

**CDI**

**Environmental Safety & Health  
Management Policy**

# Table of Contents

|      |  |
|------|--|
| 1.0  | POLICY STATEMENT -----                 |
| 2.0  | DEFINITIONS -----                      |
| 3.0  | GENERAL REQUIREMENTS -----             |
| 4.0  | CDI's PLAN -----                       |
| 5.0  | MOTOR VEHICLE SAFETY POLICY -----      |
| 6.0  | ALCOHOL AND DRUG POLICY -----          |
| 7.0  | PIPELINE ACCIDENTS AND INCIDENTS ----- |
| 8.0  | HAZARDOUS MATERIAL -----               |
| 9.0  | PERSONAL PROTECTIVE EQUIPMENT -----    |
| 10.0 | FALL PROTECTION -----                  |
| 11.0 | RESCUE -----                           |
| 12.0 | FIRE -----                             |
| 13.0 | BLOODBORNE PATHOGENS -----             |
| 14.0 | LOCKOUT/TAGOUT -----                   |
| 15.0 | CONFINED SPACE -----                   |
| 16.0 | REQUIRED TRAINING -----                |
|      | REFERENCES -----                       |
|      | APPENDIX A TABLE 1 -----               |

# Safety And Health Management Policy

## **1.0 POLICY STATEMENT**

The purpose of this policy is to establish Health, Safety, Security, and Environmental (HSSE) systems and procedures for everyone who plays a part in Control Devices, Inc. (CDI) operations, lives in the communities in which CDI operate or use CDI's products. Wherever CDI operates, the business will be conducted with respect and care for both the local and global environment and systematically manage risks. CDI will not be satisfied until injuries, occupational illnesses, unsafe practices and incidences of environmental harm are eliminated from its activities.

## **2.0 DEFINITIONS**

As used in this policy:

*Accident* means an incident reportable under 49 CFR Part 191, involving gas pipeline facilities or LNG facilities, or an accident reportable under 49 CFR Part 195, involving hazardous liquid or carbon dioxide pipeline facilities.

*Company Project Site* is real estate not owned or leased by Company where a contract stipulates that work performed is under the backing of this policy.

*Site/On-Site* is the Company site or Company Project Site

*Supplier* is any firm that provides people, material, service or equipment to the Company.

*Contractor* is a Supplier that provides services to the Company.

*Vendor* is a Supplier that provides tangible material or equipment. The Company defines any Vendor that provides On-Site services other than delivery as a Contractor.

*On-Site Supplier/Contractor* is any Supplier/Contractor that is required to have PPE while engaged in work On-Site.

*Off-Site Supplier/Contractor* is any Supplier that provides Company with people, materials, service or equipment that is not an On-Site Supplier/Contractor.

*Consultant* is a Contractor that provides 'hands off – no physical work on Site' administrative or technical support to the Company.

*Accompanied Contractor* is a Contractor that works On-Site accompanied by Company Responsible Party.

*Company Responsible Party* is the individual with delegated authority to act on behalf of the Company.

*Sub-Contractor* is a firm that performs work for a contractor On-Site.

*High Impact Contractor* is a Contractor whose risk level based on service line and historical work performed creates a relatively higher HSSE and/or business risk to the Company.

## **2.01 Abbreviations**

ANSI-American National Standard Institute  
CFR-Code of Federal Regulations  
DMV-Department of Motor Vehicles  
HazCom-Hazardous Communication  
HAZWOPER- Hazardous Waste Operations and Emergency Response  
HCS-Hazard Communication Standard  
HSSE-Health, Safety, Security, and Environment  
LO/TO-Lockout/Tag Out  
SDS-Safety Data Sheets  
OSHA-Occupational Safety and Health Act  
PPE-Personal Protective Equipment

## **3.0 GENERAL REQUIREMENTS**

Health Safety Security Environmental (HSSE) Requirements include all applicable federal, state/provincial, maritime and local statutes, regulations, enforceable agreements, agency orders, permits, and contract documents. In addition, HSSE Requirements include specific company requirements.

Company may require participation in performance reviews and verification assessments. Company may further require development of applicable HSSE management system bridging documents.

Contractors are accountable to ensure that their sub-contractors comply with HSSE Requirements when Sub-Contractors are On-Site. Sub-Contractor incidents will be attributed to Contractor's total recordable incident rate (TRIR).

## **4.0 CDI's PLAN**

*Control Devices, Inc.* (CDI) conducts worldwide business, with a commitment to the safety of people and the environment. Excellence in vital to the success of our CDI employee.

