



EMPLOYEE HEALTH, SAFETY AND
ENVIRONMENTAL PLUS
OPERATIONS HANDBOOK

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POLICY STATEMENT

ZARNAS COMPANIES, its subsidiaries and affiliated companies are committed to the safety and health of our employees and the protection of the environment. These are the fundamental responsibilities of each employee. ZARNAS COMPANIES management believes that no aspect of the company's operations is of greater importance. Every executive, manager, supervisor, and employee is expected to be committed to the fulfillment of the ZARNAS COMPANIES stated policy objectives while providing best-in-class products and services to our customers.

This statement of policy is the foundation that supports our entire health, safety and environmental management system. It established our management philosophy with regard to health, safety and environmental values, as well as a shared vision that safety and the protection of the environment as a personal responsibility in the performance of their duties. No aspect of anyone's job is more important. We are therefore committed to the following:

- The company will comply with all applicable health, safety and environmental legislation, regulation, and relevant industry standards of practice concerning protection of health and safety of its employees in the work place and other persons affected by its business activities and the prevention of environmental pollution.
- There must be visible management commitment, communication and training to ensure the health and safety of our employees and the protection of the environment.
- We will ensure that systems are developed and implemented to identify, assess, monitor, review and control health, safety and environmental impacts related to our business activities. Toward that end, periodic audits and reviews of health, safety and environmental systems and performance will be conducted.
- Measurable goals are to be established and reset each year promoting continual improvement toward hazard elimination, ZERO injuries, ZERO illnesses and the prevention of pollution.
- The company will provide the necessary training and education to enable our employees to understand and perform the roles and responsibilities included with their job duties.
- All personnel are charged with the responsibility to make timely corrective actions where any conduct or condition may serve to jeopardize the safety, health or well-being of any employee, customer or contractor.
- All employees and contractors must recognize that safety and environmental protection is a condition of employment and that they are responsible for their safety, the safety of those around them, and for the protection of the environment surrounding their work area.

We ask for your full cooperation and support in the full implementation of our company's health, safety and environmental policies.

A handwritten signature in black ink, appearing to read "Dean Zarnas".

Dean Zarnas
Vice President



INTRODUCTION

Preface

To our fellow employees and subcontractor employees:

The policies, practices, standards, expectations and guidelines contained in this handbook are standards of conduct. We expect you to exceed these minimum standards. This handbook is an integral part of the company injury, illness and incident prevention process. Compliance with such expectations, rules and standards is a condition of employment for all employees and is a contractual obligation for subcontractor employees. This handbook is not all-inclusive, for additional information refer to the *Health, Safety and Environmental Manual and all Operations Manual* or contact your supervisor, person in charge or the safety department.

It is our goal to eliminate injuries, control losses, and protect the environment by providing a healthy and safe work place. We believe that through the process of recognizing and correcting unsafe conditions, changing unsafe worker behaviors, controlling energy sources and openly communicating with our employees we can and will eliminate all injuries.

Keeping your personal safety and well-being in mind this document has been prepared as a tool in your daily routine and work functions. Each employee and contractor is expected to read the handbook carefully, adhere to its contents and use it as a reference as daily work assignments are performed. We encourage all to share knowledge gained and mentor others by leading by example and working safely.

Our Vision:

We believe through collective and individual efforts: ALL INJURIES CAN BE PREVENTED



HSE CHARTER

ZARNAS COMPANIES embraces health, safety and environmental objectives as a core value. We believe all incidents and injuries to be preventable and to strive for health, safety and environmental excellence daily.

ZARNAS COMPANIES shall endeavor to provide for employee livelihood, client needs and shareholder returns through application of management systems that protects the environment, safeguards employee's health and eliminates injuries to people.

ZARNAS COMPANIES believes these goals are best achieved:

- By understanding that no job task is important if performed in an unsafe fashion.
- Through the education of employees on safe work performance
- Through proactive hazard identification, elimination and control
- By applying continual health, safety and environmental improvement processes
- Through the promotion of a positive *safe* lifestyle both on and off the job.

“Working Together for a Safer Tomorrow”



HSE RESPONSIBILITIES

ZARNAS COMPANIES and contractor employees are referred to as “personnel” in this handbook. ZARNAS COMPANIES employees, supervisors and subcontractors have the following responsibilities:

MANAGERS/SUPERVISOR RESPONSIBILITIES

Each manager/supervisor is responsible for the health and safety of his/her employees and safety/environmental activities within their area of supervision. This will include the reinforcement of the belief that all injuries can be prevented. These responsibilities include:

- To read, understand and comply with ZARNAS COMPANIES policy statement, health, safety and environmental management system arrangements and controls.
- Assuring accountability through employee performance, counseling and disciplinary action.
- Setting a good example and promoting safety and environmental initiatives.
- Performing safety/environmental assessments and promptly correcting substandard behaviors and conditions.
- Holding and documenting safety and environmental meetings ensuring adequate training for employees.
- Reporting, tracking, and investigating injuries, potentially dangerous incidents and giving appropriate feedback.
- Reporting and investigating all spills and releases.
- Ensuring adequate training for employees for their assigned tasks.

ALL EMPLOYEE RESPONSIBILITIES

Each employee shall demonstrate a positive attitude toward injury prevention, the protection of the environment and company property. Each employee shall accept that injuries can and should be prevented. Each employee is responsible for:

- Stopping an activity or shutting down any operation which is unsafe
- Promptly reporting all unsafe conditions and practices to their supervisor.
- Reporting every spill/release to their supervisor.
- Performing their job safely, for their personal safety, the safety of their fellow workers, the protection of the environment and company property. This includes the proper use of safety equipment and strict adherence to safe work practices and established Safety Standards.
- Understanding all safety/environmental policies pertinent to their job responsibilities.
- Participating in safety and environmental training and meetings.
- All employees are required to be trained in this handbook and must keep this handbook available at the worksite in an accessible location and refer to it often.



GENERAL SAFETY RULES

1. Immediately report injuries and/or incidents, no matter how slight, to your supervisor. If necessary, treat the injury at the nearest appropriate medical facility.
2. Immediately report all fires and spills, no matter how small, to your supervisor.
3. Immediately report any unsafe condition or practice to your supervisor. Unsafe equipment must be tagged, marked *DANGER, DO NOT OPERATE* and locked out, if possible, to prevent use.
4. Horseplay or fighting on company premises of any worksite while representing the company is prohibited.
5. All passengers in company vehicles, including rental cars must wear seat belts. The driver is responsible to ensure that all passengers are wearing seat belts prior to putting the vehicle in motion.
6. The illegal use, possession, transportation, or sale of drugs, alcoholic beverages, firearms, deadly weapons, or explosives while on company premises or in a company vehicle is prohibited. The use of prescription drugs must be reported in advance to the employee's supervisor. Employees reporting for work must be "fit for duty", healthy and prepared to work along with not being under the influence of illegal drugs or alcohol.
7. Smoking is permitted in designated areas only.
8. Whenever a safety device is removed from service and/or defeated, the appropriate supervisor shall be notified, the device tagged and locked if possible, with the action properly documented.
9. No work may be started in any area or on any equipment without the knowledge and consent of the person in charge. Do not operate equipment on which you are not trained.
10. Under normal operations, all operating machinery and electrical switchgear must have the design safety guards, switches, and alarms in place and functional.
11. All block valves on pressure relief systems must be locked or sealed open.
12. Use only proper tools and equipment maintained in good working condition. Operation of equipment having a *DANGER, DO NOT OPERATE* tag is prohibited.
13. All jewelry including finger rings, loose clothing, unsecured long hair, and other loose accessories are not to be worn while working. Wrist watches shall not be worn within arm's reach of rotating, electronic or unguarded machinery.
14. When ascending or descending stairways, use handrail and take one step at a time in order to maintain a three-point contact at all times. Running in work areas, except for emergency purposes, is prohibited.
15. Erect barricades around areas of hazardous work such as holes in decking and work areas, trenches, overhead hazardous work, open unattended vessels or hazardous storage. Only the person in charge may grant permission for entry in these areas.



16. Climbing or standing on equipment hoses, piping or valves is discouraged. Approved scaffolding, ladder and appropriate fall protection (Working at Height Expectation) is required if working at heights greater than six feet).
17. Fire extinguishers, alarm boxes, fire doors, air packs, eye wash stations, first aid kits and all other emergency equipment must be in good condition, inspected regularly and kept clear of any obstructions.
18. Use proper lifting techniques (such as bending of knees), obtain assistance for heavier loads and use mechanical lifting aids when available. Do not twist while lifting, pulling or carrying a load.
19. All rules established by company customers to whom the company is contracted will be strictly adhered to by all parties. Where there is a conflict of rules, the more stringent will be enforced.
20. Leaving a work place without permission is prohibited.
21. The use of cell phones in any fashion is prohibited while operating equipment, machinery or while driving your vehicle.
22. While driving in a company vehicle or travelling on company time all company Expectation(s) or rules, state, federal or local laws shall be strictly adhered to.
23. The use of cell phones, in any fashion is prohibited while operating equipment, machinery or while driving in your vehicle.



PERSONAL PROTECTIVE EQUIPMENT

Purpose

To provide minimum requirements of personal protective equipment to ZARNAS COMPANIES employees, subcontractors and visitors.

Definitions

Don/Doff

To put on or take off.

Employer Responsibility

The company is responsible for conducting training, identifying proper Personal Protective Equipment for employees and certifying that hazard assessments and training have been properly documented for its employees.

Supervisor Responsibility

Supervisors are responsible for leading by example, setting the right tone and culture at the worksite: all injuries can and should be prevented, assessing worksites and determining if there are hazards that required PPE, completing a JSA as part of the worksite assessment and advising employees as to what PPE is required for a particular job.

Employee Responsibility

Employees are responsible for wearing, maintaining, inspecting and discarding PPE according to company requirements and manufacturer instructions.

Hazard Assessment

Walk-through survey of work areas to determine what types of Personal Protective Equipment is/are necessary in order to prevent injury from any potential hazard source.

Personal Protective Equipment

Equipment designed to protect from injury to the eyes, hands, feet, face, head and other parts of the body from hazardous substances or conditions. Depending on the type of work, some or all of such equipment may be necessary.

PPE

Personal Protective Equipment

Understanding

Demonstrated knowledge of PPE specifications for each job type and how to properly don, doff, adjust and wear it; limitations of the PPE; and the proper care, maintenance, useful life and disposal of the PPE.



Procedure

1. ZARNAS COMPANIES requirements

- A. All employees, visitors and third party subcontractors shall wear appropriate PPE and clothing when on company property including transportation to and from jobs. The minimum required PPE when working in areas other than offices is hard hats, safety glasses and steel-toed footwear. If a designated walk path is clearly marked and identified as a safe zone, then no PPE is required. No other exceptions should be allowed without express permission of senior management.
- B. PPE, provided by either the company, the individual or the subcontractor must meet expectations established by recognized governmental and/or industry groups.
- C. At job mobilization and demobilization employees must be in uniform and must be in possession of all PPE including a personal flotation device is performing work offshore. Employees are responsible for the serviceably and sanitary condition of their PPE.
- D. Excessively worn or damaged PPE is not to be used and will be replaced by the company with the exception of footwear.
- E. The site supervisor is responsible for ensuring that a hazard assessment has been conducted for his/her area of responsibility. The assessment must identify the workplace evaluated; the date(s) of the assessment, the person making the assessment and the required PPE/JSA may suffice as a worksite hazard assessment. Additional information on workplace hazard assessment for PPE can be found in the company health, safety and environmental manual.
- F. When the worksites or work locations are subject to the requirements of two safety management systems, procedures, expectation or standards, then the system, procedure or standard which is more stringent, will be up held.

2. Head Protection

- A. All personnel working on or around company field locations, when not in a vehicle or the living quarters/office, shall wear a hard hat. Hard hats must be non-metallic (non-conductive or 'dielectric') and meet ANSI Z89.1 Class E and G requirements.
- B. Hard Hats must be inspected frequently for cracks and other signs of damage, replaced when showing signs of damage and never modified in any way.
- C. The company will provide head protection (hard hat) that conforms to ANSI Z89.1 (Class E and G) to its employees and visitors. Subcontractors will be required to supply their own head protection to their employees and visitors. The company reserves the right to change this policy and require its employees to provide their own head protection.
- D. Metal hard hats, bump caps or novelty head protection will not be allowed.
- E. Hard hats worn during an incident and was struck by an object will be taken out of service.



