

GENERAL SAFETY

In addition to knowing their responsibilities, immediate supervisors shall be aware that certain conditions present safety hazards, which are most frequently the causes of injury and are often discovered in safety inspections and surveys. Listed below are some of those conditions and activities with some suggestions on how to minimize risk.

A. INTRODUCTION

The general safety procedures listed on the following pages must be read carefully and followed. Your safety and the safety of your fellow workers can be achieved only through the constant efforts of each employee. Use this portion of the safety manual to refresh your safety know-how whenever confronted with new work procedures or unfamiliar job assignments.

Eagle Industrial Instrumentation's policy is to ensure that every reasonable precaution is taken to prevent accidents. Even though every possible precaution may be taken, employees may still encounter unsafe conditions. Therefore, develop good safety practices & habits; be alert, informed, and always aware of your co-workers and surrounding environment.

Always use the safety equipment provided for your protection. Unsafe conditions, practices and injuries, regardless of how light, shall be reported to your supervisor immediately.

B. GENERAL RULES FOR THE SUPERVISOR / CONSULTANT

The immediate supervisor shall make certain all employees clearly understand all work and safety procedures; the selected equipment and tools; individual job assignments; and all environmental precautions required to execute the job without incident.

1. The supervisor shall make certain all equipment and materials added to, removed from, or altered on gas/hydrocarbon producing and/or processing facilities are in accordance with approved standards and applicable codes.
2. Field supervisors shall hold crew safety meetings at the beginning of each tour. In addition, when the crew is about to undertake a new type of operation or perform hazardous work, a briefing shall be held to review safety procedures and identify potentially unsafe conditions. Crew members shall, at all times, be given the opportunity to ask questions and/or make suggestions. Customer and other service personnel shall be briefed on any Eagle Industrial Instrumentation operation impacting their safety and/or work procedures.
3. In those rare cases where it is impossible to eliminate a location or operational hazard, the supervisor is responsible for familiarizing the

group with the situation and developing prevention measures minimizing personnel and equipment exposure to the hazard.

4. In certain situations where special precautions must be taken, approval of the next level of supervision is required before beginning operations. The immediate supervisor shall be familiar with those situations requiring such approval.

C. HOUSEKEEPING

1. Encourage safe work habits by keeping the work environment orderly and free of obstructions, unnecessary equipment, tools, and trash.
2. Keep tools and working materials in proper containers, toolboxes, etc.
3. All trash, waste, and scrap (such as scrap metal, oily rags, broken glass, aerosol cans) must be placed in properly labeled/marked containers.
4. Properly store all materials and tools.
5. Smoking shall be confined to designated smoking areas. Cigarette butts shall be disposed of in containers provided.
6. Keep small items in boxes or bins.
7. Keep the floor clear of tools and other items, which may cause employees to slip, trip, and fall.
8. Keep walkways clear of obstructions.
9. Ensure that work tables are occupied only with equipment, materials and/or tools necessary to complete the assigned task.
10. Prevent potential fire hazards by properly storing or containing ignition sources. The accumulation of flammable and/or combustible materials or residues shall be minimized at all times.
11. Clean up tools and work areas as your job progresses.
12. Keep cords and hoses seven feet overhead, or lay them flat and outside walkways.
13. Keep all material, tools, and equipment in a stable position (tied, stacked, or blocked) to prevent rolling or falling.
14. Maintain clear access to all work areas.

D. LIGHTING EQUIPMENT

1. Whenever changing a broken light bulb make sure the current is de-energized. Eye protection shall always be worn.
2. Keep the glassware on all industrial fixtures clean to insure maximum illumination. Never remove protective globes from vapor-proof or explosion-proof fixtures longer than necessary to clean or replace.
3. Avoid handling broken fragments of fluorescent lamp tubes and do not breathe dust or vapors from a broken tube. Allow the atmosphere to clear before cleaning up the broken pieces. Thoroughly wash any wounds and seek immediate medical attention. Burned out tubes shall be disposed of promptly in a container not frequented by people and/or accessible to children.

4. Safety lights and extension cords must be kept in good working order. Cords must be periodically checked for bad insulation and lamps checked for cracked or broken protection globes. The cord shall not be used if it is defective. Care shall be taken to avoid wrapping cord around the arms or any part of the body. Never stand in water while handling the cord or light.
5. All portable hand lights used in hazardous locations must be explosion-proof.
6. No portable hand lights shall be used unless the outside globe and metal guard are in place.