To meet commitment, CDI

- Conduct business in such regulations and environmental laws, and improve the safety and environment, and the
- Provide leadership, and other resources HSSE excellence and to their responsibilities.
- Manage all projects, products, and processes through their life-cycles in a way that protects safety and health and minimizes impact on the environment.
- Maintain a secure work environment to protect ourselves, our contractors and the company's assets from risks of injury, property loss, or damage resulting from hostile acts.



safety and environmental performance is business and is the responsibility of every

will:

a manner as to comply with relevant requirements, all applicable safety and apply responsible standards that health of people, protect the general public. professional staff, training, support, necessary for the implementation of ensure each individual's knowledge of

- Strive to continuously improve and enhance safety and environmental performance, through appropriate means and programs, to reach our goals of: *no accidents, no harm to people and no damage to the environment.*
- Communicate commitment of this policy to employees, contractors, and governments worldwide and seek their support.

#### **4.01 CDI Expectations**

Employees are an employer's most valuable assets. Workplace driver safety programs not only make good business sense but are a good employee relations tool, demonstrating that employers care about their employees. Through implementation of this policy, CDI's objectives are zero lost man hours.

### **5.0 MOTOR VEHICLE SAFETY POLICY**

CDI strongly supports driver safety and recognizes the need to prevent work-related roadway crashes. Teaching and enforcing safe driving behaviors can help protect employees and the employer. As part of the comprehensive driver safety policy, CDI:

- Requires an appropriate, valid driver's license for the vehicle operated.
- Requires the employee and everyone in the vehicle to wear their seatbelt at all times.
- Requires drivers to take adequate rest breaks to ensure the safe operation of motor vehicles.
- Will check DMV records before an employee is allowed to drive a company vehicle and periodically thereafter. Requires drivers to follow speed limits and other state traffic laws.
- Will provide required training for the operation of any specialized motor vehicles or equipment.
- Will place new employees on a graduated driving schedule in accordance with their experience to ensure driving experience to the level required for the job.
- Disallows the use of cell phones while driving.
- Disallows other activities such as drinking, eating, or adjusting non-critical controls while driving.
- Requires employees to ensure the vehicle is in good mechanical order. If the vehicle is found not to be in good working order, then it is to be reported to the supervisor immediately.
- Requires employees to ensure loads are secured properly for hauling or towing.
- Requires employees to assess the risk of the journey before driving, such as how long is the journey, weather conditions, work time frame, etc.

#### **5.01 Accidents**

If a CDI employee is involved in an accident, contact Jason, Eric, or Verne Farque' at the numbers listed on the back. In most states it is the law that when there is a vehicle accident, drivers immediately stop at the scene, render aid and exchange information. The information that CDI requires include: the date and time of the accident, the other person's vehicle information such as year, make and model of the vehicle, the person driving the vehicle information including name, address, phone numbers, and insurance company. Record the damage sustained to CDI's vehicle and to the other person's vehicle. Take pictures if possible; remember some cell phones can take pictures. Record what happened, including directions vehicles were going and approximate speeds. If there were witnesses, get their information as well. See Accident Report Form. As a courtesy, remove debris from the roadway before leaving the accident scene.

### **6.0 ALCOHOL AND DRUG POLICY**

CDI is a drug-free workplace and as part of CDI's safety program, we adhere to a strict anti-alcohol and drug program. The purpose of this policy is to ensure the safety of all employees and to promote productivity. This policy applies to all employees, contractors, and temporary workers. Substances covered under this policy include alcohol, illegal drugs, inhalants, as well as prescription and over-the-counter drugs. We use random testing for drugs and alcohol as part of this program. The use of drugs and alcohol contribute greatly to the

number of accidents and injuries on the job. CDI maintains and follows a written anti-drug plan that conforms to 49 Code of Federal Regulations (CFR) 199 Subpart B and to the Department of Transportation procedures. As part of this policy, CDI reserves the right to inspect our premises and vehicles for these substances.