3. Hearing Protection

- A. All personnel working in an area where the noise levels are 85 dB or greater shall wear hearing protection. If a person has to raise their voice in order to talk to another person at a distance of two feet or less, hearing protection must be worn.
- B. Types of hearing protection:
 - 1. Muffs – fitting over the ears. Muffs must be kept clean and sanitary with soap and water or equivalent before use and/or switching users.
 - 2. Reusable earplug – designed for multiple uses, one user only, and must be cleaned with soap and water or equivalent prior to each use.
 - 3. Disposable earplug – discard after use.
- C. Site management personnel will determine locations and equipment that necessitate the need for hearing protection, ensure PPE is available and enforce all aspects of the hearing protection policy that pertain to his/her areas.
- D. Probable high-noise level areas should be reported to supervision for surveying and, if necessary, warning signs posted. Sound level testing must be repeated every two years or when a change to the work area is made that will affect sound levels.
- E. Appropriate warning signs must be posted in high noise areas which are 85 dB or greater. Each site must be posted a copy of OSHA 1910.95.
- F. Appropriate warning signs must be posted on all high noise portable equipment which are 85 dB or greater.
- G. Annual hearing conservation training will be given to employees who are exposed to noise levels of 85 dB (8-hour time weighted average) during regular work assignment. Training will include noise effects on hearing, employee protection methods, use and sanitation of PPE.
- H. Baseline and annual hearing tests will be provided for all company employees working in the field and/or yard who are exposed to noise levels of 85 dB (8-hour time weighted average). Tests of each individual will be completed and reviewed for problem results and/or shifts and employees will be informed of the results. Records will be kept in accordance with the health, safety and environmental policy.

4. Footwear

- A. All personnel working on or around company field locations must wear current ANSI Z41 approved safety-toed shoes/boots.
 - 1. Type of footwear shall be determined using the ZARNAS COMPANIES PPE hazard assessment.
 - 2. At a minimum, must be constructed of permeable resistant material with non-skid soles and ½ but not more than 1½ inch heel.



All safety-toe footwear shall, at a minimum, meet the performance and specification requirements of the American National Standards Institute (ANSI) Z4, ASTM F2412-05 and F2413-05 standard or the local health, safety and environmental requirements. For more information go to: www.astm.org.

5. Eye/Face Protection/Hand Protection

- A. Eye and face protection shall be determined using the hazard assessment process.
- B. All personnel in field locations, when not in a vehicle or the living quarters/office, shall wear current ANSI Z87.1 approved safety glasses.
- C. The use of contact lenses while welding or working with or around chemicals is prohibited.
- D. Safety glasses do not replace other types of eye protection currently required for performing specific job tasks. Other required types of eye protection including splash goggles when working with chemicals and face shields when grinding, chipping or striking.
- E. Personnel who require corrective lenses must wear prescription safety glasses or ANSI approved eyewear designed to be worn over corrective lenses. All eyewear must have side impact protection, when required by the hazard assessment.
- F. Hand Protection – All personnel working at company locations shall wear hand protection appropriate for the potential hazards by using the hazard assessment process. Examples of hand protection include, but are not limited to:
 - 1. Leather or leather-palmed gloves when handling wire rope.
 - 2. Cloth gloves when handling pipe.
 - 3. Chemical-resistant gloves when handling acids or caustics
 - 4. Rubber gloves approved for electrical work.
 - 5. Insulated or heat-resistant gloves when burn protection is needed.
 - 6. Hydrocarbon-resistant gloves when using hydrocarbon solvents, cleaning agents or chemicals.
 - 7. Cut-resistant gloves when using knives.
 - 8. Kevlar gloves and sleeve when grit blasting.
- G. No gloves will be worn while working with rotating equipment.
- H. Rings are prohibited.

6. Respiratory Protection (Refer to HSE Expectation – Respiratory Protection)

- A. All personnel working at company locations shall wear respiratory protection where there is anticipated exposure to dust, residue from sand blasting, fumes, gases and smoke.
- B. The company will provide its employees with respiratory protective equipment if needed. Visitors and subcontractors will provide their employees with approved respiratory equipment as needed.



- C. Personnel who are issued respiratory protection equipment must receive prior training in the care, use and limitation of equipment. Records of training are maintained by the company.
- D. Refer to the company Respiratory Protection Expectation for proper identification of required respirator for the work task and end of life.

7. Fall Protection (Refer to HSE Expectation – Working at Heights)

- A. A full-body safety harness with fall-arrest system lanyard must be worn any time personnel are subjected to a fall potential of six (6) feet or more and which is not otherwise protected.
- B. The fully body safety harness must be properly worn with the anchor point equal to the height of the d-ring or higher and ensuring 100% tie off.
- C. The company will provide its employees with a full-body harness and fall arrest system when needed. Visitors and subcontractors will provide their own approved fall protection system.

8. Training

- A. Prior to working at a company worksite, every company employee shall be trained in the use of PPE and demonstrate an “understanding” of the training.
- B. Retraining shall be required when changes in the workplace render previous training obsolete, changes in hazards have occurred or changes in the types of PPE has rendered previous training obsolete.

9. Responsibility

- A. Site Supervisor
- B. Individual employee



FIRE AND SAFE WORK

Purpose

To establish proper safety precautions taken in order to prevent fires and/or explosions while conducting Fire and Safe Work operations in classified areas. Fire and Safe Work operations that are conducted on client premises will be conducted in accordance with the more stringent of the two Fire and Safe Work permitting processes. Specific actions regarding Fire and Safe Work conducted aboard ships and/or barges are contained in that expectation.

Definitions

Classified Areas

Classified areas are defined as:

All oil platform or rig areas except otherwise designated as approved hot/safe work areas.

Areas within 35 feet of flammable or oxidizing agent storage areas. This includes, but it is not limited to: fuel tanks, paint lockers, dive controls, hyperbaric chambers and oxygen or acetylene bottles.

Any other area as deemed as necessary.

The operations manager must approve and document any exception via the Management of Change process.

Fire and Safe Work

Fire and Safe Work is defined as any open flame, welding, burning, grinding or spark producing activity.

Fire Watch

The person(s) and associated fire protection equipment assigned to standby during permitted welding, cutting or open flame conditions. The responsibility of the fire watch will be this individual function only.

Safe Work Areas

Safe Work Areas shall be established in shop areas for the purpose of conducting welding or burning operations on a daily basis not in the proximity of fuel tanks or other flammable/combustible material.

Safe Work Areas must be free of combustible materials.

No hydrocarbons or other flammables may be stored or used within 35 feet of the designated safe work area.

The Safe Work Area must be equipped with a fully charged and inspected fire extinguisher.

All Safe Work Areas must be clearly marked and identified as an area safe for Fire and Safe Work.



Lower Explosive Limit (LEL)

The lower limit of flammability of a gas or vapor at ordinary ambient temperatures expressed in percent of the gas or vapor in air by volume. No Fire or Safe Work will be allowed if the atmosphere is greater than 10% of the LEL.

Site Supervisor

A company employee designated as the site supervisor by company management.

Procedure

1. General Permit Procedures

A permit is required in all company operations for any work affiliated with operations requiring an open flame, welding, hot tapping, burning, blasting, opening energized electrical junction boxes or portable spark producing devices including heaters, electrical hand tools and/or portable equipment not rated intrinsically safe within a classified area. No work covered by these guidelines may commence before a permit is issued. (Refer to Expectation – Permit to Work).

****Grinding on any surface containing hydrocarbons must be permitted****

- A. Fill out the permit. All conditions of the permit must be met and the permit must be signed.
- B. Review the permit conditions. The company site supervisor must verify that the following steps are completed before signing a Fire and Safe Work Permit.
 - 1. All related equipment has been properly prepared and isolated as outline in the company Lock Out/Tag Out and Confined Space Guidelines and Policies. (Refer to HSE Expectation Lock Out/Tag Out and Permit Required Confined Space.)
 - 2. The permit has been reviewed by the job supervisor, the party responsible for the job or consultant in charge of the facility or area. The site supervisor must physically review the area and operating conditions before signing the permit.
 - 3. Provisions must be made, if required, for the following:
 - a). Scaffolding (Refer to HSE Expectation – Working at Heights).
 - b). Drains and sewers covered with proper vapor barrier.
 - c). Isolation of Fire and Safe Work Area from other equipment or areas using fireproof tarps or water fog.
 - d). Proper ventilation of equipment.
 - e). Trained personnel for fire watch equipped with the proper fire extinguisher and safety equipment.
 - f). Emergency response.
 - g). Shoring and trenching for excavation. (Refer to HSE Expectation – Hazard Identification & Risk Assessment)



4. A pre-job safety meeting and hazard identification process have been conducted to ensure all safety and health precautions are understood by the person(s) who will perform the work. Person(s) performing the work should sign the permit.
 5. Necessary gas tests have been performed for explosiveness, toxicity or other hazardous conditions with reading recorded on the permit. (Consult management for assistance if needed).
 6. The welding/cutting equipment have been inspected for the following:
 - a) Cracks, splits or loose connections in welding leads. Repair or use a red tag.
 - b) Exhaust spark arrestor and drip pans on machines used off shore.
 - c) Leaks in connection to oxygen or acetylene bottles, hoses and valves.
 - d) Installation of back flow valve/flash arrester.
 7. Fire and Safe Work permits will be issued for:
 - a) A maximum of 12 hours of continuous work.
 - b) Until shift change.
 - c) Until changes beyond those in the original permit.
 8. Fire and Safe Work Permits will be issued for specific tasks only.
 9. Approve the permits.
 - (a) The company supervisor, after verifying that all permit requirements have been met, may sign the Fire and Safe Work Permit.
2. Operations Requiring Permits
- A. All work shall meet all the requirement of the permit.
 - B. Immediately after the work is completed, the work area and adjacent are will be inspected to ensure there has been no spread of sparks or heat. The permit will be returned to the supervisor after the job is completed and the area is secure.
 - C. No Fire and Safe Work will be permitted in the presence of an explosive atmosphere.
 - D. No Fire and Safe Work is permitted on any flammable substance storage tank, barrel or container
3. Responsibilities of Permitting
- A. All involved personnel shall be fully aware of and comply with all regulations. Additional responsibilities are as follows:
 1. The person taking out the permit shall:
 - a. Fully complete the Fire and Safety Work permit and ensure that all requirements of the permit are met.



- b. Coordinate work with the company supervisor or designated alternate in charge.
 - c. Sign the permit.
2. The person doing the work shall:
 - a. Complete gas tests, if necessary, to determine explosive toxicity or other hazardous conditions.
 - b. Inspect and place fire extinguishers, fresh air equipment and other safety equipment.
 - c. Sign the permit.
 - d. Advise other personnel in the vicinity not to perform any operation that is likely to change the conditions and this void the permit.
 - e. Prevent other operations that may conflict with the permitted work.
 - f. Instruct all personnel concerned to stop work if a change occurs that can create an unsafe condition.
 - g. Inspect the work area after the work is complete.
3. The company site supervisor or the designated alternate shall:
 - a. Ensure the safety of personnel and equipment under his/her supervision.
 - b. Ensure that all elements of the permit procedure are completed.
 - c. Sign the permit.
4. The person doing the work shall understand the conditions of the Fire and Safe Work Permit and sign the permit before starting the job.
5. Fire watch area selection
 - a. During the hazard identification and permit process identify the following:
 - i. Locations where possible minor fires may develop.
 - ii. Identify combustibles less than 35 feet from the hot work area.
 - iii. Identify all combustible materials further than 35 feet or further away from hot work area.
 - iv. Identify all walls, floor openings and adjacent spaces in the hot work area that may be affected by the hot work.
 - v. Identify any combustibles in those adjacent areas and confirm they are a minimum of 35 feet in distance away.
6. The fire watch shall:
 - a. Not perform any other duty while “watching.”
 - b. Possess knowledge of and use of fire equipment as necessary.
 - c. Stop the Fire and Safe Work if sparks, flame or heat is projected outside the permitted area.
 - d. Alert personnel entering the permitted area of hazards, ex. arc-flashes, grinding, cutting, overhead hazards, etc.
 - e. Remain at the site for 30 minutes to assure non-flare up from heat.
 - f. Sign the permit after the 30-minutes safety period.
 - g. Tag, document and turn in any fire extinguishers that have been discharged.



4. Training

- A. All affected employees will be training in the expectation

5. Responsibility

- A. Supervisor signing the permit
- B. Person conducting the work
- C. Person designated as fire watch

LOCKOUT/TAGOUT (ENERGY ISOLATION)

Purpose

Energy sources must be controlled in order to prevent injury to people, damage to property and or compromise the environment. To establish the minimum expectation of controlling energy sources during repair and/or maintenance of equipment, completing tasks where energy sources will cause harm to people, assets or the environment.

Definitions

<u>Authorized Person</u>	A person who places a lockout or tagout (LOTO) device on equipment in order to perform servicing or maintenance on the equipment. This person is the only person who may take off the lock or tag.
<u>Energized</u>	Connected to an energy source or containing residual or stored energy.
<u>Lock Out</u>	A device that utilizes a positive means such as a lock, to hold an energy isolating device ensuring that the energy isolating device and the equipment being controlled cannot be operated until the lock out device is removed.
<u>Tag Out</u>	The placement of a tagout device on an energy isolating device to indicate the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.

Procedure

These guidelines shall be followed prior to beginning operations from any worksite and when performing repair and/or maintenance on all equipment including electrically-driven machinery and equipment: mechanical equipment such as compressors, fore pumps or cranes; hydraulic equipment; equipment operated as pneumatic, thermal or chemical energy sources; and pressurized equipment.