E. PERSONAL PROTECTIVE EQUIPMENT

General Requirements

Protective equipment, including personal protective equipment for eyes, face, head, and extremities, protective clothing, respiratory devices, and protective shields and barriers, shall be provided, used and maintained in a sanitary and reliable condition whenever it is necessary by reason of hazards of processes or environment, chemical hazards, radiological hazards, or mechanical irritants encountered in a manner capable of causing injury or impairment in the function of any part of the body through absorption, inhalation or physical contact.

1. Equipment - Eagle Industrial Instrumentation provides all the necessary protective equipment to perform any job encountered as they apply to our operations. These include but not limited to: eye, face, ear, foot, head and hand protection, fall protection, protective clothing, aprons and respiratory protection.
2. Training – Eagle Industrial Instrumentation will also provide the necessary training to each employee who is required to use the PPE. Training shall include:
 - When PPE is necessary
 - What PPE is necessary
 - How to properly don & doff, adjust and wear properly.
 - PPE Limitations
 - Proper care, maintenance

Eagle Industrial Instrumentation shall also verify that each employee has understood the required training through written testing along with documentation showing name of employee, dates of training, and the instructor.

3. Hazard Assessment – Eagle Industrial Instrumentation will assess the workplace to ascertain if and where hazards exist or are likely to exist; at which time Eagle Industrial Instrumentation will select the respective PPE

to be used, that will protect any affected employee from the hazards identified in the assessment. This assessment will be performed with a written certification identifying the workplace evaluated along with the person conducting the assessment and the dates completed.

4. Employee Owned Equipment – Where PPE equipment is furnished or owned by the employee, the H S & E coordinator will be responsible for assuring the equipment meets regulatory standards (OSHA, Niosh, etc) and is properly maintained, cleaned and sanitized.

The protective equipment to be used by employees will be determined by the advance analysis of the job and by conditions that occur as work progresses. However, on all jobs the following are the minimum:

- Safety goggles or face shield shall be worn by employees who are engaged in chipping, grinding or performing any other operations that present eye hazards.
- Safety hats and glasses will be worn by all employees and visitors at all times while in the plant's designated area(s).
- Safety shoes are required for all employees on all projects. Tennis shoes, open-toed shoes and sandals are prohibited.
- Long-sleeve shirts with sleeves rolled down and buttoned are suggested at all times on projects.
- Personnel with beards will not be permitted to enter certain locations. This will include contractor employees, subcontractor employees, and vendor representatives, etc.

5. Protective Equipment and Clothing – Maintenance and Repair

- Personal protective clothing shall be shared on a 50/50 basis between the employee and Eagle Industrial Instrumentation
- Personal protective equipment is vital to safety in your work location. The equipment shall be properly cleaned, inspected after use, and stored in clearly marked and properly designated area.
- Any equipment that no longer provides adequate protection shall be repaired or replaced immediately. Unusable equipment shall be destroyed.
- **Note:** When Customers require FRC clothing, it will be provided by Eagle Industrial Instrumentation.

- a. Ears

- 1) Appropriate hearing protection is provided by Eagle Industrial Instrumentation and must be worn by all personnel in area where signs are posted warning of excessive noise levels. Hearing protection shall also be

worn in un-posted areas that are suspected of temporary excessive noise.

b. Eyes

- 1) Approved ANSI z.87 safety glasses with side shields shall be provided by Eagle Industrial Instrumentation and must be worn by all employees.
 - In areas designated by Eagle Industrial Instrumentation facility safety program.
 - During the execution of job assignments posing a potential eye hazard.
 - As defined by customer safety procedures on location.
- 2) Complete coverage eye protection must be worn when dust hazards exist and when using any type of pneumatic tools.
- 3) Individuals must wear splash-proof goggles when they are handling hazardous chemical liquids, powders, or vapors. They must also wear the goggles when they are in the immediate vicinity of these chemicals.
- 4) A person near other persons who are doing work that requires the use of safety goggles must wear such goggles.
- 5) Employees engaged in helping welders should not look directly at the welding process and must use approved eye protection.
- 6) Goggles with No.5- or 6-shade lenses must be worn when material is cut with acetylene gas. Helpers engaged in such work shall wear goggles with No. 4-shade lenses.
- 7) Electric arc welding requires the use of welding helmets or hand shields fitted with No. 10 or darker shade lenses. Helpers in electric welding must wear No. 6 or darker shade lenses.
- 8) Cover glasses must be used with all welding goggles, helmets, and shield.
- 9) Suitable goggles must be worn when inspecting tubing under hydraulic pressure.