***CDI reserves the right to conduct alcohol and drug tests at any time.*** CDI may terminate employment if this policy is violated, ***test is refused***, or false information is provided. 49 CFR Part 40.85 is the regulation that requires testing for the following classes of substances:

- Marijuana (grass, pot, weed, hash, joint, Acapulco gold)
- Cocaine (coke, crack, snow, blow, flake, "C", rock, base)
- Opiates - opium and codeine derivatives - (heroin, horse, "H", junk, smack, scag, Miss Emma)
- Amphetamines - amphetamines and methamphetamines - (uppers, speed, bennies, black beauties, Christmas trees, crystal, mollies, crank, BAM, dexies)
- Phencyclidine - PCP - (angel dust, peace pill, hog, supergrass, embalming fluid, rocket fuel, killer weed)

### **6.01 Company Rules**

All employees must follow these rules while on company premises and while conducting company business. The rules apply any place where company business is conducted, including a company vehicle or an employee's own vehicle:

- Use of a prescription drug is allowed only if a licensed health care provider prescribed it within the last year.
- Dosage limits and usage cautions along with directions must be followed.
- Drugs must be kept in their original containers.
- While taking prescriptions or over-the-counter drugs that impair the ability to work safely; do not use machinery ***this includes vehicles***.
- Employees must cooperate with any investigation into substance abuse. *An investigation may include tests to detect the use of alcohol, drugs, or inhalants.*
- *Testing may include urine, blood, or breathalyzer tests. Before testing, the opportunity to explain the use of any drugs will be offered. Test results are kept confidential.*

The company may consult with a doctor to determine if a prescription or over-the-counter drug may create a risk. The company may change work duties or impose restrictions from working while use of a prescription or over-the-counter drug is in use.

### **7.0 PIPELINE ACCIDENTS AND INCIDENTS**

There are many kinds of from things like natural material defects, operational explosions. Because of hazardous, flammable, or they pose some of the most as weather, topography, and the environment, and the



pipeline accidents and incidents resulting events, corrosion, third party damage, failure, accidental release, fire, or pipelines contain some 43 different kinds even deadly petroleum and chemicals, dangerous situations. Other elements such the kinds of materials involved risk lives, pipeline facilities.

## 7.01 Emergency Situations

When involved in an emergency situation:

- First assess the situation to gain a better understanding of the impact to life, property, and the environment then approach the situation with caution from an upwind location and/or crosswind location.
- Identify the hazards. By understanding the least amount of risk can be determined.
- Locate a pipeline marker which will identify the hour emergency phone number.
- Call the 24-hour emergency phone number and operator's control center personnel may be able about the pipeline product and its hazards. about the situation as possible. The control center isolate the emergency.
- Be prepared to provide such information as a call location, including state, county, city or town, as fire, leak, or vapor; when the incident was injuries.
- Contact CDI as soon as possible.
- Then secure the scene without entering the immediate hazardous area. Try to isolate the area. It may be necessary to evacuate everyone in the danger area to a safe location upwind of the incident area. Use the highest level of precaution and protection until it is known that the area is safe from toxic, flammable, mechanized, and electrical hazards.



hazards the best course of action with the

pipeline product, operator, and 24-

report the incident. The pipeline to provide additional information Provide as much detailed information will act to shutdown the pipeline and

back number; contact name; detailed street or road; type of emergency such reported locally and if there are any

## 8.0 HAZARDOUS MATERIAL

CDI trains its employees to the HAZWOPER Awareness Level. This level of training includes: recognizing a chemical release has occurred; identification of the product; preparation to protect self and others; provides the knowledge of how to get assistance; the ability to secure the area until authorities, operations, or technician level trained personnel arrive on the scene. Our employees will not attempt to contain the spill, stop a leak, clean up a spill or decontaminate people or property.

### 8.01 Hazardous Substance

Hazardous substances include pure or mixed chemicals and hazardous wastes that can cause possible health hazards or damage the environment. Pipeline Right-of-Ways should have signs indicating the kind of chemical in the pipeline, the company or owner of the pipeline and an emergency number to call. A chemical release can be recognized by using common senses; spotting a puddle of abnormal substance or dripping liquid or noticing a strange smell or sound. Chemicals may be explosive, flammable, reactive to water or air, corrosive, or even toxic. A release could be flammable gases or liquids that could form a toxic cloud or produce a reaction with other nearby chemicals, the least they could be are irritants. Avoid or minimize contact with skin, eyes, mucous membranes, inhalation or swallowing. **Evacuate immediately.**

### 8.02 Identifying the Chemical

To identify the chemical, look to see if there is a label on the container, determine what it smells like, if the substance is a solid, liquid, or gas, the location of the leak, and what color is it. He should use common sense and protect himself and others by keeping spectators away, retreating into a safe area, and notifying those in the immediate area of the danger. **Be aware. Vehicles and cell phones are potential ignition sources.** Notify the owner of the pipeline or other authorities, provide them with the location of the threat, if possible identify the chemical, the quantity of spilled material, the evacuation status, and any other information they may need.