1. LockOut/TagOut Permit (Energy Isolation)
 - A. The supervisor and the person/persons perform the task must fill out the permit.
 - B. All requirements of the permit must be met prior to the start of work.
 - C. The permit is valid for 12 hours or end of shift whichever occurs first.
 - D. Any unscheduled work stoppage, unforeseen hazard or emergency nullifies this permit.
 - E. The completed permit will be turned in with the job paper work or maintained with the protect/job file/vessel, platform files.



2. Locks and Tags

A. All locks, tags and other hardware required by this guideline will:

1. Be provided by the company.
2. Be available to all personnel at all times.
3. Have only one key for a lock or a set of locks.

B. Each tag will:

1. Note the equipment name/identification.
2. Note the condition or reason for tagging.
3. Note the date/time.
4. Include the signature of person applying for the tag.
5. Include the condition to be avoided by the lockout/tagout (ex. *Do Not Start, Do Not Open, Do Not Close, Do Not Energize, Do Not Operate* etc.)

C. ONLY the person who placed the lock and tag in service can remove the lock and tag.

D. Locks and tags WILL NOT be used for any purpose other than lockout/tagout.

E. The following will be an inventory list of the lockout/tagout kit to be maintained at each applicable worksite and project.

1. Six Master locks (6) with a single key.
2. Two (2) multiple lock out hasps.
3. A log listing what item is locked out, who is locking it, time of lockout and time of removal.
4. Three wire lockout straps for locking out valves and other items.
5. Twenty-five (25) lockout tags; cardstock.
6. Four (4) lockout tags; vinyl.
7. Twenty-five (25) nylon cable ties.
8. Two (2) markers for tag identification.
9. Two (2) black pens for filling out log for use.

* If any site requires additional lockout devices they may order these separately. The kit shall be inventoried after each use for replenishment. *



3. General Lock and Tag (Energy Isolation) Preparation and Installation

*** LOCK-TAG-CLEAR-TRY ***

- A. Survey the work area and equipment to verify that all equipment can be locked out or secured. If an energy-isolating device is capable of being locked out, then this expectation requires that a lockout and tagout be utilized. Only when an energy isolation device is not capable of being locked out, shall a tagout be utilized.
 - 1. Always review manufacturer recommendations for special instruction on energy isolation.
- B. Shut down or turn off the machine or equipment to be worked on.
- C. Physically locate all valves and switched and close, turn off or blind to isolating any energy source from the machine or equipment to be worked on, reviewing the most current flow diagram of the equipment will assist in location all isolation valves.
- D. Render safe any stored hazardous energy by relieving, disconnecting or restraining it.
- E. Place a lock or tag on each energy isolating device. The locking party (authorized person) will hold the one key until completion of the job or authorized relief person completes the job.
- F. Verify that the equipment is not operable.
- G. Personnel
 - 1. Only training personnel are allowed to start up machinery
 - 2. When shift or personnel changes occur during maintenance and/or repair activities, the designated company representative in charge shall ensure continuity of the lockout/tagout protection. Each worker shall be responsible for removing his own padlock and tag at the completion of his/her shift. If work is to cease until the following day, the supervisor shall place his padlocks and tags. When work resumes the worker shall affix his personal padlock and tag to the equipment and the supervisor shall remove their lock and tag.

4. Electrical LockOut/TagOut (Energy Isolation) Procedure

- A. The following procedures for lockout/tagout (energy isolation) (lock, tag, clear, try) shall be followed when exposed to electrical hazards.
 - 1. Perform an initial evaluation to determine exposure(s).
 - 2. Notify affected personnel and properly shutdown/de-energize the equipment.
 - 3. The person doing the work shall lock out using an approved lock (remember to LOCK open circuit breaker(s). If the device cannot be locked out, it must, at a minimum, be de-energized and tagged.
 - 4. TAG the lock with a *DANGER, DO NOT OPERATE* tag.



5. Each person doing work shall install a lock or tag. There must only be one key for a lock or set of locks and that one key shall be held by the locking employee(s) until completion. A crew lock out is acceptable only when the key(s) of the designated person to lock is properly secured and locked by all parties involved.
 6. CLEAR the area of personnel and tools prior to trying to start the equipment.
 7. Before starting work, TRY to energize the equipment locally.
 8. Only the person(s) originally attaching the lock and tag is authorized to remove the lock and tag. If absolutely unavailable, the supervisor can assume responsibility for removal of the lock and tag and notification of all parties.
 9. When work is complete, affected personnel shall be notified, locks and tags removed and the equipment may be placed back in service.
 10. Unplugging a machine or electrical device does not constitute a lockout. The machine must be tagged and if possible a lock box placed over the plug to eliminate the potential for plugging into a power source.
5. Process, Hydraulic and Pneumatic Energy Sources LockOut/TagOut (energy isolation) Procedure
- A. At least one of the following lockout/tagout procedures shall be used to safely isolate other types of stored energy sources.
 1. Blinding of process piping and equipment.
 2. Disconnecting of piping.
 3. Double block and bleed process piping where block valves are closed, locked (chained) and tagged with a "bleed" or vent valve open in between.
 4. Single block valves closed, locked and tagged as minimum for certain routine maintenance operations.
6. Mechanical Energy LockOut/TagOut (Energy Isolation) Procedures
- A. Chains, blocking, locking pins or other hardware shall be used for isolating, securing or blocking of machines or equipment from mechanical energy sources.
7. Lock and Tag Removal – Temporary or Permanent
- A. Reinstall all guards.
 - B. Return all exposed electrical wiring to conformity with electrical code requirements.
 - C. Remove all blind flanges and properly connect piping.
 - D. Remove tools, materials and other non-essential items.



- E. Inspect and verify that all machine or equipment components are operationally intact.
 - F. Notify workers in the area that lockout/tagout (energy isolation) devices are ready to be removed.
 - G. Ensure that all personnel are safely positioned or removed from the area.
 - H. Remove each lock and tag device from each energy isolating device.
8. LockOut/TagOut (Energy Isolation) Log
- A. A lockout/tagout (energy isolation) log will be maintained for each project and worksite.
9. Employee Training
- A. The company shall provide training to ensure that the purpose and function of the lockout/tagout (energy isolation) procedures are understood. Knowledge and skills required for the safe application, usage and removal of lockout/tagout (energy isolation) devices are training objectives.
10. Responsibility
- A. Site Supervisor
 - B. Authorized Person



PERMIT REQUIRED CONFINED SPACE ENTRY

Purpose

To establish procedures necessary for the safe preparation, entry and restoration of a permit-required confined space to be entered by personnel. No work may be done in a permit-required confined space until a permit has been issued for the work. This expectation is designed to permit man-entry and does not authorize hot work. Hot work in a confined space must be authorized by permit as defined in the health, safety and environmental manual and this handbook.

Definitions

Permit Required Confined Space

A confined space large enough to enter but, has limited entry or exit and is not designed for continuous employee occupancy and has any one of the following characteristics:

1. Contains or could contain a hazardous atmosphere.
2. Contains a material that could engulf a person.
3. Has an internal configuration which could trap a person inside.
4. Contains other recognized significant safety or health hazard.

Permit-required space includes, but is not limited to storage tanks, tank trucks, vessels, furnace boxes, ducts, flues, manholes, valve boxes, cellars, pipelines, pits or excavations with side walls four (4) feet or deeper, without easy means to enter or exit or any other confined spaces which may contain toxic or corrosive conditions, flammable, oxygen deficient or oxygen rich atmospheres.

Entry

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

Entry Supervisor

The company site entry supervisor must be a qualified competent person and is responsible for proper identification and preparation of the permit space to be entered. They should know proper procedure for testing and monitoring of the permit space to determine if acceptable or prohibitive conditions exist. In preparation for entry a Confined Space Entry Permit (Refer to Permit to Work) must be initiated and completed according to the following procedure.

Entrant (Authorized Workers)

One or more properly equipped and trained person(s) who have been authorized by the company site entry supervisor to enter a permit space. These workers will be made aware of the known hazards, be properly trained in the use of personal protective equipment required for entry and be versed in visual and/or hand communication signals to enhance the monitoring of the entrants status by the attendant while within the permit space.



Attendant One or more properly equipped and trained (First Aid/CPR) person(s) stationed outside the permitted space. The attendant shall protect the entrants by continuously monitoring all activities within and outside the permit space. At no time shall the attendant entrant enter the permit space. If an emergency situation arises, the attendant shall actively participate in a non entry rescue role, requesting emergency services, providing accurate information to rescue personnel (number of entrants, possible problems, atmospheric conditions, time of last contact, etc.) and also in directing the emergency situation. These are the only job duties of the attendant while standing the post.

Rescue Service One or more properly equipped and trained person(s) designated by the company site entry supervisor to rescue or remove injured entrants from permitted spaces. This service should be stationed onsite and may be a designated employee or outside subcontractor who is trained in rescue.

Emergency Evacuation Equipment That equipment that is located outside the permit space that would be needed to rescue or extract a worker from the permitted space. The equipment is not limited to, but should include the following: Self Contained Breathing Apparatus or approved hose line with escape feature, lifelines, harness and other equipment such as hoist where rescuing workers from deep excavations, five (5) feet or more in depth. A first aid kit shall also be located at the worksite.

Hazardous Atmosphere An atmosphere containing flammable vapors, oxygen deficiency or oxygen enrichment or any air containment measured by instrumentation to be in excess of allowable limits.

Isolation Action taken to prevent the entry of hazardous materials or the creation of hazardous conditions in a permitted confined space.

Immediately Dangerous to Life or Health (IDLH) A condition that possess an immediate or delayed threat to life, could result in irreversible adverse health effects or could interfere with an individual's ability to escape unaided from the confined space. Examples could include, but are not limited to, oxygen deficiency, explosive or flammable atmospheres and/or concentrations of toxic substances (ex. carbon monoxide, hydrocarbons, hydrogen sulfide, etc.)

Procedure

1. Before beginning work
 - A. Permit space preparation:



1. The permit space must be properly isolated prior to entry. Isolation shall incorporate the lockout/tagout of pressurized vessels or piping, electrical sources, stored energy, valves and hydraulic equipment. (Refer to LockOut/TagOut).
 2. The installation of blinds is required where these lines may reasonably cause contaminants to flow into the space. Disconnection and blinding should take place as close as possible to the permit space. Any isolation or removal of equipment should be documented on a work sheet and attached to the permit.
 3. The required duties of all employees/subcontractors will be reviewed prior to opening the permit space. This shall include, but is not limited to, the site entry supervisor, authorized workers, standby personnel and rescue services.
 4. Upon opening the permit space, a *DO NOT ENTER* sign shall be posted at the entrance. This sign shall stay in place until the Confined Space Permit is completed and signed. A *DANGER CONFINED SPACE ENTRY IN PROGRESS. NO UNAUTHORIZED ENTRY* sign will be in place upon entering the permit space by any occupant.
2. Atmosphere checks and preparation
- A. If natural ventilation is inadequate, mechanical ventilation must be established to ensure movement of fresh air in the permit space. Mechanical ventilation should be started prior to and after testing. Ventilation shall be continued during the entry process to help reduce and/or eliminate atmospheric hazards.
 1. The desired method for air exchange is to fill the tank with water and drain where applicable.
 2. Potential hazards presented by piping which run through void space should be considered.
 3. The site supervisor must approve any exceptions to ventilation via the Management of Change process (Refer to MOC).
 4. Air driven or explosion proof electric fans shall be used to pull air from permit space to ensure proper ventilation. Internal combustion (non-explosive proof power sources) may be utilized for forced air ventilation of the permit space when worksite has all potential hazards secured and the air intake of the ventilation system is placed in an area that prevents contaminants from entering the fan intake and being discharged into the permit space.
 - B. Atmospheric checks shall be taken at various levels of the permit space and recorded on the permit. Ventilation shall be discontinued during this process. In some cases, it may be necessary to enter the permit space to check properly the atmospheric conditions. If this is required an air-supplied respirator with an approved facemask or self-contained breathing apparatus or an approved hose line until with an escape pack must be work. In this case, the worker must be attached to a lifeline or other rescue device during this initial entry.
 - C. The atmosphere, within a permit space shall be tested:
 1. Prior to entry

2. After each break or interruption of work
 3. At each shift change
 4. At intervals determined by the competent person
 5. Following an employee complaint or concern
- D. Test instruments shall be calibrated in accordance with manufacturer's instructions. Each instrument shall be tested prior to its use for the completion of a *Confined Space Permit*.
- E. Atmospheric checks shall include the following:
1. Safe for entry - Oxygen (minimum - 19.5%, maximum 22%) Oxygen levels must also be checked before explosive levels.
 2. Safe for entry – Flammable or Explosive Vapors (% of LEL)
 - a) 0% of LEL without respiratory equipment; Maximum of 10% of LEL with respiratory equipment; Above 10% of LEL, rescue purpose only with respiratory equipment.
 3. Safe for Fire and Safe Work Permit
 - a) Less than 10% of LEL (preferred 0% of LEL)
 - b) NOTE: The safety department or site supervisor shall approve any exception via the Management of Change process. (Refer to MOC)
 4. Safe for Entry – Temperature
 - a) Maximum air temperature 125°F for allowable entry. Maximum wall temperature 140°F
3. Site preparation
- A. A safe means of access and egress shall be provided at all times when the permit space is entered or exited from above or below grade. This could include a portable ladder or scaffolding that is properly installed and secured for climbing.
 - B. All lighting equipment that is required for working within the permit space shall be explosion-proof and have a ground fault circuit interrupter (GFCI). Only intrinsically safe or explosion-proof flashlights are permitted within the permit space when work will be limited to a short time period.
 - C. All electrical equipment (such as air mover and vacuum truck hoses) shall be properly grounded or bonded to prevent static discharge (sparks).
 - D. Fire extinguisher(s) and other firefighting equipment shall be available at the worksite if flammable or combustible materials are present. The extinguisher(s) shall be inspected to confirm that it is in good working order.
 - E. Emergency evacuation equipment shall be available at the worksite rescue and extraction equipment will be inspected to ensure that it is in proper working condition.