c. Feet and Toes

- 1) Approved ANSI Z41 safety shoes or boots shall be provided by **employee** and are required to be worn at all times.
- 2) Tennis shoes, sandals, and other similar shoe types are not to be worn at any time on the job site. The wearing of low-quarter steel toe shoes is discouraged.
- 3) Rubber boots with safety toe protection shall be used on jobs where exposure to hazardous chemicals is eminent, i.e. calcium chloride, zinc bromide.

d. Hands

- 1) Wearing gloves prevents many minor injuries resulting from rough materials or irritating substances. Wear gloves whenever possible. Leather or leather-palm gloves shall be worn when wire rope is being handled. Cloth gloves afford adequate protection when normal work is done.
- 2) Appropriate gloves must be worn when acids, caustic soda, and soda ash are handled.
- 3) Insulated or heat-resistant gloves must be worn when regular work gloves cannot adequately protect against burns.
- 4) Eagle Industrial Instrumentation shall provide all cotton, latex and rubber gloves.

e. Head and Face

- 1) Eagle Industrial Instrumentation shall supply safety hats to the employees and visitors. These must be worn by employees and visitors in the field, the shop, or any location where head injury hazards exist. Safety hats are selected for their protective qualities, and no others may be worn on the job. Safety hats must fit properly to provide maximum protection, and they must be maintained to ensure their protective qualities. Safety hats must not be painted or modified in any manner.
- 2) Hair long enough to constitute as a hazard while a person is working near moving machinery or rotating tools and equipment must be secured by a net or tied back.
- 3) Beards that constitute a hazard while a person is near moving machinery or rotating tools are not permitted.

f. Respiratory

Please refer to Section 12 - Respiratory Protection of this Safety Manual for more detailed safety policy information.

- 1) Employees must be taught how to use respiratory protection before its actual use is required. Specific training requirements vary for respiratory types. Training must be conducted in accordance with applicable regulations. Periodic refresher training shall be held as appropriate. This training will identify individuals who, because of their physical conditions, cannot use the equipment.
- 2) Respirators must be worn when personnel are working in an atmosphere contaminated with harmful mists, fogs, gasses, smokes, sprays, and vapors. Respirators must be

one of the following types approved by the National Institute of Occupations Safety and Health (NIOSH):

- a) Dust respirators – Used to protect from nuisance and toxic dusts. Not to be used for vapors, mists, or fumes unless specified by the manufacturer/supplier.
- b) Chemical cartridge respirators – Used to protect from mist or vapor such as paint spray. Not to be used for dusts or fumes unless specified by the manufacturer or supplier.
- c) Make sure that all respiratory protective equipment is regularly inspected, cleaned, and maintained in good working condition.

g. Other Protective Equipment

Other protection equipment shall be provided by Eagle Industrial Instrumentation

Chemical goggles, full face shield, protective gloves and an acid-proof apron shall be worn for handling chemicals that may be harmful to the skin or eyes when exposure to spillage is possible. Certain materials such as acids and caustic soda required additional protection.

h. Clothing

Clothing shall be provided on a 50/50 cost basis between Eagle Industrial Instrumentation and the employee.

- 1) If clothing becomes saturated with oil, gasoline, or chemicals, the employee shall immediately wash the exposed skin area with soap and water and change clothes to prevent skin irritation. The employee must avoid all sources of fire, including cigarettes, pipes, or cigars before changing clothes and washing the affected skin with soap and water. Doctor should be consulted if skin rash develops.

i. Personal Flotation Devices

Personal Flotation Devices shall be provided by Eagle Industrial Instrumentation. Each individual must wear a personal flotation device (PFD Type V) as specified below, except in rare instances where conditions make such use a greater hazard. A PFD must be a Type V approved for the service intended by the United States Coast Guard and must be fastened when worn. A PFD must be worn:

- a) When doing repairs and maintenance of warehouse wharf and bulkhead areas.
- b) When loading and unloading barges of sack products and bulk type products.

F. HAZARDOUS MATERIALS

Hazardous materials may be defined as any material posing a health or physical hazard.

Health hazard – any chemical for which scientific evidence has been established suggesting acute or chronic health effects may occur in exposed employees (Reference Federal Hazard Communication Standard 29 CFR 1910.1200).

Physical hazard – any material/chemical scientifically determined to be a combustible liquid, compressed gas, explosive, flammable, an organic peroxide, an oxidizer, pyrophoric, unstable (reactive) or water reactive.