### **8.03 Safety Data Sheets (SDS)**

Chemical manufacturers and importers are required to assess the hazards of the chemicals they produce or import. Employers are to provide this information to employees to which they may be exposed. This information may be available to employees through a hazard communication program; material safety data sheets (SDS); container labels; and training. SDS sheets are provided for each chemical currently in use. Safety Data Sheets contain many different kinds of important information such as:

- Chemical Product and Company Identification
- Composition/Information on ingredients
- Physical and Chemical Properties
- Stability and Reactivity
- Health Hazards Information
- Handling and Storage
- Exposure Controls/Personal Protection
- Additional Information

CDI requires material safety data sheets (SDS) be in the vehicle for all chemicals used or carried in the vehicle.

### **9.0 PERSONAL PROTECTION EQUIPMENT (PPE) PLAN (29 CFR.1910.132)**

CDI requires employees to wear steel-toed boots and safety glasses at a minimum on the job or when working with customers. CDI requires employees to wear fire retardant clothing when there is a potential for fire or explosion, and head protection when there is danger of head injuries. Each pipeline owner has their own safety requirements, and CDI expects its employees to adhere to the highest safety standard whether it is CDI's or the customer's.

#### **9.01 Head Protection**

When working on a job site where there is a danger of head injuries, employees will wear an American National Standards Institute (ANSI) protective hard hat. The head protection shall comply with ANSI Z89.1-1997, "American National Standard Institute for Industrial Protective helmet. Head injuries may be caused by flying or falling objects, or by bumping the head against fixed objects. Head protection must ensure against three things: 1) resist penetration, 2) absorb the shock of a blow, and 3) protect against electrical shock. By selecting and using the appropriate protection, head injuries may be prevented.

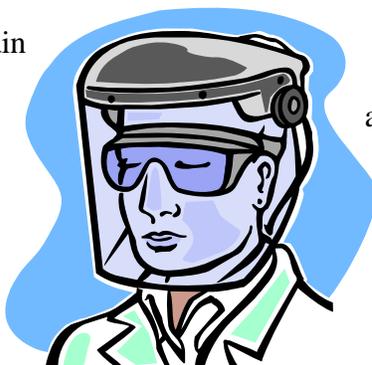


danger of head injuries, employees will (ANSI) protective hard hat. The head protection shall comply with ANSI Z89.1-1997, "American National Standard Institute for Industrial Protective helmet. Head injuries may be caused by flying or falling objects, or by bumping the head against fixed objects. Head protection must ensure against three things: 1) resist penetration, 2) absorb the shock of a blow, and 3) protect against electrical shock. By selecting and using the appropriate protection, head injuries may be prevented.

Most manufacturers of hard hats comply with the American National Standards Institute (ANSI) performance standards. A Type II hard hat is required by CDI because it provides for specified levels of protection from impact and penetration to the side of the head as well as the top of the head. ANSI compliant hard hats also have three class designations to indicate the degree to which the hard hat protects the wearer from electrical current. These hats must meet flammability criteria. Additionally, proper care of hard hats ensure durability and long wear. Hard hats should be replaced every five years.

#### **9.02 Eye and Face Protection**

Employees should select, wear, and maintain appropriate eye and face protection when exposed to hazards from flying particles; chemical, acids, or caustic and gases; or potentially injurious light radiation. Prescription eye wear should have side shields for side protection in hazardous situations from flying particles. Clip-on or slide-on protection to



appropriate eye and face protection particles; chemical, acids, or caustic and gases; or potentially injurious light radiation. Prescription eye wear should have side shields for side protection in hazardous situations from flying particles. Clip-on or slide-on protection to

prescription eyewear will meet this requirement. Those employees who wear prescription lens will ensure the eye protection incorporates the prescription in its design, or wears eye protection equipment over the prescription lens without disturbing the proper position of the prescription or protective lens. Personal prescription protective eye wear is available. When exposed to light radiation, the employee shall wear equipment with filter lenses that have a shade number appropriate for the work being performed. All eye protection will comply with ANSI Z87.1-1989, "American National Standard Institute practice for Occupational and Educational Eye and Face Protection." **Safety glasses are the basic form of eye protection**

### **9.03 Hearing Protection**



Employees are required to wear appropriate hearing protectors when exposed to an 8-hour time-weighted average of 85 decibels or greater. There are two types of hearing protection: earplugs and earmuffs. Hearing protectors shall be replaced as necessary for adequate protection levels.

earphones will not allow potential dangers in the environment to be worn while working with machinery and equipment.

Hearing protection will be selected by the employee and must have a Noise Reduction Rating (NRR) of at least 25.