4. Permit issuance

- A. Upon completion of the above requirements, the company competent person shall review the preparations and the permit space. If all requirements have been met, the supervisor may sign the permit and shall post it conspicuously at the worksite.

5. Entry into the permit space

- A. Prior to entry, the company competent person shall review the following with all authorized workers (employee/subcontractor): known hazards within the permit space, the responsibility of each authorized worker (supervisors, workers, standby personnel and rescue services) and the location procedures for calling for outside emergency services. Upon completion of all confined space requirements, the operations manager must be made aware that the confined space has been deemed safe for entry and will proceed.
- B. Authorized employees may enter the permit space only after all confined space entry permit requirements have been met, and the permit is signed and issues and management has approved the entry.
- C. Unauthorized personnel shall not be allowed entry.
- D. If the permit space is left unattended, the entrance shall be locked or secured.
- E. The permit space atmosphere shall be rechecked as often as necessary while entrants are in the permit space to ensure a safe working environment.
- F. If conditions required, a fire and safe work permit should be issued in accordance with the Fire and Safe Work Expectation (Refer to Fire and Safe Work).
- G. Stand by personnel must remain in contact (visual, hand signals, soft line, voice, etc.) with the personnel in the confined space at all times.
- H. Authorized employees shall wear a full body retrieval harness with attached retrieval line while working within the permit space. In spaces that require a vertical descent of five (5) feet or greater, the retrieval line shall be connected to the hoist.
- I. Rescue services shall be on location while a permit space entry is in progress.
- J. At the site, a competent person shall terminate the permit and instruct all entrants to evacuate the permit space if:
 - 1. An unauthorized worker enters the permit space.
 - 2. Operations covered by the permit have been completed.
 - 3. Conditions not allowed under the permit arise in or near the permit space.



6. Restoration of the permit space

- A. When all work is completed, the permit space must be restored to normal service conditions. Use the permit as a checklist for proper restoration. The competent person will review the work, the restoration of the permit space and, if everything is acceptable, initial the permit within 24 hours. A copy of the permit should be kept with other records pertaining to the work done. The original permit must be maintained for one year.

7. Training

- A. Annual training shall be conducted to ensure that each employee is well versed as to his/her role as an active participant in the entry of a permitted space. Instructions and training material will be made available through the company or an approved subcontractor.

8. Program review

- A. Permit required confined space entry permits must be reviewed periodically, no less than annually. The company safety department will perform periodic reviews of permit-required confined space entry permits.

9. Responsibility

- A. Company competent person
- B. Entry Supervisor
- C. Site Supervisor
- D. Safety Manager



HAZARD COMMUNICATION

Purpose

To establish an expectation for using and handling chemicals in the workplace, ensuring that all employees, exposed to hazardous chemicals are aware for the specific hazards presented by these chemicals and are trained to protect themselves from the dangers that exposure to these chemicals might present.

Definitions

<u>Chemical</u>	Any element, compound or mixture of elements and/or compounds; this includes solids, gases and liquids.
<u>Hazardous Chemical</u>	A chemical posing a physical or health hazard.
<u>Health Hazard</u>	A chemical for which there is statistically significant evidence, based on at least one study in accordance with established scientific principles that acute or chronic health effects may occur in an exposed employee(s).
<u>Label</u>	Written, printed, or graphic material displayed on or affixed to a container.
<u>Safety Data Sheet (SDS)</u>	Document containing chemical hazards and safe handling information that is prepared in accordance with OSHA requirements.
<u>Personal Protective Equipment</u>	Protective equipment worn to prevent occupational injury or illness; safety glasses, gloves, respirators, steel-toe boots, etc.
<u>Physical Hazard</u>	A chemical for which there is scientifically valid evidence that it is a combustible liquid, a compressed gas, an explosive, an organic peroxide, an oxidizer, a pyrophoric, or that it is flammable, unstable (reactive) or reacts violently when in contact with water.

Procedure

1. Required labels
 - A. Each chemical container on company property shall have a hazard communication label on it. Subject to state law, the hazard communication label may have either a basic hazard index of the National Fire Protection Association (NFPA) label.
 - B. Chemical labeling must list, at a minimum all of the following information:
 1. Name and address of supplier or manufacturer.
 2. Chemical identity obtainable from original label and SDS sheets.



3. Appropriate hazard warnings (words, pictures, or symbols which convey hazard(s) of chemical in container).
 4. Hazard communication labels must be legible and in English.
- C. Exceptions to required labeling
1. When an employee transfers a chemical to a portable container, which is intended for use only during that employee's work shift, a hazard communication label is not required. However, the container must remain under the control of the employee who made the transfer and the product content must be identified on the container.
 2. Piping is also exempt (with the exception of some states).
2. Chemical Inventory list
- A. Each department manager shall compile and maintain an accurate inventory list of all hazardous chemicals used or stored in their work place. The inventory shall be modified as new chemicals are received. Chemical inventories will be kept in the front of the SDS book.
3. Safety Data Sheets (SDS)
- A. At any site or location, employees or representatives shall not accept chemical deliveries without a SDS. This includes chemicals delivered in house from company inventory to other worksites.
- B. At any site/location a representative who initially takes delivery of the chemical shall be responsible for obtaining and forwarding the SDS to the supervisor or person in charge so that it may be filed in the SDS book.
- C. If any information is missing on the SDS, the shipping and receiving supervisor must request a revised SDS from the vendor.
- D. The company supervisor, assisted by the safety department shall review all SDS and distribute approved/revised chemical SDS sheets to applicable personnel.
- E. When material is transported, a copy of the SDS must be transported with the material.
- F. The supervisor is responsible for distribution of SDS to his/her personnel. The SDS are to be placed in the SDS book or added to the database where applicable. SDS' should be easily accessible to each work location.
- G. SDS are specifically identified as exposure records. The site/location management shall maintain a retention file of each SDS. The retention file shall also contain copies of all directives and correspondence regarding chemicals. Each SDS in the retention file must be maintained for at least 30 years or the life of the product.



4. Training

- A. Training will include basic hazard communication. Employees will be trained in the use of hazardous chemicals initially or whenever a new chemical is introduced or training is requested by the employee. Training for new employees will be conducted during the new hire orientation.

5. Training of employees for non-routine tasks

- A. Prior to the start of any non-routine work, all employees who will be performing such work such seek information from their supervisor regarding the following:
 - 1. Hazards involved in non-routine tasks associated with the work to be performed, ex. confined space entry
 - 2. Hazards of chemicals in unlabeled pipes
 - 3. Nature of hazardous chemicals expected to be encountered
 - 4. Hazards associated with these chemicals
 - 5. Required personal protective equipment and/or safe work practices
 - 6. Applicable SDS

6. Responsibility

- A. Department Manager
- B. Site Supervisor
- C. All Employees



RESPIRATORY PROTECTION

Purpose

To provide employees respiratory protection from air borne work place contaminants when it is not feasible to control exposures through the use of engineering controls and work practices.

Definitions

<u>Cartridge Type Respirator</u>	A negative pressure air-purifying respirator whereby air is drawn through a filter by the wearer's breathing action causing a negative pressure inside the mask. This type of respirator is for site-specific jobs only. Review of exposures and use limitations must be done prior to use.
<u>Contaminants</u>	Toxic gases, harmful dusts, fogs, fuels, mists, gases, smokes, sprays or vapors, when such contaminants are above their permissible exposure levels.
<u>Immediately Dangerous To Life and Health (IDLH)</u>	Atmosphere that contains a toxic contaminant(s), which has potential to cause adverse health effects or death should worker inhale the toxic contaminant(s).
<u>Negative Pressure Field Fit Test</u>	A test to ensure initial face-to-respirator seal effectiveness. The wearer dons the respirator and performs a negative pressure test by closing off all air inhalation points and takes a normal inhalation breath. The respirator will collapse toward the wearer's face if the seal is secure.
<u>Negative Pressure Respirator</u>	A respirator that uses a cartridge, canister or a single use dust mask to remove special contaminants from the air drawn through the cartridge, canister or dust mask. This type of respirator may only be used after the wearer has passed an annual respirator fit test and then only upon the approval of the site supervisor.
<u>Self-Contained Breathing Apparatus (SCBA)</u>	A respirator equipped with a regulator assembly capable of providing positive pressure to the air mask and having an air cylinder with at least 30 minutes air supply. This respirator unit is commonly referred to as a <i>Scott Air Pak</i> .
<u>Supplied Air Respirators (SAR)</u>	A positive pressure respirator with a five (5) minute escape cylinder. The primary air supply is provided via a hose connected to a pressure regulated 220 cubic inch (minimum) air cylinder. This respirator unit is commonly referred to as a <i>Hoseline Air Mask</i> .



Procedure

1. Respirator

- A. A supplied air respirator and/or self-contained breathing apparatus (SCBA) will be the respirator of choice for protection from toxic gases, harmful dusts, fogs, fumes, mists, gases, smokes, sprays or vapors when contaminants are above their permissible employee exposure level. (Reference the SDS for the particular permissible employee exposure level). (Refer to Hazard Communication).
- B. Negative pressure (Half Mask Air Purifying Respirator) type respirators may be used for most tasks as approved by the Site Supervisors. This type air purifying respirator shall be worn during all spray-painting operations and when using solvents and cleaning fluids as directed on the SDS. Always refer to the operating and maintenance instruction manual for the selected respirator. This type air purifying respirator will not be worn in atmospheres where the concentration of the contaminant is immediately dangerous to life or health (IDLH) or where toxic air contaminants exist.
- C. Air-purifying elements (cartridges are color coded to protect against the specific exposures):

Black	Organic Vapors	White	Acid Gases
Yellow	Organic/Acids	Green	Ammonia and Methylamine
Gold/Black	Organic/Formaldehyde	Pink	P-100 Particulate
Gold	Multi gas and vapors	Pink/Black	P-100 Particulate / Organic Vapors
Pink/Yellow	Organic Vapors/Acid Gases/P100	Pink/White	Acid Gases/P-100 Particulate
Pink/Green	Ammonia/Methylamine/ P-100	Pink/Gold/Black	Organic/Formaldehyde/ P-100
Pink/Gold	Multi Gas/Vapor/P-100	Pancake	P-100 Pancake Particulate Filter

2. Care of Respirators

- A. Before and after each use workers will inspect respirators. Inspection shall consist of checking tightness of connections, condition of face pieces, head band, valves, canisters and rubber parts. Supervisors shall be made aware of respirators needing repair or replacement. Supervisors must provide spare equipment. Before each use, the user shall perform a field respirator field test.
 - 1. Respirators with any defects shall not be worn.
 - 2. Respirators that are permanently issued to employees shall be kept clean and in good working order by that employee. If signs of wear and tear begin to show, the respirator must be returned to the Supervisor and exchanged.
 - 3. Stored respirators will be inspected after each use or at least monthly by the supervisor of the users department. Any irregularities that are found will be corrected.
 - 4. The user of a respirator is responsible for cleaning and decontamination of the respirator after each use.



5. The SCBA's shall be thoroughly inspected after each use and at least once a month.
 6. Change filter as per manufacturer recommendations.
3. Use of respirators
- A. Prior to use of any respirator, a tight facial seal must be obtained which is then checked by a field respirator fit test. This is the responsibility of the individual user.
 - B. Respirators shall not be worn under certain conditions: facial hair, absence of dentures, sideburns, eyeglass temple pieces, etc., prevent a good face seal.
 - C. Contact lenses shall not be worn under a respirator.
 - D. The following is required prior to using respirators where an atmosphere is or has the potential to become Immediately Dangerous to Life and Health (IDLH): Refer to and review any written procedures for a specific job. (ex. H₂S, Permit Required Confined Space Entry Expectation, etc.)
 - E. The following are key considerations when preparing for work in an IDLH atmosphere:
 1. Type of respirator to be worn.
 2. Toxic atmosphere potential.
 3. Communication techniques to be used.
 4. Basic rescue equipment/devices needed.
 - F. While working in an IDLH atmosphere, a stand-by person must be present at all times and positioned outside the IDLH atmosphere. Communication by voice, visual or hand signals must be maintained between the standby person and the worker in the IDLH atmosphere.
 - G. A supplied air respirator or SCBA shall be available for the standby person.
 - H. Means of communication or transport must be available on-site for emergencies.
 - I. Rescue equipment (lifelines, lifting harnesses, winching devices or the equivalent) must be used when other assistance is not immediately available.
 - J. H₂S presents an IDLH atmosphere with concentrations of gas are suspected or known to be 100+ ppm.
4. Training
- A. Employees shall be trained prior to performing a job that requires a respirator. Refresher training is required annually.
5. Medical Evaluation Questionnaire
- A. Any employee required to wear a respirator any time during a calendar year must complete a respirator *Medical Evaluation Questionnaire*.