1. Do not store, handle, apply or use acids or caustics until your supervisor has given you detailed instruction, safety precautions, and proper protective equipment.
2. When disconnecting flanges, expect to encounter corrosive liquid and protect yourself accordingly. Where required, use acid coat, hood, boots, and gloves; barricade areas; and have standby and emergency water immediately available.
3. Never add water to acid; if dilution is needed, add acid to water.
4. Dispose of chemically soaked material in the proper container.
5. Flammables, corrosives, toxic materials and highly reactive materials require special disposal. See you supervisor or Safety and Environmental Coordinator for the proper container for these materials.
6. Keep clear of all radioactive material and areas where work is being done with radioactive material. These areas will be barricaded and posted with a radiation hazard sign.
7. All liquid containers must be properly labeled per Federal guidelines. Labels shall be removed from all empty containers.
8. MSDS will be required for all materials purchased, used by Eagle Industrial Instrumentation employees and/or stored on premises. MSDS will be filed in a central location and readily available to all employees. ALWAYS FOLLOWS MSDS GUIDELINES.
9. All MSDS will be reviewed by the Safety and Environmental Committee (subcommittee) to determine whether the product possesses properties making it a hazardous material.
10. Do not dispose or mix unidentified chemicals, liquids, materials. Immediately notify your supervisor and the Safety and environmental coordinator before disposal of any unidentified materials.

G. SIGNS AND BARRICADES

1. Use signs when necessary and remove them promptly when no longer required Pay attention, SIGNS CONVEY AN IMPORTANT MESSAGE.
2. Signs are to be placed on barricade stands, posts, or other easily visible locations.
3. Signs must be effectively positioned before work begins and removed to proper storage areas when the job has been completed.
4. Signs must be legible.
5. Danger tags are placed on switches and valves that must not be operated. These tags are normally printed with the words “HANDS OFF – DO NO OPERATE.”
6. Danger tags are used to prevent movement of a switch, valve, or piece of equipment where operation of the switch/valve may endanger employees or cause equipment damage.
7. Observe the following guidelines for danger tags:

DO:

- Place your tag personally – do not have someone else attach it for you.
- Sign the tag and date it.
- Use only the standard danger tag.
- Remove your tag when you have completed your work.
- Return your tag when you remove it, and use a new one when needed.
- All tags placed by “electricians” must be accompanied by their lock.
- TRY the switch after locking and tagging and before starting work to make sure the switch has been immobilized.

DON'T:

- Remove someone else’s tag or operate a valve, switch, or device that has another person’s danger tag attached. Disregard for lockout/tagout tags may be grounds for disciplinary action up to dismissal.
- Neglect to lock or tag a device unless specifically instructed to do so by your supervisor.
- Place danger tags on defective tools and equipment.

8. The following written, properly authorized permits are required BEFORE beginning any of the activities listed below.
 - a) Confined Space/Tank Entry Permit:
 - Entering enclosures having limited means of access and egress, e.g., tanks, vessels, bins, silos, boilers, pits, septic tanks, sewers, underground utilities, pipelines, and similar structures.
 - Do not enter a tank or confined space in operational areas until a valid Confined space or Tank Entry Permit, signed by the responsible supervisor, is posted at the work site and you are in compliance with this permit.
 - b) Work Permit:
 - Work of any type as required by federal guidelines, customer or company policy.

- c) Hot Work Permit:
 - Flame or spark producing activity regulated by federal guidelines, customer or company policy.
- 9. Barricades are required around most excavations, holes or openings in floors, edges of roofs, elevated platforms and around certain types of overhead work. Barricades are used to warn people against an impending danger, i.e. falling in, through, or off a work area.
- 10. ANYONE WHO MAKES A HOLE OR OPENING IS RESPONSIBLE FOR HAVING IT BARRICADED.
- 11. Barricades and/or caution tape must be 42” high, square and level.
- 12. Barricades and/or caution tape shall be erected before the hole is cut and extended as the excavation progresses. Barricades shall be returned to the designated storage area when no longer needed.
- 13. Warning barricades call your attention to a hazard but offer no physical protection, e.g., colored synthetic tape on stands or posts.
- 14. Protective barricades serve 2 purposes: (1) warning and (2) physical protection from falling.
- 15. Barricades must be constructed with materials that prevent physical entry into the work area.
- 16. All holes or openings through floors or decks must be provided with hole covers or standard railing. Do not store material or equipment on a hole cover.
- 17. Excluding the entrance, stairway floor openings shall be guarded by standard railing and toe boards.
- 18. All wall openings from which there is a drop of more than 4’ above the working surface shall be guarded.
- 19. All open-sided floors or platforms 6’ or more above adjacent floor or ground levels shall be guarded by a standard railing or equivalent protection.
- 20. Temporary hole covers shall have a sign reading, “WARNING – TEMPORARY COVER – DO NOT REMOVE”, or must be otherwise identified. Covers must be cleated, wired, or otherwise secured to prevent slipping horizontally beyond the hole. Covers must extend adequately beyond the edge of the hole.