Portable radio heard; they are not to be

### **9.04 Foot Protection**

Each employee is required to wear American National Standards Institute (ANSI), protective, steel-toed footwear when on a job site. Protective, steel-toed footwear is needed when there is danger of foot injuries due to piercing the sole, falling or rolling objects and/or electrical hazards. Rubber or synthetic footwear must be worn when working with or around caustic chemicals. Thong-type footwear is not allowed on the job at anytime. Personal foot protection best suited for the job will help keep the employee free from potential injury. Common sense will help protect the employee and others. Footwear that meets the rigid standards of the American National Standards Institute (ANSI), International Standards Organization (ISO), Military Standards and the Canadian Standards Association (CSA) are the best suited for most environments.

### **9.05 Hand Protection**

Employees are required to wear hand protection to protect against hazards such as harmful substances entering the skin; abrasions, lacerations or severe cuts; punctures; chemical and thermal burns; and temperature extremes. The hand protection selection shall be based on the performance characteristics relative to the tasks to be performed, conditions present, duration of use, and the potential and existing hazards identified.

Personal Protective Equipment (PPE's) must be maintained and in good working condition in order to effectively protect. It is important to remember PPE's will not protect from every danger. As a CDI employee, it is crucial to wear the required personal protective equipment. It is the employee's responsibility to wear personal protective equipment; it can only protect the employee if the employee uses it. Personal protective equipment must comply to the client's safety policy or to CDI's, whichever provides the highest safety level. Remember PPE's are the last line of defense after engineering controls, administrative controls, and work practices. It is important to understand its limitations.



## **10.0 FALL PROTECTION**

Use fall arrest systems to secure an employee while performing work where the potential to fall is great. Anchoring an employee to a secure point of attachment independent of the support system helps to prevent falls. Employees are required to wear a body belt with the capability for attachment to a lanyard lifeline or a deceleration device to protect the

employee from falls. The body belt or harness distributes the fall arrest forces across the shoulders, chest, waist, thighs, and pelvis, at least. It should have the means to be attached to other personal fall arrest system components. Connectors allow couplings or connections to other parts of the system, linking the system together. They can be independent of the system, such as a carabiner, or an integral part of the system like dee rings or buckles sewn into the body belt or harness.

A deceleration device is a mechanism such as an automatic self retracting-lifeline/lanyard or other type of lanyard designed to limit the amount of energy imposed up on a person during the fall arrest. Each fall arresting system should have a lifeline which is a flexible line for connection to an anchorage, either vertically or horizontally, and serves as a means for connecting other components of a personal fall. Only two types of snap-hooks are generally used: 1) is the locking type with a self-closing self-locking keeper which remains closed and locked until unlocked and pressed open; and 2) a non-locking type with a self-closing keeper which remains closed until pressed open. When using a fall arrest system, the employee should ensure they are securely tied-off. This means connecting either directly or indirectly to an anchorage that is capable of supporting 5,000 pounds or a safety factor of at least two. The employee should ensure the lanyard harness and all equipment is in good working condition. The body belt or body harness attachment point shall be located in the center of wearer's back.

Personal fall arrest systems will be immediately removed from service that have been involved in an impact loading situation or changed. They shall not be used again until after a thorough inspection and deemed undamaged and suitable for use. **ALWAYS INSPECT PERSONAL FALL ARREST SYSTEM BEFORE USING.** Things to inspect for include: defective components, mildew, mold, rips and tears, wear, damage, and other deterioration of components. The environment and situation should dictate as to what kind of fall arrest system to use. It is the employer's responsibility to have a rescue plan in place to promptly rescue an employee should a fall occur and the employee is not able to reach a work level.

## **11.0 RESCUE**

Establish rescue procedures **before** the use of a fall arrest system. Plan specific rescue procedures for each fall arrest situation. A standby person should be assigned for each situation or entry where warranted. The standby person should be equipped with rescue equipment including a safety line attached to the worker, self-contained breathing apparatus, protective clothing, boots, etc. The standby person should use this attached safety line to help rescue the worker. Practice rescue procedures frequently to provide a level of proficiency that eliminates life-threatening rescue attempts and ensures an efficient and clam response to any emergency.

## **12.0 FIRE**

Three things must be present at the same time to produce fire and they include 1) enough **Oxygen** to sustain combustion, 2) enough **Heat** to reach ignition combustible material. Together, they produce away any of these things and the fire will be

temperature, and 3) some **Fuel** or the chemical reaction that is fire. Take extinguished.