- B. A licensed physician shall determine whether use of a respirator could put an employee at increased risk due to medical impairment and shall evaluate all questionnaires.
 - C. Questionnaires shall be obtained from human resources and shall be returned following the physician evaluation.
6. Recordkeeping and access to records
- A. The following records shall be maintained in this plan:
 - 1. A list of employees who are required to wear respirators. The human resources department will maintain these records.
 - 2. Available written info regarding medical evaluations, fit testing, employee exposure and medical records and exposure analysis results and related test documentation. The human resources department will maintain these records.
 - 3. Respirator inspection records shall be maintained by the appropriate management.
7. Respiratory protection evaluation
- A. The safety department shall review this expectation annually for effectiveness.
 - B. Review shall consist of:
 - 1. Selection and use of respirators appropriate for the job task.
 - 2. Documentation of training.
 - 3. Confirmation that all job tasks requiring respirators have been identified.
 - C. Consult with employees to identify problems with equipment.
 - D. Site supervisor shall frequently inspect the work place to ensure that respirators are cleaned and maintain properly.
8. Responsibility
- A. Site Supervisor
 - B. Program Administrator
 - C. Human Resources Department
 - D. Safety Department

WORKING AT HEIGHTS

Purpose

To establish minimum fall protection requirements for personnel working where a fall hazard exists.

Definitions

Competent Person

One who is trained and certified capable of identifying hazards in the surrounding working conditions, and has authorization to take prompt corrective action.

Personal Fall Arrest System

A system used to arrest an employee in a fall from a working level.

Free Fall

Act of falling before a fall arrest system begins to apply force to arrest the fall.

Full Body Harness

A harness designed with straps that will secure about the employee in a manner that will distribute the force of a fall over at least the thighs, pelvis, waist, chest and shoulders with the means of attaching it to other components of a personal fall arresting system.

Lanyard

A flexible line, rope or strap, which generally has a connector at each end for attaching to the body harness and a shock absorbing/deceleration device and anchor point.

Locking Snap Hook

A connector consisting of a hook shaped member with a self-closing, self-locking keeper that remains closed and locked until it is manually unlocked and pressed open for connection and disconnection. This is sometimes also referred to as a double locking snap hook.

Lifeline

A component consisting of a flexible line for connection to an anchorage point at one end to hang vertically or connected to anchorage points at both ends to stretch horizontally and which serves as a means for connecting other components of a personal fall arrest system to the anchorage.

Self-Retracting Life Line

A deceleration device containing a drum wound line which can be slowly extracted from or retracted onto, the drum under slight tension during normal employee movement and which after the onset of a fall automatically locks the drum and arrests the fall.

Scaffolding

Any metal, tubular or frame including such as braces, brackets, boards planks, trusses, legs, ladders, etc., erected for the purpose of access or a working surface.



Procedure

It is mandatory that anyone 6 feet or more above a working surface or within 6 feet of a leading edge shall use a fall protection system 100% of the time. All tasks requiring an employee to work at a height of 6 feet above the surface or within 6 feet of a leading edge not protected by handrails or working over water not protected by handrails shall obtain a *Working at Height Permit* (Refer to HSE Expectation – Permit to Work).

1. Working at height permit
 - A. The supervisor and person(s) performing the task must fill out the permit.
 - B. The permit is valid for 12 hours or end of shift whichever occurs first.
 - C. Any unscheduled work stoppage, unforeseen hazard or emergency nullifies the permit.
 - D. All requirements of the permit must be met prior to the start of work.
 - E. The completed permit will be turned in with the job paperwork and maintained at the worksite.
2. Fall protection for unprotected sides, edges and wall openings
 - A. Personnel working six (6) feet or more above a lower-level shall be protected from falling by the use of a guardrail system, fall arrest system or safety net.
 - B. Stair ways, ramps, runways or other walkways four (4) feet or more above a lower level shall be protected by a guardrail system on all sides.
3. Personal fall protection systems
 - A. When an employee is working in an area where there is a potential to fall six (6) feet or more, approved fall protection shall be used. This includes, but is not limited to, a full body harness and a lifeline, lanyard, deceleration device or positioning device.
 - B. When working outside of railings and over water, both full body protection and a personal floatation device shall be used.
 - C. Persons using a fall arrest system shall practice 100% tie-off (being protected from falls at all times). This will be achieved by use of a double strap lanyard or self-retracting lifeline.
 - D. The minimum free fall distance of six (6) feet should never be exceeded, as this would cause a greater arresting force on the employee. To assure that the six (6) foot maximum free fall is not exceeded, always tie-off to a point at or above the harness D-ring.
4. Rescue
 - A. Any time an employee uses fall protection, a means of prompt rescue must be provided.
 - B. Rescue plans must be addressed in the JSA process and communicated to all employees affected.



5. Training

- A. A training program will be provided for each employee who may be exposed to fall hazards. The program shall enable each employee to recognize the hazards of falling and shall train each employee in the procedures to minimize these hazards.

6. Responsibility

- A. Supervisor
- B. Worker

HAZARD IDENTIFICATION

Purpose

To establish a formal process to identify which are potential causes of harm, associate with the job/tasks, identify measures to eliminate the hazard or control an unacceptable hazard. Record results and implement control measures at the worksite. To ensure that residual risks are as low as reasonably practicable.

Definitions

<u>Low Risk</u>	Identified as 1-4 in the matrix. No further immediate action is required. Proceed with care.
<u>Medium-Low Risk</u>	Identified as 5-10 in the matrix. Hazard to be investigated to reduce risk further.
<u>Medium-High</u>	Identified as 12-15 in the matrix. Further measures shall be taken to reduce the risk with immediate management involvement.
<u>Unacceptable Risk</u>	Identified as 20-25 in the matrix. Task must not be undertaken. Immediate actions to eliminate hazard or substantially reduce risk by further/better controls must be taken.
<u>Highly Unlikely</u>	So inconceivable that occurrence may never occur in the project.
<u>Unlikely</u>	Improbable but just possible to occur during the project.
<u>Occasional</u>	May occur sometime during the project.
<u>Likely</u>	Probable and liable to occur more than once during the project.
<u>Highly Likely</u>	May occur frequently during the project

Procedure

1. Hazard assessment principals
 - A. Hazard assessments shall be performed prior to any work commencing by all project teams, department and units and on all worksites where hazards have been identified or potential hazards are thought to exist.
 - B. Hazard assessments should be kept short, simple and must be documented.
 - C. Personnel participating in the Hazard assessment should be identified in the record.
 - D. Hazard assessments must be conducted in a systematic fashion using the steps in part 5 of this section.

2. Timing of the HAZID

- A. The hazard assessment should be conducted in advance of the work activity to allow the control measures to be correctly implemented. (This may involve reviewing previous HAZIDs. JSA's for routine activities). Hazard assessments should be undertaken prior to:
1. Performing any non-routine activity.
 2. Performing a new task.
 3. When new people are involved.
 4. When third parties are involved.
 5. When major changes to the work/system are considered.

3. Levels of hazard assessments

- A. Three stages of hazard assessments are carried out during project execution.
1. Level 1 is conducted within an office setting, normally facilitated by project management and personnel who have ownership of safe project execution. It shall include person competent in conducting hazard assessments. The assessment should identify project/equipment design or engineering sufficiently in advance of the work to allow adequate lead-time to providing required equipment, people, and training/qualifications to effectively and safely accomplish the project or job. The target should be to ensure all aspects of the work have been assessed, hazards have been identified and control measures identified before going to the worksite, such that all risks are made as low as reasonably practical.
 2. Level 2 is normally carried out at the worksite by the personnel directly involved in the activities utilizing the documented results of the Level 1 assessments. It is primarily instigated to confirm full understanding of the work and the control measures being implemented, but may, in special circumstances be used to further assess details of the work.
 3. Level 3 is the JSA's and are performed with the following guidance:
 - a) Supervisors with personnel directly under the control and participating in a specific task or evolution.
 - b) Reference should be made to the previously recorded Level 1 and/or Level 2 HAZID document.
 - c) Use this process to ensure personnel fully understand the work, the control measures, and their responsibilities to complete the assigned tasks.
 - d) Serves as a final check that no unforeseen hazard exists.
 - e) Team members shall have an opportunity to ask questions about these issues.
 - f) Toolbox/JSA's shall be carried out as part of the shift change or as part of specific pre-job activity.
 - g) Assign behaviors required to prevent injury.

- h) Identify engineering controls to prevent injury or loss.
 - i) Address environmental issues.
 - j) Identify appropriate tools.
 - k) Identify SSE's and who mentors (document on the JSA)
 - l) List the name(s) of the SSE(s) and who the mentor(s) is/are.
 - m) Identify relevant job/tasks and plan together.
 - n) Identify relevant permits.
 - o) Names of participants listed on the form.
4. There is a degree of flexibility in how Level 2 and Level 3 assessments are carried out at the worksite, for example, they may be combined if all personnel attended the shift briefing. It is important that everyone that is involved in the job is fully aware of, and accepts the risks of, and accepts the control measures and that any issues are clarified prior to the commencement of work.
4. Detailed hazard assessment (HAZIDS)
- A. The hazard identification and hazard assessment procedure is comprised of six (6) key steps. The following section outlines the exact steps to follow when completing the hazard identification and hazard assessment record.
1. Step 1 - Task Identification
 - a) Identify the task. Record on hazard assessment form.
 - b) Does an existing hazard assessment fully match the scope of work?
 - (i) **If yes** – Proceed to Step 4. Re-quantify the hazard with appropriate controls
 - (ii) **If no** – Continue to C
 - c) Does an existing hazard assessment partially match this scope of work?
 - (i) **If yes** – Identify valid tasks and complete Hazard assessment form.
 - (ii) **If no** – continue to D
 2. Step 2: Hazard Identification
 - a) Develop a list of tasks. Record on hazard assessment form.
 - b) Identify hazards applicable to each tasks. Record on hazard assessment form.
 - c) Verify list – Does it address all hazards?
 - (i) **If yes** – Proceed to Step 3
 - (ii) **If no** – continue adding to hazard list.
 3. Step 3. Who/What might be harmed
 - a) Identify who/what might be harmed. Record on hazard assessment form.
 - b) Verify list – Does it address all hazards.
 - (i) **If yes** – Proceed to Step 4.
 - (ii) **If no** – continue adding to who/what list
 4. Step 4. Quantify the Hazard
 - a) Using data entered in the hazard assessment form during Steps 1-3, use the following guidelines and matrix to determine the risk factor. *Note: Record rates on form.*

Hazard/Risk Matrix

Likelihood of Occurrence	Hazard Severity				
	(1) Negligible injury or damage, no absence from work	(2) Minor injury requiring first aid	(3) Injury leading to lost time incident or significant damage	(4) Involving a single death or serious injury or damage	(5) Multiple deaths or catastrophic damage
1 – <u>Very Unlikely</u> A freak combination of factors would be required for an incident to occur →	1	2	3	4	5
2 – <u>Unlikely</u> A rare combination of factors would be required for an incident to occur →	2	4	6	8	10
3 – <u>Possible</u> Could happen when additional factors are present but otherwise unlikely →	3	6	9	12	15
4 – <u>Likely</u> Not certain to happen but with any additional factors may result in an incident →	4	8	12	16	20
5 – <u>Very Likely</u> Almost inevitable that an incident would result →	5	10	15	20	25

1-4	Task is most likely to proceed after completing Level 3 Risk Assessment (JSA) with group
5-10	Task should proceed with the appropriate management authorization and consultation with specialist assigned to the project or task. Management shall be part of the Level 3 Risk Assessment (JSA) to assist in further reducing the hazards.
12-15	Further mitigation of hazards must occur. Management shall become involved and apply the appropriate people, training, tools, and engineering before the work proceeds.
20-25	Tasks must not proceed and shall be redefined with further control measures put in place to reduce the hazards and risks. Management must authorize Hazard Identification and mitigation results and ensure the appropriate controls have been identified prior to proceeding with this task.

5. Step 5: Control Measures

- a) List control measures for each identified hazard (Risk Assessment form). Include controls as contingency for process failure(s).
- b) Compare control measures against standard criteria. Record conclusions in RA form.
- c) Implement task and monitor effectiveness of safety precautions. Add to HA form.
- d) Priority must be given to those risks, which affect large numbers of people and/or could result in serious harm. The principles below should be applied when taking further action (preferably in order).
 - (i) Remove the risk completely.
 - (ii) Evaluate alternative methods/equipment.
 - (iii) Organize work to reduce exposure to hazard.
 - (iv) Prevent access to the hazard (ex. by guarding).
 - (v) Issue PPE
 - (vi) Provide equipment/facilities (ex. washing facilities for removal of contamination.)