H. FIRE PROTECTION

Training

Training for all employees who have been designated to operate fire extinguishers to be given a training program that will familiarize them with the proper use and hazards involved using portable fire extinguishers on incipient stage fires. The training shall include but not limited to the following:

1. Visual Inspection
2. Fire Prevention
3. Classes of Fires and Extinguishers
4. Proper selection and use of extinguishers.

Training will be provided upon initial employment and annually thereafter.

Inspection and Maintenance

All portable fire extinguishers shall be visually inspected on a monthly basis by the Safety Officer. All annual inspections shall be documented and records retained for one year. Alternate equipment protection will be provided when portable fire extinguishers are removed from service for maintenance or repair.

Procedures

1. Permits may be required before welding, burning, or using open flames. Check with the immediate supervisor.
2. Know the location of and procedures to activate a fire alarm.
3. Know the location of the nearest fire extinguisher and how to operate it. Know the type of fire on which it should be used. Check the label. Be aware that certain toxic fumes may be generated by a fire.
4. Fire extinguishers of the proper type and size must be within 30' of each open-flame operation performed. Return extinguishers for servicing promptly after use.
5. Combustible material under or near welding and burning operations must be moved a safe distance away or covered with FIRE-RETARDING material. Where this is not possible, all sparks and slag must be contained in an approved spark catcher.
6. Portable power equipment must not be refueled while running or when hot. If applicable, attach a ground wire before refueling.
7. Smoke in approved smoking areas only. Discard butts in approved containers, never in wastebaskets or trash cans.
8. Store flammables in properly labeled containers and in designated areas. Keep flammables away from smoking, welding, burning, or other sources of heat.
9. Exercise special care and attention when using the following types of liquids:
 - Petroleum fuels
 - Solvents
 - Thinners
 - Degreasers
 - Protective coatings
 - Acids

- Caustics
10. Spraying these liquids will increase the presence of fumes or vapors and create a potential fire or explosion hazard. Employees should be fully aware of respiratory, ventilation and skin-protection requirements. Do not mix different liquids or chemicals unless specifically told to do so.

Fire Safety

- The shift foreman or your supervisor is to be notified immediately of any fire.
- Fire hydrants and/or extinguishers are located throughout all work areas. Each employee shall become familiar with the location of extinguishers in his/her respective work area.
- Only a dry chemical or CO₂ fire extinguisher shall be used on electrical fires.
- If an employee uses a fire extinguisher, the used extinguisher shall be turned in to the supervisor for replacement.
- Smoking, building fires or using open flame appliances in posted areas or near places where gasoline, acid or similar flammable substances are stored or are handled is prohibited.

A B C D Classification of Fires

- Fire classifications and the proper application to extinguish a particular class of fire is as follows:

Class A Fire

Basically, a fire involving ordinary combustibles such as wood, cloth, paper, rubber, and some plastics.

Method of Extinguishment:

Water, because it is a cooling, soaking and penetrating agent, but any extinguisher can be used with reasonable success.

Class B Fire

Fires involving flammable or combustible liquids, gases, greases, and similar materials

Method of Extinguishment:

Fires of this nature require the use of a blanketing or smothering agent such as foam, carbon dioxide, dry chemical, water fog, or sand.

Class C Fire

Fires involving energized electrical equipment.

Method of Extinguishment:

If possible, de-energize circuit. Use a nonconductive extinguisher such as dry chemical or carbon dioxide – CO₂ is preferred because it leaves no residue.

Caution – Use water or foam only as a last resort and only after the electricity has been secured.

Class D Fire

Fires involving certain combustible metals such as magnesium, sodium, potassium, etc.

Method of Extinguishment:

A special dry chemical, because it is a smothering and coating agent.