### **12.01 Fire Extinguishers**

The CDI vehicles carry a Class B fire flammable liquids such as gasoline, grease,



extinguisher. Class B will extinguish oil, acetone, and other flammable gases.

### **12.02 How to Use a Fire Extinguisher**

Remember the **P.A.S.S.** method should be **Pull** the pin to release the discharge

hit the fuel of the fire, **Squeeze** the top handle to depress the button that releases the pressurized extinguishing agent, and then **Sweep** from side to side until the fire is completely out. Start using the extinguisher from a safe distance away and then slowly move forward. Once the fire is out, keep an eye on the area in case it re-ignites.

### **12.03 Rules for Fighting Fires**

When a fire is discovered, always be certain that no one will be endangered when attempting to put it out. Assist persons in immediate danger and call 911. Activate building alarms if present. The fire alarm will notify the fire department, other building occupants, and shut off the air handling system to prevent the spread of smoke. Remember a small fire should be extinguished only when an employee's back is toward an exit route. A fire of undetermined origin or one which is out of control or spreading rapidly should not be fought by an employee. An employee should not attempt to fight a fire because of smoke inhalation or dangerous situation. If for any reason an employee is not comfortable with the fire or the prevailing conditions do not attempt to put it out.

### **13.0 BLOODBORNE PATHOGENS**



Observing universal precautions by employees will help prevent exposure to bloodborne pathogens. All blood and other bodily fluids are considered infectious regardless of the perceived status of the source individual. CDI utilizes engineering and work practice controls to eliminate or minimize exposure to employees.

The following materials are to be used to decontaminate surfaces and work tools:

- Minimum 10% solution of chlorine bleach
- Lysol or other EPA-registered disinfectants

All work surfaces, tools, objects, etc. should be decontaminated as soon as feasible after any spill of blood or other potentially infectious materials. A bleach solution or disinfectant which comes in contact with contaminated work surfaces, tools, objects, or potentially infectious materials should be left for at least 10 minutes before cleaning. Equipment that may become contaminated with blood or other potentially infectious materials will be examined and decontaminated before servicing or use.

Personal protective equipment, PPE's (gloves, face shields, masks, and eye protection) should be worn in situations where occupational exposure remains to prevent exposure to blood borne pathogens. Appropriate PPE's do not permit blood or other potentially infectious materials to pass through or reach an employee's clothing, skin, eyes, mouth, or mucous membranes under normal conditions of use.

#### **Employees must:**

- Utilize protective equipment in exposure situations.
- Remove garments penetrated by blood or other potentially infectious material immediately or as soon as feasible.
- Remove all personal protective equipment before leaving the work area.
- Place all garments in the appropriate designated area or container for storage, cleaning, decontamination, or disposal.
- Employees must wash their hands or other skin with soap and water, or flush mucous membranes with water, as soon as possible following an exposure incident (such as a splash of blood to the eyes).
- Employees must wash their hands immediately (or as soon as feasible) after removal of gloves or other personal protective equipment with either an antiseptic cleanser, in conjunction with clean cloth/paper towels or antiseptic towelettes. If these alternatives are used, then wash the hands with soap and water as soon as feasible.

## **14.0 LOCKOUT/TAGOUT**

Wherever possible, physical hazards should be eliminated through lockout/tagout procedures. This involves disconnecting power sources, de-energizing equipment, shutting off valves, blocking pipes (blank and blind), and chocking anything that may move even with power disconnected (fan blades for example).

A person knowledgeable with the facility, machinery, and the confined space must accompany the responders during a lockout. Responders must not only confirm that sources have been “locked out”, but they must also add their lock and tag to each shutoff. Typically in a fire department situation, department locks are used and the key will be secured by the FD safety officer, incident commander, or sector officer (depending on the department’s policy) Any physical hazard that cannot be isolated using lockout/tagout is addressed with personal protective equipment (PPE). The responder is protected from sharp edges by using gloves, kneepads, and other clothing, from eye injuries by using safety glasses, from darkness by using portable lighting, from chemicals by wearing hazmat suits and breathing apparatus, etc.

## **15.0 CONFINED SPACE**

Only authorized and trained personnel can enter confined spaces. No CDI job requires entry into any confined space, but employees must be aware of the hazards related to a confined space IAW AFI 91-301.

### **15.01 A Confined Space is:**

- One that is large enough or configured so that someone can bodily enter and perform work.
- Confined spaces usually has a limited or restricted means for entry or exit
- Includes such things as: broilers, tanks, pipelines, sewers, barges, silos, vessels, storage bins, pits, hoppers, vaults, or any other restricted entry space.
- These spaces are not designed for continuous human occupancy.