6. Step 6: Residual Risk/Hazards

- a) Re-quantify the risk (Step 4) with control measures in place.
- b) Are the residual risks acceptable?
 - (i) **If yes** – Compare control measures against standards. Record in RA form.
 - (ii) **If no** – Can further control measures be identified?

If yes – Return to step 6A **If no** – STOP - DO NOT PROCEED
- c) Verify the following:
 - (i) Have all contingencies been addressed?
 - (ii) Have all possible situations where a snag or failure could develop been covered?
 - (iii) Are contingency procedures established?

5. Reporting and follow up

- A. Upon completion of a Level 1 hazard assessment, a written report shall be issued. This report shall have the following contents:
 1. Introduction
 - a) Scope including outline of the work tasks
 - b) The method used
 2. Assessment Records
 - a) Location and date
 - b) Participants and team leader
 - c) Clear breakdown of activities

3. Recommendations
 - a) Corrective actions (including the responsible person and time limits)
 4. Other documentation as required to complete the investigation
 - a) The final report should be copied to the project or job file and to the safety department to be added to a working file of hazard assessments.
 - b) Level 2 hazard assessments simply require the completed Level 1 hazard assessment forms to be completed. These may be kept in the project or job file and onboard the ship or barges to compliment the catalogue of hazard assessments for future reference.
 - c) When doing a Level 3 toolbox/JSA, the complete form and the relevant permits need to be kept on record for the life of the project then include in the job paperwork. Note: The Level 3 records are to be turned in with the job paperwork. The meeting and attendees should be recorded in the daily job/status report and signatures as required.
- B. Follow up and close out
1. The person responsible for the production of the HAZIDs shall clearly identify who is responsible for corrective actions and will set a time limit.
 2. The time limit shall be scheduled sufficiently in advance of the work activities.
6. Training
- A. All employees will be trained in the level or levels of HAZIDs they will be directly affected by or may be responsible for completing, for example PICs will be trained in all Levels of HAZIDs, while lead tenders will be trained in Level 3.
7. Responsibility
- A. Project Managers
 - B. Supervisors
 - C. Persons In Charge
 - D. All employees in supervisory positions
8. Exhibits not included in this handbook
- A. Level 1 and 2 hazard assessments
 - B. Toolbox/Job Safety Analysis



INCIDENT AND INJURY INVESTIGATION

Purpose

To ensure investigation of incidents are conducted as soon as practical by the appropriate level of company management. Each investigation's objective will be the prevention of similar incidents and the preservation of facts, information and corrective measures concerning the investigation event.

Definitions

<u>Incident</u>	Occurrences or situations that involve an injury loss or could have caused loss.
<u>Investigation</u>	Fact finding process for reporting and determining gravity of an injury. Near hit or non-regulated spill or release.
<u>Near Hit</u>	An incident which with reasonable probabilities could have developed into an injury or loss to the company.
<u>Regulated Spill or Release</u>	A spill or discharge of any content or volume that requires verbal and/or written notification to a federal, state or local agency.
<u>Non-Regulation Spill Or Release</u>	A spill or discharge which requires completion of a company incident report but is not reportable to a federal, state or local agency.
<u>Incident Report</u>	The initial form completed to document an incident (ex. Property Loss Report, Spill/Release Report, Emergency Report, Reportable Event Report, Occupational Injury Report and Automobile incident report).
<u>Incident Investigation Report</u>	Report to be complete when conducting a formal investigation.
<u>Loss Time Incident</u>	Any work-related injury or illness which results in the affected party not being able to work their next regular scheduled work shift.
<u>Medical Treatment</u>	Any work-related injury or illness that requires treatment by a physician but does not result in work duty restrictions or lost work days. Does not include first aid treatment, even though provided by physician or registered professional.
<u>First Aid</u>	A work-related injury/illness that is minor in nature and can be treated at the worksite or by a physician in a single visit which do not ordinarily require medical care.
<u>Recordable Incident</u>	Any injury or illness that has been determined by the safety department to meet the OSHA guidelines requirement for recordable cases.
<u>Restricted Duty</u>	Any work-related injury or illness that results in an employee being restricted from performing any aspect of his/her job description.

Management The highest ranking manager of a division or BU, usually with reporting responsibility to the health, safety and environmental leadership team.

Media Event An incident of a magnitude or nature that could attract news coverage by print, radio or television media.

Procedure

1. Initial incident assessment
 - A. The PIC at the scene of an incident is responsible for the assessment of the severity of the incident and the general condition of the site.
 - B. If the incident is of a more serious nature, the following actions must be taken in order listed:
 1. Immediately cease the operation.
 2. Any injured person must be cared for immediately.
 3. The area should be inspected for unsafe conditions that could contribute to additional injuries or damages. Any unsafe conditions should be neutralized only if no one is exposed to any risks of injury in doing so. If unsafe conditions cannot be neutralized, the area must be barricade until the hazards can be safely eliminated.
 4. Depending upon seriousness of incident, initial notifications at the earliest possible moment.
 5. Any physical evidence of the incident must be preserved, as well as names and addresses of witnesses.
 - C. Once the initial assessment has been made, the PIC at the site shall remain on duty until relieved by a management.
2. Investigations
 - A. It must always be taken into consideration prior to commencing any investigation the potential severity and not simply the actual.
 - B. All incidents require some degree of investigation; this is done to provide a mechanism to continuously strive for improvement. The determination of investigation will be decided by management in conjunction with health, safety and environmental. Your involvement in this process is necessary to complete the investigation.
 - C. The incident report shall be completed by the persons noted below:
 1. All injuries – PIC
 2. Any near hit – Persons involved , company employee or witness



3. Non-regulated spill or release – Employee who discovers spill/release or first employee/supervisor notified.
 4. Any equipment damage, other than normal breakdown/wear and tear – equipment operator.
 - D. In any event, the likelihood of further questions is high. We ask you demonstrate the following behavior in order to appropriately address the incident, allowing the company the ability to prevent similar injury or loss.
 1. Be honest and factual.
 2. Be supportive and contribute to the purpose of investigations.
 3. Avoid accusations, state what happened.
 4. Provide solutions.
 - E. The incident report should be complete as soon as possible after the incident.
3. The Investigation Process
- A. General circumstances for investigations
 1. Property or equipment damage (other than normal wear and tear)
 2. Any spill or release
 3. Near hit
 4. All vehicle damage
 5. Explosions or fires
 6. Any injury
 7. Bomb threat or terrorist activity
 8. Natural disaster - (at the discretion of the management)
 - C. Incident Report
 1. The initial step in the formal investigation shall be to complete the incident report as soon as possible after the incident. Routing of the report shall be as set forth on the form. A copy of the incident report shall become part of the incident investigation report.
 - D. Upon receipt of the initial report the appropriate BU manager will determine the level of investigation required. An investigation team will be formed by the operations manager. Formal investigation team members and responsibilities:



1. BU Management - Responsible for conducting post investigation meeting with the investigation team as well as reporting the finding to the health, safety and environmental leadership team.
 2. Department/Operations Manager - Responsible for assembling the investigation team, monitoring the progress of the investigation, participating in the development of the final report and closing meeting.
 3. Project Manager - Responsible for leading the investigation team and will assume the title of team leader.
 4. Onsite Supervisor - Responsible for preserving the incident scene. Will assist in the investigation as a team member.
 5. Safety Department - Responsible for assisting the investigation team with interviews, field visits, report development and closeout meetings.
 6. Subject Matter Experts - Responsible for assisting with the investigation as directed by the BU Manager or above. This individual may be chosen for their expertise in a certain area.
 7. Legal Counsel - Responsible for review of the final report and counseling during the process.
4. Conducting the investigation
- A. The responsibility of the investigation team is to determine the obvious and/or underlying causes of the incident. This should be based on facts and logical conclusions it is not to assign blame or make any judgments. The formal investigation should be a thorough and conscientious examination of all information, which can be gathered concerning the incident and not merely a repetition of the employee's explanation of the incident. In most cases, the investigation will be in the form of a root cause analysis (ex. Taproot, Apollo, Five Why's, etc.)
 - B. All involved personnel (whether employed by company or not) should be interviewed individually and in person when possible. The interview shall be led by the team leader (or as designated by the team leader). The purpose of the investigation should be stressed to each person interviewed to accurately determine the circumstances surrounding the incident said to determine the prevention of recurrence. The team should meet on a schedule results of each component discovered shared with each team member.
 - C. Take complete notes of what each person says. Use only open questions. Repeat each response given to be sure that the information was clearly understood. Close the interview on a positive note.
 - D. After the interview of each witness, write an interview summary. Report what the person said using as many of the interviewed person's words as possible. Do not assume or conclude anything. This summary will become part of the incident investigation report. Any and all notes taken during the interview must be marked as *Interview Notes* and attached to the final report. Interview notes will not become part of the written incident investigation report. Do not make any personal copies of the *Interview Notes* or interview summaries.



- E. If practical, the investigation team should visit the incident site. In any case, at least one member of the team must visit the site. Locate, mark and securely store (when appropriate and feasible) any physical evidence, which may be lost, moved or destroyed at the incident site. The site should be photographed and/or videotaped. If a video camera is used, do not make editorial comments during the taping. Only describe the site and equipment as it is being taped.
 - F. Take photos or make drawings of the site, which might help someone reading the *Incident Investigation Report* to locate all equipment and personal at the time the incident occurred. Do not make guesses or assumptions.
 - G. Writing the formal *Incident Investigation Report*. After all witnesses have been interviewed, the site has been visited and all photographing and videotaping finished, the investigation team shall prepare a formal report using the *Incident Investigation Report*. Additional pages may be attached as needed. A copy of the incident report and all videotapes, photographs, sketches and witness statements must be included in the *Incident Investigation Report*. The team leader is responsible for ensuring the *Incident Investigation Report* is complete and accurate.
5. Post investigation review
- A. Depending on the level of investigation, a formal presentation of findings must be conducted and necessary lessons learned shared. Then requirements for the level of review should be conducted according to the standards set by ZARNAS COMPANIES.
 - B. The health, safety and environmental leadership team, whether at the BU level or the divisional shall either accept the investigation or require further investigating. The investigation shall remain open until the required level of management is satisfied the investigation has:
 - 1. Identified the root cause(s)
 - 2. Identified the appropriate preventative measures
 - C. At the completion of review, the report findings will be used to develop safety measures to prevent reoccurrence.
6. Request for information
- A. The company considers all notes, records, drawings, photographs, video tapes, reposts and physical evidence of every incident, incident report and incident investigation report to be confidential and privileged. No company employee shall discuss or reveal any information about an incident, investigation or any report generated as a result of the incident with any person who is not an employee or authorized representative of company. Any requests for information or for the identity of witnesses shall be immediately referred to the legal department.
 - 1. All requests for information from the media (newspaper, television and radio) shall be referred to the company legal department.

- 7. Responsibility
 - A. Division Management
 - B. BU Management

PERMIT TO WORK

Purpose

The objective of the Permit to Work (PTW) system is to ensure that due consideration is given to the hazards associated with a particular job/task and that the risks are minimized prior to the start of the work, by the implementation of appropriate control measures.

Definitions

Permit User The person(s) carrying out the work and who are under the control of the person in charge.

Person In Charge The person responsible for supervising the permit user and is accountable for completion of the work. They must be at the worksite at all times.

Designated Authorized Person The person who manages the worksite permit system and has the authority to issue a PTW (usually appointed by the job supervisor). The supervisor will be held accountable for compliance with PTW requirements.

Procedure

1. Permit To Work
 - A. The *Permit to Work* form authorizes personnel to carry out specific work within a certain time period and operational constraints. Additionally, it determines which controls are required to complete the job/task safely.
 - B. The PTW is valid:
 1. For a maximum 12 hours, after which time it must be revalidated.
 2. For a specific site.
 3. Until the scope of work changes.
 4. Until an unforeseen hazard arises (ex. weather, injury, etc.)
 - C. Typical tasks that shall be controlled by the PTW system are:
 1. Hot work welding, burning, grinding and dealing with explosives etc. (ex. all work that can lead to a spark)
 2. Breaking lines that may have potential to contain residual pressure or combustible liquids.
 3. Isolating electrical or mechanical machinery to permit maintenance or repair.
 4. Working at a height of 6 ft. or greater and not protected by guardrails.



