PERMITS AND POLICIES

HAZARD AWARENESS

- ❑ Permits reduce potential injuries and illness by identifying potential hazards so that they can be eliminated or controlled prior to and during work operations.
- ❑ Personnel briefed on the hazards unique to each specific jobsite & task
- ❑ Personnel trained to accomplish the job safely
- ❑ Personnel should review the manufacturer's instructions, SDS's, and cylinder labels
- ❑ A JSA meeting has held with all personnel prior to work starting
- ❑ A JSA completed and reviewed by all personnel prior to work starting
- ❑ Any required permits or procedures completed prior to work assignment

PPE FOR ALL JOBS INCLUDES

- ❑ Safety helmet
- ❑ Safety glasses
- ❑ Gloves
- ❑ Hearing protection
- ❑ Safety toe boots
- ❑ Any additional PPE that the supervisor and/or competent person determines is necessary
- ❑ Appropriate welding goggles or face shield when required depending on task being performed
- ❑ Appropriate respirators when required depending on the atmosphere or task being performed

CONFINED SPACE SAFE PRACTICES & PERMITS

- ❑ The proper permit obtained before entry, documenting the hazards, precautions, and duration of the permit.
- ❑ The atmosphere tested for oxygen levels, flammable gases, and toxic substances using a calibrated gas detector to assure compliance with acceptable limits noted on the permit.
- ❑ Proper ventilation maintained before and during entry to ensure acceptable air quality.
- ❑ All sources of energy identified and locked out and tagged out (LOTO).
- ❑ Potential hazards, such as chemical exposure, engulfment risks, or electrical shock, eliminated or controlled.
- ❑ A reliable communication system set up between entrants and the attendant outside the space which can include voice, link person, radios, a bell, an airhorn or other suitable means.
- ❑ An attendant designated to monitor the confined space entry and maintain communication with the entrant(s) and entry supervisor.
- ❑ A detailed emergency response plan, including rescue procedures and equipment, in place.
- ❑ The atmosphere continuously monitored during entry to detect any hazardous changes.
- ❑ The confined space well-lit with explosion-proof lighting if necessary.
- ❑ Access limited to authorized personnel only, and entry/exit points controlled.
- ❑ The permit reviewed to confirm that all pre-entry requirements have been met.
- ❑ All safety and rescue equipment and gas detectors, inspected before use, and if a rescue team is needed the supervisor should coordinate with the rescue team prior to entry.
- ❑ Any necessary ventilation requirements implemented to ensure a safe atmosphere.
- ❑ Any potential ignition sources eliminated in the presence of flammable gases or vapors.
- ❑ The type of rescue that might be needed identified, and proper rescue equipment made available.
- ❑ If necessary, a decontamination procedure provided for personnel and equipment after exiting the confined

CONFINED SPACE SAFE WORK PRACTICES & PERMITS

Each affected employee trained prior to initial assignment, prior to a change in assigned duties, if a new hazard has been created or special deviations have occurred. Before beginning work at a worksite, each employer should ensure that a competent person identifies all confined spaces in which one or more of their employees may work, and identifies each space that is a permit space, through consideration and evaluation of the elements of that space, including testing as necessary. Training records documented and made available to employees and their authorized representative(s).

Measures necessary to prevent unauthorized entry implemented. Pedestrian, vehicle and other barriers necessary to protect entrants from external hazards provided

At least one attendant stationed outside a confined space for the duration of entry operations. If multiple spaces are to be monitored by a single attendant, he/she should have the means to respond to an emergency in one space while continuing oversight of the others, or he/she relieved by another individual.

All affected employees should understand the hazards of going into a confined space.

- Attendants are the workers who watch the entrance to the confined space. They communicate with the entrants and know how many entrants are in the confined space. They also ask for help in an emergency and do not enter the confined space.
- Entrants, the workers who go into the confined space, should know how to use equipment and communicate with the attendant to check-in or ask for rescue.
- Entry supervisors check the atmospheric monitoring being done and make sure all hazards have been identified and mitigated. They also make sure help is available if a rescue is needed and keep the area free of unauthorized people.