### **15.02 Confined Space Program**

Because of the dangers associated with confined spaces, OSHA has implemented restrictions and mandatory training to minimize the potential for employee illness, injury, or death. This is provided through education of employees and ensuring confined spaces are identified, personnel are trained, and precautions are implemented.

### **15.03 Hazards of Confined Spaces include:**

- Oxygen deficient atmospheres - asphyxiation is the cause of death in confined spaces
- Oxygen enriched atmospheres-over 21%-violent ignition
- Flammable atmospheres – excessive amount lead to explosion
- Toxic/deadly gases – products stored, leaking, or decomposing
- Temperature- extremely hot or cold
- Engulfment hazards-loose materials stored in bins and hoppers: such as grain, sand, coal, etc. and water or sewage flow
- Noise
- Slick or wet surfaces
- Falling objects
- Rodents/snakes
- Hazards are not readily apparent, detectable by odor or visible

## **15.04 Identifying a Confined Space**

The first step is recognizing a confined space. They may be encountered virtually anywhere; and, recognition is the key to prevention of fatalities. There are many reasons why someone may have to enter a confined space such as inspection repair, or maintenance. The deaths of workers in confined spaces constitute a recurring occupational tragedy, and would-be rescuers make up approximately 60% of the fatalities. Only the confined space team establishes and practices rescue procedures. The CDI procedure employees should practice is how to make a 911 call and then wait for emergency personnel

- **Only authorized employees may enter a confined space.**
- **Do not enter a confined space if someone is yelling for help.**
- **Do not enter a confined space even if there is an incapacitated person inside.**

### **Procedures to Take**

Recognize the need for confined space rescue, initiate contact (**DO NOT ENTER THE CONFINED SPACE**) and establish communications with victims where possible. Recognize and identify the hazards associated with the confined space emergency. Implement the emergency response system, and carry out site control and scene management. One of the most significant responsibilities is to establish operational zones – keeping all personnel and bystanders away from dangers until they can be addressed. It is imperative to take these initial steps, and . . .

***never under any circumstances enter a confined space***

## **16.0 REQUIRED TRAINING**

**U.S. Department of Labor**

**Occupational Safety & Health Administration**

**Safety and Health Topics**

- **Bloodborne Pathogens-** includes Hepatitis B, Hepatitis C, and HIV/AIDS. Workers in many different occupations may be at risk to bloodborne pathogens. Some of those occupations include first aid team members, first responders, housekeeping personnel in some settings, nurses and other healthcare providers. In 1991, OSHA issued the Bloodborne Pathogens Standard (29 CFR 1910.1030) to protect workers from this risk.
- **Chemical Safety-** Chemicals have the ability to react when exposed to other chemicals, water, air, or certain physical conditions. The reactive natures of chemicals are many. Because of these properties, they play essential roles in the production of many chemicals, pharmaceutical, material, and food products we use daily. Chemical reactions can have destructive or harmful consequences if they are not properly managed; such as toxic fumes, fires, and explosions. These reactions may result in injury or death to people, damage to the environment and nature, and, and to physical property. Process safety management (PSM) is one method used to prevent and mitigate chemical reactivity hazards.
- **Confined Space-** include spaces that may be classified as confined space due to the configurations that hinder employee activity when entered, worked in, and exit from them. Confined spaces have limited or restricted entry or exit means, and they are not designed for continuous employee occupancy. Some examples of confined spaces include manholes, underground vaults, pipelines, tanks, storage bins, pits, silos, and process vessels. By OSHA definition, "permit-required confined space" (permit space) is described as a space that has one or more of the following characteristics: contains or has the potential to contain a hazardous atmosphere; contains a material that has the potential to engulf an entrant; has walls that converge inward or floors that slope downward and taper into a smaller area which could trap or asphyxiate an entrant; or contains any other recognized safety or health hazard, such as unguarded machinery, exposed live wires, or heat stress.
- **Electrical Safety-** Working with electricity such as cable harnesses, overhead lines, or circuit assemblies can be dangerous. Engineers, electricians, and other professionals who work directly with electricity may be exposed to

electrical hazards. Others, such as office workers and salespeople, may be indirectly exposed to those types of hazards.