5. Removing of safety systems (machinery guards etc.)
 6. Entering confined spaces or where atmosphere is suspect
 7. Underwater operations
 8. Personnel transfers
3. Other permits required
- A. The *Permit To Work System* is comprised of permits from other expectations (ex. Lockout/Tagout, Confined Space, Working at Heights). Other forms may be filled out in conjunction with the PTW system (ex. Hazard Identification Risk Assessments and HazCom logs, etc.)
 - B. Note: Persons working for the company may occasionally have to operate under a customer's PTW while working on their worksite.
4. Permit To Work Procedures
- A. The following steps show the procedure for filling out a PTW.
 1. The supervisor and person in charge initiates the PTW.
 2. Attach hazard identification, risk assessment and/or JSA.
 3. Ensure that the site is safe and suitable for the work being proposed.
 4. Ensure there is no conflict with other work being done.
 5. Review Lockout/Tagout Expectation, attach permit if required.
 6. Review Fire and Safe Work Expectation, attach permit if required.
 7. Review Working at Heights Expectation, attach permit if required.
 8. Review Confined Space Expectation, attach permit if required.
 9. Review all pertinent company standards, policies and procedures, rules and expectations.
 10. Ensure proper PPE is available (ex. fall protection, respiratory protection)
 11. Supervisor and designated individuals will sign all the required forms/permits.
 12. Display the permits with attachments in area as designated by the supervisor.
 13. The designated authorized person will communicate that work can commence.
 14. At the end of the job/task turn in a copy of all forms/paperwork with the job paperwork.



5. Training

- A. Training shall be conducted for everyone's job tasks in accordance with company policies and procedures to ensure everyone is adequately trained to do their job safely.

6. Responsibility

- A. Supervisor
- B. Person in Charge

MANAGEMENT OF CHANGE

Purpose

To establish a process which will provide a route to follow ensuring changes are identified and then managed safely and efficiently. To ensure these changes are reviewed at the appropriate level of authority prior to implementation and properly documented.

Definitions

<u>Change</u>	Any permanent or temporary modification to procedures, job scope, environmental conditions, personnel, facilities or any deviation outside the documented safe operating limits or procedures.
<u>Risk</u>	The likelihood that a specified hazard will be realized as a function of the probability of its occurrence and severity of the consequences.
<u>Site Instruction</u>	Within the context of this procedure, any instruction from a customer to change or deviate from the planned work. Such instructions must always be obtained in writing and may include, without limitation, site query forms, deviation requests or any other form of variation request.
<u>Replacement in Kind</u>	Any replacement, repair or part that satisfies all the original operational design specification.
<u>Site Supervisor</u>	The senior most site manager responsible for the onsite implementation of an approved change.

Procedure

1. General
 - A. Managing change means managing risks and the risk assessment is the primary tool to be utilized in managing the risks arising from changes.
 - B. Managers and supervisors are responsible for ensuring that suitable HAZIDs are carried out when managing changes within their area of responsibility. The goal of risk assessment is to bring together the key personnel who have the right competencies and relevant experience for the purpose of discussing, collecting and assessing concerns, ideas, and operational inputs which will reduce risks and ensure that safe and effective execution of the change(s) or tasks under consideration.
 - C. The PIC along with the operations manager shall, if within their range of competence and/or authority, carry out an assessment of both the change and the associated risk to allocate correct categorization. As a minimum, they shall discuss the change proposed and agree to the preliminary assessment of the risk (low, medium or high). The PIC is responsible for defining the change (ex. what is the change and what are the reasons for it) along with input from any additional personnel or departments as appropriate.

2. Identify the Need for Change

- A. It is impossible to precisely define all of the change variables in company activities which may give rise to risk. The purpose of this section is to set out the philosophy and key elements of the process of managing change for knowledge and understanding.
- B. A need for change can result from a variety of situations and it is not within the scope of this standard to identify them all. A non-exhaustive list is given below.
 - 1. Deviation from approved construction procedures.
 - 2. Deviation from standard procedures, (ex. OSHA, BSEE, HSE Mgt. System, etc.)
 - 3. Unplanned modifications to equipment.
 - 4. Changes to sequence of operations.
 - 5. Deviation from specified safe working practices.
 - 6. Using an existing piece of equipment for a new task.
 - 7. Change instigated and/or requested by customer (Site Query Variation Request, Field Change Order, etc.)
- C. When a change has been identified, before any risk assessment is carried out, the intent shall be communicated to your immediate supervisor.

3. Levels of change

- A. It is the responsibility of the PIC in conjunction with all other relevant PIC's, where SIMOP's apply, where it impacts the job or affects personnel, to assess the level of change in conjunction with the project manager.
- B. Refer to Hazard Identification and Risk Assessment in this handbook to determine the level of risk associated with a particular change as well as the criticalness of the change.

Low Risk	Minor Change	Changes are within the scope of normal operations and are covered by basic operating procedures or JSA/JSEA's, standards, policies and generic HAZID's. Work tasks are well within the capacity and competence of the people at the site. Minor changes shall require approval of immediate supervisor and do not require completion of the Management of Change form.
Medium Risk	Major Change	Changes deviate from the scope of work or standards, procedures and assessments. The assessment of the work task is deemed to be within the capability of people and equipment at the site. Major changes require an approved Management of Change form.
High Risk	Critical Change	The changes require further assessment by project management. Critical changes require an approved Management of Change form.

C. Specific Critical Tasks

1. Regardless of the risk assessment outcome, the following criteria will always be treated as critical changes requiring a MOC form and senior management approvals prior to proceeding:
 - a) The change could affect the technical integrity of third party products (ex. An interface issue, in which case it must be formally approved by the relevant third party supplier.
 - b) Structural modification to installation aids which involve significant changes in loading, functionality or intended use.
 - c) Alterations to approved commissioning isolation and test procedures for pressure retaining systems (ex. manifolds, trees, pipelines, flowlines etc.)
 - d) Impact to statutory or code compliance.

4. Approval of change
 - A. All individuals so designated must approve the change prior to any work going forward. This may include approving job procedures, HAZIDs and/or the Management of Change form. Consult your supervisor for further information about specific approvals.
 - B. Changes are to be authorized in accordance with the company's policies and procedures as identified in the company health, safety and environmental manual.

5. Managing the change process
 - A. The effective MOC can range from a risk assessment and JSA at the worksite to a complex process of detailed planning, technical assessment, consultation, review and approval, including senior management.
 - B. However, while it is impractical to define all change variables precisely, it is essential all associated and relevant operations that are directly impacted by any change are made safe and do not start or continue until the details of this procedure have been enacted.
 - C. The level of effort required to successfully manage a change will depend on the level of risk and complexity. However involved the process becomes, the basic steps of change management remain the same.
 - D. Recognizing the change also means recognizing risk. Risks can arise directly from a change or indirectly through a more complex change of cause and effect. In some cases, small changes can give rise to high levels of risk.

6. Training
 - A. All employees must be trained in the MOC expectation.

7. Responsibility
 - A. All employees



HEAT ILLNESS PREVENTION

Purpose

To establish the appropriate guidelines and precautions to prevent the manifestation of heat-related illness or injury.

Definitions

Risk Factors for Heat Illness

Factors such as age, acclimatization, physical condition, hydration factor and use of medications that affect the body's water retention or other physiological responses to heat.

Environmental Risk Factors

Working conditions create the possibility that heat illness could occur. Air temperature, humidity, type of work, heat from the sun contributes to the factor.

Heat Stroke

Occurs when the body fails to regulate temperature causing body temperature to rise to life threatening levels. This condition is a medical emergency. Signs and symptoms include confusion; irrational behavior; loss of consciousness; convulsions; a lack of sweating (usually); hot, dry skin; and an abnormally high body temperature. Treat as a medical emergency, move victim to a cool place and begin cooling measures.

Heat Exhaustion

The signs and symptoms of heat exhaustion are headache, nausea, vertigo, weakness, thirst and giddiness. If a worker is experiencing any of the signs and or symptoms of heat exhaustion, immediately get the worker to a shaded or cooler area, and make an effort to cool the employee down. Allow the victim to drink cool water starting with small amounts. The employee should follow up with a medical consultation as soon as possible.

Heat Cramps

Usually caused by performing hard, physical labor in a hot environment. These cramps have been attributed to dehydration and sometimes certain salts and or mineral loss. Most cramping is caused by the lack of water replenishment.

Heat Rash

The most common problem in hot environments. *Prickly heat* (AKA) manifest as red bumps appearing in areas where the clothing is restrictive. The arm pits, inside the elbows, groin and behind the knees are areas commonly prone to this problem.

Dehydration

An excessive loss of the body's water

Procedures

1. The Hydration Factor

- A. The primary method of eliminating heat related illness is prevention. To prevent heat related disorders, hydration is the number one factor in staying healthy and safe while working in hot environments.
- B. An average person can lose up to a quart of sweat per hour while working in the heat.
- C. Urine color is an easy way to monitor hydration status.
- D. In most cases, darker urine means that an individual is dehydrated and that water consumption needs to be increased.
- E. Energy drinks are not hydration sources and should not be consumed while working.
- F. Coffee and tea should be avoided as these beverages provide little or no hydration value.
- G. Note for females: Urine in the toilet bowl will be diluted, so please allow for this consideration.
- H. It is important to note that heat related injuries kill 500 people per year. We must follow the above simple guidelines and prevent this from occurring to any of our employees.

2. Important guidelines to avoid heat illness or Injury

- A. To minimize the risk of heat injury, the following key factors should be considered:
 - 1. Do not wait until you are thirsty to drink.
 - 2. Do drink 8 ounces of water every 15-20 minutes.
 - 3. Do maintain a 4:1 water to sports drink ratio.
 - 4. Do eat regularly to ensure adequate levels of blood salts.
 - 5. Do rest well before and in-between strenuous exercises or work.
 - 6. Do loosen your clothing while resting.
 - 7. Do report sick if you are not feeling well before, during or after strenuous work or exercise.

3. Provision of water

- A. Water shall be provided in a manner that is immediately accessible to the work station.
- B. Water stations shall be of adequate number for the crew size to provide at least one quart per employee per hour for drinking for the duration of the shift.



- C. Supervisor/designated person will monitor water containers and employees are encouraged to report to the supervisor/designated person low levels.
 - D. Water containers should be cleaned daily.
 - E. It is preferred to have ice mixed with water to increase the cooling affect.
 - F. Supervisors will provide frequent reminders to employees to drink.
 - G. Adequate signage and posters will be placed in conspicuous areas to remind employees of heat related disorders.
4. Breaks
- A. Supervisors shall allow for periodic breaks to give employees the opportunity to cool off.
 - B. The frequency of breaks may be required to increase as temperature and humidity rises.
 - C. If possible, large commercial fans may be placed in a work area and in the shaded break areas.
5. Training
- A. All affected employees will be trained in this expectation.

GENERAL SAFETY

Chemical Safety

When chemicals contact the eye, promptly flush eyes with clean, fresh water for a prolonged period (minimum 15 minutes) and seek medical attention.

In case of skin contact promptly flush the affected area with water (minimum of 15 minutes), remove contaminated clothing and seek medical attention.

Do not smell or taste chemicals; do not eat, drink, smoke, chew gum or apply cosmetics when in direct contact with chemicals. Wash hands before and after conducting these activities. (Refer to Hazard Communication).

Chemicals and equipment shall be properly labeled and stored. No industrial containers shall be accepted without proper labeling and a SDS. A SDS for each chemical stored on a company property shall be readily available. (Refer to Hazard Communication).

Ensure that all persons, including visitors, wear the required PPE such as eye protection, gloves and apron as needed where chemicals are stored or handled. (Refer to PPE and Hazard Communication).

Use appropriate respiratory protection when air contaminant concentrations are not sufficiently restricted by engineering controls. (Refer to Respiratory Protection).

Indoor storage of flammable and combustible materials shall be in approved metal cabinets. (Refer to Hazard Communication).

Chemical disposal shall be performed as outlined in the chemicals SDS and company policy. See your supervisor for details on specific chemicals.

All chemical spills shall be reported to the immediate supervisor and to the safety department in accordance with the reporting guidelines in this handbook and the company's *Health, Safety and Environmental Manual*. Technical assistance for cleanup should be obtained as needed.

Chemical storage should be minimized. Storage on bench tops or at high levels is not recommended. Stored chemicals shall be examined periodically for container integrity. (Refer to Hazard Communication).

Compressed Gas Cylinders

The industrial gases referred to below can be divided into three categories:

Combustible	Non-Combustible	Oxidant
Acetylene	Nitrogen/Helium	Oxygen



The color-coding systems for gas cylinders are as follows:

Media/Gas	American System/Color	International System (AODC/IMCA) Color
Oxygen	Green	White
Acetylene	Black	White
Nitrogen		Grey W/Black Neck
Helium	Grey w/Buff Neck	Brown
Mixed Gas Heliox		Brown/White
Air		Black/White
Argon		Dark Blue

In addition to color coding, the name of the product, its chemical formula or symbol and its hazardous properties should be visible on the cylinder. (Refer to Hazard Communication).

