against smoking, open flames and spark-producing operations such as grinding, welding, etc.

A review of Material Safety Data Sheets is required before establishing storage precautions and to determine if mixed storage is permitted. (This will help avoid chemical reactions between two materials). Oxygen gas cylinders are not to be closer than 20 feet from Acetylene gas cylinders in storage. All gas cylinders in storage will be capped, stores upright and secured by tying them off to prevent them from falling. Oxygen cylinders, regulators, fittings, and hoses will be kept free of grease and oil. It is prohibited to direct oxygen gas toward such materials to wear oily/greasy gloves any oxygen source, as this may lead to an explosion.

Avoid build-up of dusts, sawdust and debris by frequent sweeping and disposal.

If welding or flame cutting is required, it must follow "Fire Watch" and/or "Hot Work Permit" procedures where flammable, combustible or potential hazards may be present. No welding or flame cutting is permitted in confined or enclosed spaces without a special permit being issued and designated procedures being followed. When possible, objects to be welded, flame cut or heated will be moved to a safe location. If not readily movable, all movable fire hazards in the vicinity will be relocated a safe distance or otherwise protected by standard practices. Internal combustion engines are to be located with their exhausts away from combustible materials, partitions, etc. An informal fire inspection will be performed at the end of each day's operation.

Interior storage shall not adversely affect means of exit. Six-inch clearance must be maintained around lights and two feet around heating units to prevent ignition of materials. A barricade or clearance of two feet must be kept around the path of a fire door and no storage within three feet of a fire door opening, sprinkler outlet or fire extinguisher station is permitted.

No more than 25 gallons of flammable liquids shall be stored in a room outside of an approved storage cabinet. Only approved containers shall be used for flammable storage and the contents shall be properly labeled. No flammables/combustibles are permitted to be stored in stairwells or passageways.

Open yard storage of combustible materials are not to be nearer than 10 feet from the structure and stacked in solid piles no higher than 20 feet. Driveways are to be at least 20 feet wide. Good housekeeping is required.

Flammable or combustible liquids shall be stored in approved containers designated by FM or UL rated labels. Only containers that have been recently tested per manufacturer's/NFPA standards and that appear undamaged are allowed on site. "No Smoking or Open Flames" signs will be posted and rigidly enforced. Incompatible materials that may create a hazard shall be segregated per the information provided on their respective Material Safety Data Sheets (MSDS'S). A fire extinguisher rated 20 BC or greater is to be provided.

Fire Protection equipment and fire extinguishers, rated 2A [or 55 gallon drum with 2 "fire pails" (extinguishers and water drums will be protected from freezing)] are to be located for each 3000 square feet of the building. Distance is not to exceed 100 feet between each extinguisher and each station is to be marked by signs. Extinguishers will be date-tagged showing the last service inspection dated per standards. In multi-story structures, one extinguisher will be adjacent to the stairway on each floor. This equipment will be properly designated and readily accessible. All welding operations require that one class 4A-4OBC rated or larger extinguisher be manned and within 25 feet of operations. Storage yards will have a minimum class 2A extinguisher for every 3000 square feet of area.

During demolition or alterations, existing fire doors and automatic sprinkler installations will be kept in service condition as long as possible. When possible, work will be expedited to return the automatic protection, standpipes, etc. to service. Exits will be maintained in accordance with "Life Safety Codes" per Architect ? Engineering specifications set forth in the contract, and it is forbidden that hangings or draperies conceal them. In the event of special fire concerns, a "tool box " meeting will be called and specific instructions will be issued to appropriate personnel as required.

LOCK-OUT AND TAG-OUT PROGRAM

A “lock-out” is a padlock placed on a power source (i.e. a valve, switch, etc.) to effectively “block out” the release of energy that could set a machine in motion. A “tag-out” is a written warning on a Danger Tag attached to a control that lets people know not to operate a switch, valve, etc. which could result in an accident or injury.

As a general rule, locking and tagging is required whenever a person is required to put his or her hands, head or any other part of themselves in a position where the employee could be injured when repairing machines or systems.

Personnel failing to comply with these procedures are subject to serious personal injury in addition to disciplinary action.

Out-of-Service Procedure:

Whenever equipment is out of service for construction or repairs and the potential exists for accidental starting up of the equipment that could result in personal injury, the following procedure will be followed:

The Subcontractor will be responsible for locking and tagging out equipment associated with its work. If this is not done, or if the equipment is associated with work performed by **(Company Name)**, the Superintendent will take the equipment out of service and install a Danger or Do Not Operate tag and, when possible, install a single-keyed padlock on the main switch or valve in the “off” position.

Safeguards will be kept in place until all work is completed and equipment hazard exposure areas are cleared of personnel and tools. Only the Superintendent is permitted to remove these safeguards. If, however, an individual must work around the equipment afterwards, he or she will be allowed to remove them when finished. (If, however, the individual is not available to remove his safeguards when necessary, the Superintendent has the sole authority to remove them.)

On air/steam equipment and chemical/gas lines all valves or cocks in the supply line will be closed and drains will be opened by qualified, authorized persons. All valves will then be chained or locked and tagged as described above. If necessary, all supply lines will be disconnected or capped off to ensure a “zero energy state”.