I. LADDERS AND SCAFFOLDS

1. Inspect ladders before use. Ladders are not to be painted except for numbering purposes. Do not use ladders for skids, braces, workbenches, or for any purpose other than climbing. If a ladder is found to be defective or otherwise damaged, tag and remove the ladder from service.
2. Always face the ladder when climbing or descending.
3. Face the ladder when working from it.
4. If it is necessary to place a ladder in or over a doorway, barricade the door and post warning signs.
5. While ascending or descending a ladder, do not carry anything that will prevent holding on with both hands. Use a hand line.
6. Keep both feet on the ladder rungs. Ladder rungs must be uniformly spaced.
7. If working from a ladder, do not reach out too far or place one foot on an adjacent piece of equipment.
8. Change the position of the ladder as often as necessary.
9. A safety harness and de-acceleration device is required at all times when ascending, descending and/or working from a ladder.
10. Metal ladders must not be used for electric welding or near any electric lines or services.
11. When not in use, the ladder shall be properly stored.
12. Place the ladder so that the bottom is positioned one-fourth the ladder's extended height from the base of the support object. In work environments limiting the proper positioning of ladders, all precautions shall be taken and employee's notified of the potential unsafe condition.
13. Ladders must be equipped with non-skid safety feet and properly secured at the ladder's base and top.
14. The top of the ladder must extend at least 3' beyond the supporting object when the ladder is used for access to an elevated work area.
15. After an extension section has been raised to the desired height, ensure safety dogs or latches are engaged and the extension rope is secured to a rung on the base section of the ladder.
16. Extension ladders must be overlapped a minimum of three rungs.
17. Do not take extension ladders apart to use individual sections.
18. Stepladders shall always be opened, set level on all four feet and locking mechanisms fully engaged. Stepladders shall never be used like a straight ladder.

19. Never stand on the top platform of a stepladder. Do not store tools or materials on the steps or platform.
20. Identify specific safety assignments before using two-man stepladders.
21. Stepladders may require tying off under certain conditions.
22. Before starting work on a scaffold, inspect it to determine that handrails, toe boards, and decking are in place, all wheels are locked (movable scaffolds), and locking pins are in place at each joint (section).
23. When ascending, descending or working on a scaffold platform, the employee will wear and use a safety harness and lanyards. Lanyards shall be properly tied off to objects capable of supporting 5000 pounds of dead weight.
24. Do not change or remove scaffold members unless authorized.
25. No one is allowed to ride on a rolling scaffold when it is being moved. Remove all tools and material before moving scaffolding.
26. Do not climb on or work from any scaffold handrail, mid rail, or brace member. Use the scaffold ladder to ascend or descend the scaffolding.
27. The erection of scaffolding exceeding 50' above the base plates must be approved by project management. All scaffolds must be erected on a firm, level base.
28. Scaffolds must be tied off or stabilized when the height is more than three times the smaller base dimension. Scaffolds must also be tied off horizontally every 30'.
29. When space permits, all scaffold platforms must be equipped with: (1) rigidly secured (not wired) standard 42" high handrails; (2) standard 21" high mid rails; (3) completely decked with safety plank(s) or manufactured scaffold decking; and (4) rigidly secured toe boards on all four sides.
30. Adjusting or leveling screws must not be used on scaffolds equipped with wheels. Adjustment screws must not be extended more than 12".
31. Check with your supervisor for safe working loads on all scaffolds.
32. Rolling scaffolds shall be used only on level, smooth surfaces. If necessary, the wheels can be contained in wooden or channel iron runners. Watch for overhead clearance when moving.
33. Do not alter any scaffold member by welding, burning, cutting, drilling, or bending.
34. Do not execute work assignments from scaffolding handrails, mid rails, or braces.
35. Generally, parts and sections of scaffolding made by one manufacturer are not to be used with a second manufacturer's equipment.
36. Always assure the working capacity of the ladder or scaffolding is sufficient for the task.

J. OXYGEN-ACETYLENE SAFETY

1. Oxygen and acetylene cylinders shall be handled with care, even when they are empty. Rough handling may damage cylinders or cause leakage with the potential danger of fire and explosion.
2. Dented or otherwise damaged cylinders shall never be used. These cylinders shall be so marked and sent in as soon as possible.
3. All cylinder valves must be closed and the cap replaced before cylinders are returned for refill.
4. Never lift cylinders by the cap and avoid dragging or sliding cylinders.
5. Cylinders shall be kept upright except as may be required for handling. Acetylene cylinders shall be stored in a vertical position.
6. Cylinders shall be stored in an upright position in a safe, dry, well-ventilated place. These cylinders shall not be stored in a place where they will be exposed to heat from stoves, radiators, or direct sunlight.
7. The protective caps shall be installed when the bottles are not in use.
8. Oxygen and acetylene bottles shall be securely fastened to prevent accidental falling. Bottles in use shall be securely fastened at all times.
9. Oil, grease, and fuel oil must be kept off valves, hoses, gauge connections and the bottles.
10. Never shall the gas from one bottle be transferred to another.
11. Oxygen and acetylene cylinders must not be stored together. A minimum distance is 20' apart.
12. The use of oxygen or acetylene cylinders as rollers or as supports for any reason is not allowed.
13. Torches and blowpipes shall be examined closely for leaky valves, nozzles, and leaky or clogged tips.
14. All O-rings shall be inspected periodically and changed as needed to minimize the possibility of blow back and hose explosion.
15. Before a regulator is removed from a cylinder valve, the cylinder valve shall always be closed and the gas released from the regulator.
16. The hose on oxygen/acetylene bottles shall be properly stored when not in use.
17. Hoses shall be inspected regularly. The few inches of that part of the hose near the torch, which is subjected to the hardest use shall be cut off at intervals and the hose reattached.
18. Leaks in the oxygen and acetylene hoses must be repaired immediately.
19. Should a hose catch fire, the valve at the bottle shall be closed. No attempt shall be made to extinguish the fire by pinching the hose, as this will cause the fire to follow the hand.
20. Always treat compressed cylinders with respect and they will treat you right.