- **Fall Protection-** Falls cause more occupational fatalities and are considered a serious public health problem. According to the US Department of Labor (DOL) falls are one of the leading causes of traumatic occupational death. Falls account for eight percent of all occupational fatalities caused by trauma. An important part of a fall protection program is the identification of the potential fall hazards in the workplace. Whenever a worker is to work at a height of four feet or more, the risk of a fall is present and the worker needs to be protected. In the general industry work at a level of four feet must be provided fall protection, five feet in maritime and six feet in construction. However, fall protection is required when working over dangerous machinery and equipment, regardless of the fall distance. The following references help to recognize and evaluate hazards and possible solutions in the workplace.
- **Fire Safety-** In 2006, four percent of fires and explosions contributed to workplace fatalities according to the Bureau of Labor Statistics' *Census of Fatal Occupational Injuries Charts, 1992-2006*. This page provides valuable reference materials for prevention of fire-related injuries in all workplaces.
- **First Aid-** OSHA requires employees to be provided with a safe and healthy workplace that is reasonably free of occupational hazards. However, it is unreasonable to think that accidents will not occur; therefore, employers are required to provide medical, first aid supplies and personnel commensurate with the hazards of the workplace.
- **Hazardous Communication-** to ensure workplace chemical safety, the identities and hazards of the chemicals must be readily available. OSHA's Hazard Communication Standard (HCS) requires the development and dissemination of such information:
  - 1) Chemical manufacturers and importers are required to evaluate the hazards of the chemicals they produce or import;
  - 2) Prepare labels and material safety data sheets (MSDSs) to convey the hazard information to their downstream customers.
  - 3) All employers with hazardous chemicals in their workplaces must have labels and MSDSs for their exposed workers, and train them to handle the chemicals appropriately.
- **HAZWOPER-** OSHA and its State Plan partners help set and implement national safety and health standards for emergency responders. Foremost among these standards is the Hazardous Waste Operations and Emergency Response standard of 29 CFR 1910.120(q). Depending on the activities being conducted and the hazards present, response activities at worksites may be considered "emergency response" activities.
- **Heat Stress-** Work environments involving high humidity or air temperatures, radiant heat sources, direct physical contact with hot objects, or strenuous physical activities are more likely to have a higher rate for inducing heat stress. Employees engaged in such operations may include places like foundries, brick-firing and ceramic plants, glass products facilities, rubber products factories, electrical utilities (particularly boiler rooms), bakeries, confectioneries, commercial kitchens, laundries, food canneries, chemical plants, mining sites, smelters, and steam tunnels.
- **Lockout/Tagout (LOTO)-** refers to the specific practices and procedures to lockout and tagout machines and equipment. This is the preferred method to safeguard employees from the unexpected energization or startup of machinery and equipment. This process also protects against the untimely release of hazardous energy such as hydraulics, pneumatics, or electrical to name a few, during service or maintenance activities.
- **Personal Protective Equipment-** To reduce the possibility of exposure to hazards, OSHA requires the use of personal protective equipment (PPE) when engineering and administrative controls are not practicable or effective in reducing exposures to acceptable levels. It is the responsibility of employers to determine if PPE's should be used to protect their workers. If PPE's are required, a PPE program should be implemented which address the hazards present; the selection of PPE, maintenance, and use of PPE's. The program should outline all aspects of the training of employees; and monitoring of the program to ensure its effectiveness.
- **Respiratory Protection-** Respirators protect against vapors, mists, fogs, insufficient oxygen environments, harmful dusts, smokes, gases, and sprays. These types of hazards may cause such long-term illnesses as

cancer, lung impairment, other diseases, or even death. Compliance with the OSHA Respiratory Protection Standard could save hundreds of lives and prevent thousands of illnesses annually.

- **Static electricity-** can cause fires or explosions as a result of discharging. Static electricity occurs naturally in nature in one form or another. There is a great deal of industry experience to reduce the hazards of static electricity when handling petroleum liquids. One common static electricity warning is not getting into a vehicle at the gas pumps because static electricity may ignite the gas fumes.

## ***REFERENCES***

- DOT Title 49-Transportation Regulations, Part 40-Procedures for Transportation Workplace Drug and Alcohol Testing Programs, Subpart B-Employer Responsibilities.
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- 2004 Emergency Response Guidebook. U.S. Department of Transportation Research and Special Programs Administration. <http://hazmat.dot.gov/pubs/erg/erg2004.pdf>.
- Handling Petroleum Products & Static Ignition Hazards**  
*Part I: Static Electricity and Protection. And Part II: Lightning, Stray Current and Protection.* By Sullivan D. Curran PE, Executive Director, Fiberglass Tank & Pipe Institute.  
<http://www.fiberglasstankandpipe.com/handlingpetrol.htm>

## **EMERGENCY NUMBERS**

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