On pneumatic (air) and hydraulic systems, bleeder valves on the cylinder or system will be opened to relieve pressure. Lock-out and tag-out procedures will be used as described above.

In general, all systems containing any form of stored energy must be relieved, disconnected, restrained, blocked or otherwise rendered safe.

IT SHOULD BE EMPHASIZED, AS NOTED ABOVE, THAT SUBCONTRACTORS ARE RESPONSIBLE FOR LOCKING AND TAGGING OUT ITEMS ASSOCIATED WITH THEIR WORK.

CONFINED SPACE ENTRY PROGRAM

A CONFINED SPACE, as defined by the National Institute for Occupational Safety and Health (NIOSH), is a space which by design:

- Has limited openings for entry and exit.
- Has unfavorable natural ventilation which could contain or produce dangerous air contaminants.
- Is not intended for continuous employee occupancy.

Obvious examples of Confined Spaces are manholes, sewers, boilers, silos, vessels, vats, pipelines, tunnels, storage tanks and underground vaults. Areas such as these are generally not encountered in the normal course of our company's work. However, other examples of confined spaces may not be as easily identifiable, such as open-topped water tanks and open pits. Open pits are frequently encountered by our company during the course of excavation work.

The atmosphere in a confined space may be extremely hazardous because of the lack of natural air movement. This can result in the presence of the following hazards:

- Oxygen-deficient atmospheres
- Flammable atmospheres

Toxic atmospheres

An oxygen-deficient atmosphere has less than 19.5% available oxygen, and any space with less than 19.5% should not be entered without a self-contained breathing apparatus. The oxygen level in a confined space can decrease because of work being performed such as welding, cutting or brazing, or it can be decreased through chemical reactions (i.e. rusting) or through bacterial action (i.e. fermentation). Oxygen levels can also be decreased if oxygen is replaced by another gas, such as carbon dioxide or nitrogen.

A flammable atmosphere is one with either 1) excess oxygen in the air, or 2) a flammable gas, vapor or dust in the air. In areas such as these, a source of ignition, such as a sparking or electric tool, will set off an explosion.

A toxic atmosphere can develop in several manners. It can be generated from a product stored in the space, such as paint or sludge, or it can be generated from work being performed in the space, such as painting or cutting. It can also be released from materials near the space. For example, surrounding soil saturated with a chemical may release a gas into sewer space.

Employees must be aware of these hazards and constantly be on guard for these conditions. Our company does not generally encounter these types of spaces, but if the situation occurs, the following guidelines are to be used:

- If possible, use proper ventilation. Install fans to provide ventilation if necessary.
- If it is not necessary to enter the space, block off the area. Lock it out or secure it in some fashion to prevent employees from entering. Provide some sort of visible, written warning sign.
- If the first two items will not solve the problem, notify the Safety Coordinator. He or she will then obtain a gas monitor and arrange for the confined space to be tested to determine the exact hazards involved. When checking the area, air measurements will be taken at ALL height levels.
- If the hazardous confined space MUST be entered, contact the Safety Director, who will arrange to obtain the appropriate breathing apparatus for the hazard. Enter the space ONLY with such apparatus on.
- Arrange to have a person “standing-by” outside of the confined space. This stand-by person should remain in contact with the workers inside, and this should be their only duty while employees are within the area. If there is a problem within the confined space, the stand-by person should be in a position to call for help and should NOT enter the space until help arrives, and then only the proper protective equipment, lifelines and respirators.

One method of rescue consists of tying a rope to the employee before he or she enters the space. If a problem occurs and the employee loses consciousness, the stand-by person can then pull the worker out of the area with the rope. This preventative method has proven very effective in industry, and therefore has been adopted by our company.

All employees are to review and understand this program.

In summary, **KNOW** when a confined space may be hazardous. **DO NOT** enter the hazardous space if it can be avoided. **CONTACT** the **SAFETY COORDINATOR** to get an instrument to identify and measure the hazard if necessary. **OBTAIN** appropriate breathing apparatus before entering the space.

ARRANGE to have a **STAND-BY** person in contact with those inside the area at all times. **SET UP** a method to retrieve the worker in an emergency.

EMERGENCY RESCUE PLAN

WHEN AN EMPLOYEE ENTERS A CONFINED SPACE, ALWAYS HAVE A PLAN FOR RESCUE ESTABLISHED. As stated in the previous section on Confined Space Entry, always have a person “standing-by” outside the area while employees are within. The stand-by person is to remain in contact with the workers inside the area, and this should be his only duty at that time. If trouble arises, the stand-by person should be in a position to call for help, and that person should NOT enter the area until help arrives, and then only with proper protective equipment.

It is good practice to tie a rope or some sort of life-line to an employee before that person enters a hazardous confined space. The line should be attached to a belt or harness (preferable a harness). If the employee loses consciousness, workers outside the confined space can then pull the injured person to safety.

If the hazards in a confined space are too serious to allow rescue with safety equipment on the job site, call the Fire Department.

Under no circumstance is an employee to enter a hazardous confined space to rescue an injured coworker without appropriate personal protection. Approximately half of the fatalities related to confined space hazards result from an employee attempting to save another worker in such an area without taking proper precautions.

In the event of a fire, tornado, bomb-threat or other disaster, follow the instructions presented in section - FIRE PROTECTION, PREVENTION AND EMERGENCY PRACTICES.