K. CHERRY PICKER SAFETY

1. Only qualified persons shall be allowed to operate a cherry picker and other machinery of this type.

2. Each person before operating a cherry picker shall become familiar with that particular brand or type, and read the Operators manual if one is available.
3. Never allow any part of a cherry picker or its line or load to come within 15' of any power line.
4. Never assume that a power line is dead or not in use.
5. The load capacity of the cherry picker in use shall never be exceeded as specified by the manufacturer.
6. While operating a cherry picker in soft or unstable ground, caution shall be used.
7. While the boom is operating from the side position, the cherry picker is more likely to overturn.
8. The cherry picker and its related parts shall be checked on a regular basis for excessive wear and defects.
9. The cherry picker is designed for only one operator in the cab. Riders are not allowed in the cab with the operator.
10. Someone shall be designated as a signal person, to assist the operator during loading and unloading procedures.
11. Never leave a cherry picker or any other machine running unattended.
12. Always use common sense and good judgment while operating a cherry picker.

L. CHAIN SAW

Chain saws are involved in about 30% of all wood accidents and shall be handled with caution.

1. Hard hats, safety toed shoes and safety pants or chaps shall be worn by saw operators.
2. When carrying the saw any distance, carry it by the handle with motor stopped and guide bar to the rear in such a manner that it may be thrown clear in case of stumble or fall.
3. Always start saw on the ground, not on your knee or in the air.
4. When moving from tree to tree, make sure your finger is not on the saw trigger in case you fall.
5. Adjust idling screw so chain stops when motor idles.
6. Let the motor cool off before refueling. Refuel only in a cleared area.
7. Refuel power saw only with an approved goose neck gas can. Haul gasoline to and from the job in a safety gas can.
8. To prevent static electricity spark, bend gooseneck of the can when refueling.
9. Wipe gasoline spills off motor.
10. Keep first aid kit and fire extinguisher handy.
11. A sharp cutting chain will prevent jamming and other acts that could cause an accident.
12. Always use extreme caution when operating a chain saw.

M. ENGINES AND PUMPS

1. Engines shall be located in well ventilated areas away from such production facilities as flowing headers, separators, and oil storage tanks to prevent accumulations of explosive vapors near the engine.
2. Proper guards shall be installed around engine clutches, belts, and open fly wheels. Guards shall be placed around cranks and other hazardous moving equipment on pumping units. These guards shall be in place at all times while the units are operating.
3. If guards are removed for repairs, they should be replaced before the engine or pump is restarted.
4. Vertical plunger type pumps with ceramic plungers shall have small mesh, expanded metal guards around the plungers to protect personnel from flying pieces of broken rods.
5. A dry chemical type fire extinguisher shall be located near or adjacent to the engine.
6. All gasoline engines shall be killed by a switch instead of by choking.
7. All couplings between motors, engines steam turbines, and centrifugal pumps shall be guarded.
8. If the fuel tank is an integral part of the engine or unit, the engine shall be killed before initiating refueling procedures.
9. Always make certain personnel and tools are clear of the engine and/or pump before starting.
10. Only approved spark plug wrenches shall be used to remove spark plugs. The workman shall stand to one side of the spark plug as cylinder pressure may be sufficient to blow out the spark plug and cause personal injury.
11. The clutch on an internal combustion engine must not be adjusted while the engine is running.
12. Guards should be placed over open-type clutches. Employees must not stand in line with an open-type clutch while it is in motion, as there is always the danger of breakage and flying debris.
13. Exhaust man folding will be wrapped with heat and fire resistant materials.
14. Whenever design parameters allow, engine skid frames will be equipped with top mounted splash plates.

N. WATER SURVIVAL

1. Fear of the unknown reduces your ability to think and plan. If you know what to do in the event of a disaster, no survival situation will be completely strange or frightening. Being prepared will maximize survival opportunities.