Handling Cylinders

Serious accidents may result from the misuse, abuse or mishandling of compressed gas cylinders under pressure. Workers assigned the handling of cylinders under pressure should be properly trained. Handle cylinders of compressed gases as high energy sources and therefore potential explosives. Observance of the following rules will help control hazards in the handling of compressed gas cylinders:

- Accept only cylinders approved for use in interstate commerce for transportation of compressed gases.
- Always wear proper personal protective equipment (PPE).
- Transporting cylinders on wheeled cylinder carts with retaining straps or chains when applicable is the best practice.
- Cylinders should be secured in a boot or by chain to a fixed support to prevent them from falling over or being dropped.
- Do not remove or change numbers or marks stamped on cylinders.
- Cylinders should not be banged, dropped or permitted to strike each other or against other hard surfaces.
- Never use compressed gas to dust off clothing. This could cause injury to the eyes or body and create a fire hazard. Clothing can become saturated and burst into flames if touched by an ignition source such as a spark or cigarette.
- Do not use the valve cover to lift cylinders. They could be damaged and become unattached causing the cylinder to drop on a hard surface.
- Always perform a JSA to identify the appropriate and safest method to move or handle compressed gas cylinders.

Crane Operations

Only the following personnel shall operate cranes:

- Qualified crane operators
- Trainees under the direct supervision of a qualified operator
- Crane maintenance personnel and inspectors, when necessary, in the performance of their duties



All persons on site during crane operations shall be instructed in the work to be performed.

A qualified signal person shall be designated. Industry standard hand signals shall be used.

Tag lines shall be used on all lifts.

Slings, fittings and shackles shall be inspected before use.

Crane loads are not to be lifted or swung overhead of personnel or ships below.

A load-rating chart will be located near the crane controls.

Weights of all cargo for load line lifts shall be known prior to making a lift.

Cranes will be inspected daily by the operator and any defects will be reported and repaired before the crane may be operated. The operator performing the daily inspection shall ensure the crane is safe to operate.

Rigging Practices

Use accepted techniques for rigging.

All rigging must have a verifiable certification document present at the site.

Avoid sharp bends in the slings. Protect slings from sharp edges and abrasions.

Set loads on proper blocking, never directly on sling.

Do not side load.

Maintain an angle between the sling and the horizontal greater than forty-five (45) to reduce stress on slings.

Do not stand or walk under suspended loads.

Do not leave loads unattended at any time.

Tag lines without knots shall be used on all lifts.

Tag lines shall not be wrapped around body parts.

Rig off a load bearing structural member. Rigging from process piping/handrails is forbidden.

Shackles and other connecting devices shall be completely closed/bolted.



Electrical Safety

Only qualified and trained personnel should repair or install electrical equipment or work around live electrical circuits.

Consider all electrical conductors energized.

Employees authorized to work on electrical circuits should be trained in CPR and first aid.

De-energize all circuits before beginning work to prevent electrical circuits from being inadvertently energized. (Refer to Lockout/Tagout).

Use suitable protective equipment.

Personnel shall not wear rings, watches or other similar metallic objects while working on energized circuits.

Do not render electrical safety switches inoperable by removal, modification or destruction.

Blown fuses shall be replaced only with the proper type and rating.

Use non-conducting ladders when working on or near electrical equipment or conductors. The use of metal ladders is prohibited.

Never use defective electrical equipment or extension cords. Report all defective equipment to your supervisor.

All power lines should be considered energized unless proper measures have been taken for de-energizing. When work is being performed near energized overhead power lines, any part of the crane boom, mast, gin poles or machinery should not be permitted within 20 feet of power lines.

Fire Protection

In case of fire, the following procedure should be used:

- Summon help
- Do not fight a fire before alerting someone else.
- Analyze the situation, considering:
 - Is there a threat to life?
 - Is there damage to public property?
 - Is evacuating or extinguishing the fire possible?
 - Is notification and assistance from outside authorities appropriate?
 - Are hazardous or toxic chemicals present?

Isolate all fuel sources and/or threatened facilities.

Fighting a fire in the initial stages is considered incipient firefighting.



Do not fight fires beyond incipient stage unless trained and equipped to do so as part of a fire brigade or emergency response team.

Locate the firefighting equipment and approach the fire from the upwind side.

After fire is extinguished, stand by to ensure no flashbacks.

Assess the damage and complete the necessary documentation. Do not discuss the fire with anyone other than your supervisor or local safety representative.

Prevention is the best fire protection measure.

Buildings where solvents or chemicals are handled must be kept in a well-ventilated and adequately designed flammable materials locker.

Repair all hydrocarbon liquid or fuel leaks immediately. If immediate repairs are not possible, post an adequate warning sign to isolate the area and take extra precautions against fire.

In the event of a hydrocarbon liquid or fuel leak, remove sources of ignition, such as pilot lights. Report leaks promptly to the supervisor in charge. Shut off fuel supply or process if possible.

Use soapsuds when testing for gas leaks on connections. Never use an open flame.

Use gasoline as a motor fuel only. Using gasoline as a cleaning agent on company property is strictly forbidden. Consult your supervisor for the appropriate safety solvent.

Transport gasoline only in approved, clearly marked containers. Never place gasoline containers inside car or truck passenger compartments.

Properly maintain flame arrestors and keep inspection port covers in place.

When transferring hydrocarbons from a line or vessel to another container, the source container and the receiving container should be electrically bonded and ground to prevent ignition.

Fire extinguishers are an important segment of any fire protection program. Fire extinguishers should be:

- Accessible
- Properly maintained
- Inspected monthly by trained personnel and documented.

The supervisor is responsible for ensuring that all extinguishers are properly maintained and inspected.



Welding and Burning

Before striking an arc or lighting a torch, (Refer to Fire and Safe Work). All hot work outside of designated hot work areas requires a hot work permit.

Keep welding leads and burning hoses clear of passageways.

Inspect all leads, ground clamps, welding machines, hose gauges and cylinders each day before use.

Be sure all fittings and couplings are tight.

If bottles are to move they must be moved in accordance with the directives in this handbook. Bottles will be stored in a secured, upright position with valve stems protected.

Inline check valves are to be installed in the oxygen and acetylene hoses between the bottle regulator and the torch or heating device head.

Avoid breathing fumes. Use exhaust systems or blower fans to remove fumes in confined spaces. Use a respirator when necessary. (Refer to Respiratory Protection).

No welding or burning is to be done on a closed vessel or tank unless it has been documented and is gas free. (Refer to Fire and Safe Work).

Each welder/burner is responsible for containing spark and slag and removing combustible materials from the work area. They shall keep hoses and leads clear of sparks and hot slag to the greatest extent possible.

Ground leads should be grounded as close to the worksite as possible, but normally no more than 15 feet from the worksite.

An appropriate fire extinguisher must be within 15 feet of the worksite.

A fire watch will be assigned to any welding or cutting operation performed outside the designated safe welding/burning area. A fire watch shall be assigned no other duties while hot work is being conducted.

If burning or welding is being performed on a bulkhead or deck, then a second fire watch must be assigned to watch the space opposite (inside wall) the side that burning/welding is being done.

A fire watch must not leave the hot worksite without being properly replaced. The fire watch will remain at the hot worksite for at least 30 minutes after the hot work has been completed.

First Aid equipment shall be available at all times while welding and burning.



Forklift Operations

The operator shall be responsible for inspecting the forklift before beginning operation. The inspection as a minimum should include:

- Only trained, qualified and authorized individuals shall operate a forklift
- All fluid levels
- Brakes and hydraulics
- Lights and warning devices

If any deficiencies are identified, report them to you supervisor and do not use the forklift.

Only handle loads that are within the rated capacity of the forklift being used.

Never allow passengers to ride on the forklift.

Always use personal restraint belts.

Carry all loads as low as possible; the forks should be 6 to 12 inches off the ground.

When a load blocks the operator's view, the forklift may be operated in reverse. A signal man can also be used when the load impairs the operator's view.

Do not use the forks to lift personnel without an approved platform.

When left unattended the forklift should be turned off, the forks lowered to the ground and the brake set.

The safe working load (SWL) should be clearly marked in a conspicuous way on the forklift.

Hoses and Air Guns

Workers should take the following precautions with air hoses and air guns:

- Make sure the nozzle pressure does not exceed 30 psi.
- Make sure recommended working pressure is not exceeded. Ideal pressure will vary with equipment.
- Never use oxygen, nitrogen, natural gas or other compressed gases in lieu of compressed air.
- Never use an air gun or compressed air to clean yourself or your clothing.

Ladders

The structure of fixed, portable and job-made ladders must conform to governmental standards or occupational safety.

When accessing an upper level, extend the ladders at least three (3) ft. above the surface.

Keep ladders free of oil, grease and other hazards.

Do not load a ladder above its intended weight capacity.



Use ladders only for their intended purpose.

Keep areas at the top and bottom of ladder clean and clear.

Never move, shift or extend the ladder when someone is on it.

Never use defective ladders. If faulty ladders are discovered, remove them from service and tag them *DANGEROUS - DO NOT USE*. They should be destroyed as soon as possible.

Always face the ladder when ascending or descending.

When climbing a ladder, never carry an object that may interfere with balance.

Ladders should always have non-skid feet.

Tools

Use the right tool for the job.

Return all tools to their storage place when not in use.

Defective tools should be destroyed and thrown away.

Never use a cold chisel with a mushroomed head.

Keep tools clean. Remove any oils or grease from storing.

Never carry a tool by its cord.

Never yank the cord to unplug the tool.

Keep cords away from heat, liquids and sharp objects.

Unplug tools after use and when servicing or replacing parts.

Keep both hands free to hold the tool.

Remove defective tools from the work or storage area and tag *DO NOT USE*. (Refer to Lockout/Tagout).

Wear appropriate PPE (Refer to PPE).

Never remove a ground plug from a power cord plug or use an adapter to nullify the grounding circuit.

Never use a power tool in an area with flammable/combustible without a current Hot Work Permit (Refer to Permit to Work).



Wire Wheel and Grinding

Workers should take extra precautions when working with grinders and wire wheels.

All people in the immediate work area must wear eye protection.

Wear eye/face protection and additional PPE as necessary. (Refer to PPE).

Move combustible materials away from sparks.

Securely clamp the work rest and tongue guard so that they are no more than $\frac{1}{16}$ th inch respectively, from wheel.

Make sure the wheel, shaft hole and motor speeds are all compatible.

Reporting For Duty

All personnel must maintain a high expectation of personal hygiene. This will include good grooming, clean clothes or uniform. The following is not permitted even for transportation to and from the jobsite.

- No open toe shoes.
- No shorts.
- No sleeveless shirts or tank tops.

The following is required when reporting to work:

- Health and physical examinations must be up to date (within the past 12 months).
- Drug and alcohol test must be up to date (within the past 12 months).
- Not be suffering from a communicable disease.
- Not be under the influence of alcohol or non-prescribed drugs.
- Not suffer from any condition impairing your judgment or ability to carry out your normal duties.
- Certifications and other documents related to your occupation must be valid and current.

The following non-controlled items are not allowed on a company property or worksite:

- Alcohol/non-prescribed or illegal drugs
- Explosives, firearms and highly flammable articles
- Poisons
- Radioactive substances
- Other dangerous articles

Transportation

Items identified in this section apply to the operation of all transportation equipment, including vehicles, aircraft and vessels that are leased, rented or owned by the company.

The operator (pilot, captain or driver) of the transportation has complete control and authority over the operation of his/her vehicle. The operator must be appropriately licensed and authorized to operate the equipment, and is responsible for the operation of the equipment and passengers at all times, loading of personnel and materials and weight distribution of the load.



Posted speed limits will not be exceeded. At times driving at maximum posted speed limits can be too fast for safety in some situations. The driver of a company vehicle should use good judgment and proceed at a speed suitable for the conditions of the vehicle, road, weather conditions and traffic flow.

Personnel must not get out of a vehicle when it is in motion.

Do not drive a vehicle with a door open or other compartment unsecured.

All operators and passengers must use seat belts and shoulder harnesses if the vehicle is so equipped.

Vehicles should be properly parked. When possible, they should be parked so that no backing is required when leaving, unless doing so causes a greater hazard.

When riding in transportation operated by a chauffeur (ex. vans, buses, etc.) the driver has total authority with regard to smoking and eating in the vehicle. Drinking alcoholic beverages is prohibited.

Trailers being pulled must have safety chains of sufficient capacity and size to hold the trailer loads in the event the coupling mechanism fails.

Smoking is prohibited near a vehicle being re-fueled.

A vehicle collision must be reported any time a vehicle is damaged.



EMPLOYEE ACKNOWLEDGEMENT FORM

The *Employee Health, Safety and Environmental Plus Operations Handbook* describes important information about ZARNAS COMPANIES and I understand that I should consult the Operations Manager or my supervisor regarding any questions not answered in this handbook.

Since the policies and procedures described here are subject to change, I acknowledge that revisions to the *Employee Health, Safety and Environmental Plus Operations Handbook* or any addendums may occur. All such changes will be communicated through official notices and I understand that revised information may supersede, modify or eliminate existing policies. Only the Vice President of ZARNAS COMPANIES has the ability adopt any revisions to the policies.

I have received a copy of the *Employee Health, Safety and Environmental Plus Operations Handbook* or have been given an opportunity to view it. I understand that it is my responsibility to read and comply with the policies contained therein and any revisions made.

Upon leaving ZARNAS COMPANIES, the safety department will expect the handbook to be returned, with last paycheck withheld until these documents belonging to ZARNAS COMPANIES are returned.

Employee Name (printed)

Employee Signature

Date