The time to prepare for emergencies is before they happen. When you first report aboard a vessel or platform:

- Locate the station bill and learn your emergency duties.
- Take a tour of all areas right away.
- Familiarize yourself with all passageways, and know where they lead.
- Locate all of the exits.
- Think of yourself trapped in any part of the vessel or platform, in the dark. Plan your escape route.
- Locate your lifejackets.
- Review the emergency signals.
- Locate the life raft and lifeboats.
- Locate the fire stations.
- Know where the fire alarm controls are. Several station alarms shall be available in strategic locations.

Be enthusiastic and interested during any fire and evacuation drills. They will provide valuable training. Report any emergency equipment not working properly to your supervisor. Ask questions about any part of the drill you don't understand.

DO NOT PANIC! THINK AND KEEP CALM! Remember your training. Panic only makes the initial danger worse. You must react in a predictable way. Remember what you were taught. Think positively. Say to yourself, "What can I do to survive and help others to survive?"

You may have enough time to collect additional items to help you survive the situation. Bring supplies/clothing that will provide some benefit and leave things that will hinder your survival chances.

2. Survival Capsules:

Survival capsules of many kinds and shapes are found on oil rig platforms. Survival capsules have the same safety features as enclosed lifeboats. These features include fire retardant construction, sprinkler systems, seat belts and a self-righting design.

The 50 person capsule is oval in shape. Smaller capsules are round. They have only one fall wire and rottmer releasing hook located in the center of the capsule. The capsule must never be towed by the releasing hook. The capsule shall only be towed utilizing the bow towing bridle to prevent capsizing.

Immediately after personnel board for emergency evacuation, seat belts shall be fastened and all doors, vents and hatch covers closed and secured. If this is done, the capsule will right itself if it over turns in heavy seas. If the capsule does remain capsized it can be righted by an inflatable bag

installed on the top of the dome. The bag is designed to right the capsule and is inflated by pulling a handle inside the capsule.

3. Falls from vessels or structures:

If you fall from a vessel or structure, observe the following procedures:

- Orient yourself in the water, then move under the platform and away from any boats.
- Look for rescue equipment and listen for instructions.
- Let rescuers come to you. Avoid swimming long distances because survival may depend on conservation of energy.

4. Water entry from any height:

Abandonment of a platform or vessel by jumping into the water can be hazardous and should only be considered if no other means of escape is possible. If you must jump, observe the following basic procedures:

- Before jumping, get as close as possible to the water.
- Remove your safety hat and other unnecessary equipment.
- Put on and firmly secure your personal floatation device (PFD).
- Look to see that your targeted landing is clear of other personnel, protruding objects and debris.
- Protect your mouth and nose. Place the palm of your hand directly over your mouth and pinch the nose with thumb and finger.
- Secure your PFD by clamping your free arm across your chest and grasping the shoulder strap of the PFD.
- DO NOT DIVE. Look directly at the horizon and stand straight. Take a deep breath. Step off – “DO NOT JUMP”, keeping your body erect and your ankles crossed or your legs together.

5. Unfavorable water conditions without a Personal Floatation Device:

Under certain emergency conditions, you may have to abandon a platform or vessel without a PFD.

You must be familiar with swimming in unfavorable water conditions.

- When swimming in rough water, turn your back to the wind or waves. Keep your head out of the water and use a breaststroke.
- When swimming in cold water, conserve your body heat by minimizing movement. This may prevent immersion hypothermia.

6. Rescue actions for person overboard:

Person overboard procedures shall be posted. Personnel shall be familiar with these procedures and shall be able to recognize a person overboard audio alarm.

- Keep an eye on the person overboard while someone else sounds the alarm.
- Drop a lifesaving device straight down to the person overboard. This device will help mark the point of entry and can be used by the person overboard to stay afloat.
- If the device must be thrown, be sure it does not hit the person overboard.
- If you reach out towards a person overboard, be sure you stretch without losing your balance.

7. Hypothermia:

Hypothermia is the loss of body heat. Your normal body temperature is 98.6°F. If your temperature becomes lower than normal, you may experience hypothermia. Hypothermia can occur either in or out of the water. If it happens out of the water, such as working outside on deck, it is because you have not properly prepared for cold weather. Hypothermia usually develops when the air temperature is between 30° and 50°F. When such low temperatures are combined with wind, the possibility of hypothermia taking place increases. This happens because of wind-chill (refer to hypothermia in the First Aid section).

If you are immersed in cold water, hypothermia may begin to develop in as little as 10 – 15 minutes, or it may take as much as several hours. It takes place because the human body in water temperatures 70°F and lower cannot generate enough heat to maintain normal body temperature.