Procedures for summoning rescue and emergency services developed and implemented to perform rescue, to provide necessary emergency services to rescued employees, and to prevent unauthorized personnel from attempting a rescue.

An entry permit is the written or printed document that controls entry into a confined space. Before entry is authorized, an entry permit documenting control measures to protect workers from the hazards in the confined space prepared. Procedures necessary for concluding the entry after entry operations have been completed in place. When workers from multiple employers are working in a permit space, procedures implemented to ensure workers from one employer do not endanger workers of another.

The confined space permit may need to be terminated in some situations, such as when new hazards are introduced. Procedures for terminating the permit and closing it out after job completion included.

Before an employee enters the space, the internal atmosphere tested, with a calibrated direct reading instrument, for oxygen content, for flammable gases and vapors, and for potential toxic air contaminants, in that order. The atmosphere within the space periodically tested as necessary to ensure that the continuous forced air ventilation is preventing the accumulation of a hazardous atmosphere.

Personnel and services necessary to perform rescue identified and in place prior to entry. These services may be provided by the site owner/operator, the company performing the confined space work, or by a third party that specializes in confined space rescue since local fire departments may not have the means to perform confined space rescue, so do not assume they are able to do

HOT WORK SAFETY PRACTICES & PERMITS

- ❑ Cutters, welders and supervisors suitably trained in the safe operation of Hot Work equipment and safe use of the process. Assigned fire watchers trained in the proper inspection & use of fire extinguishing equipment and familiar with the facilities for sounding an alarm in the event of a fire
- ❑ If the object to be welded or cut cannot readily be moved, all movable fire hazards in the vicinity taken to a safe place
- ❑ If the object to be welded or cut cannot be moved and if all the fire hazards cannot be removed, then guards used to confine the heat, sparks, and slag, and to protect the immovable fire hazards
- ❑ Fire watchers required whenever hot work is performed in the following situations:
  - a) Appreciable combustible material is closer than 35 feet to the point of operation.
  - b) Appreciable combustibles are more than 35 feet away but are easily ignited by sparks.
  - c) Wall or floor openings within a 35-foot radius expose combustible material in adjacent areas including concealed spaces in walls or floors.
  - d) Combustible materials are adjacent to the opposite side of metal partitions, walls, ceilings, or roofs and are likely to be ignited by conduction or radiation
  - e) If multiple of these situations/conditions exist for one hot work activity, multiple fire watchers may be required)
- ❑ Fire watchers should have fire extinguishers readily available, and present during the entire hot work task
- ❑ A fire watch maintained a minimum of 30 minutes after the hot work operation is completed
- ❑ Before hot work is permitted, the area inspected by the individual responsible for authorizing cutting and welding operations. He/she should designate precautions to be followed in granting authorization to proceed, preferably in the form of a written permit
- ❑ Flammable objects in the hot work area within 35 ft covered or removed
- ❑ Firewatch will remain for at least 30 minutes after work is done
- ❑ Flammable Gases can include Acetelybe, Butane, Propane, Hydrogen, Methane, Natural Gas
- ❑ Fire watch stationed and briefed on work duties
- ❑ A charged/tagged fire extinguisher issued to fire watch along with means to summon help
- ❑ Adequate ventilation established and can be natural or mechanical
- ❑ Welding curtains, blankets, or shields put in place when needed
- ❑ All required hot work PPE used relative to job duties
- ❑ Welding/cutting equipment, hoses/cables and torches inspected prior to work
- ❑ Hot work performer trained and deemed authorized
- ❑ Surrounding equipment locked out or tagged out when necessary
- ❑ Atmospheric testing performed for flammable or combustible gases
- ❑ A Confined Space Entry Permit issued if necessary
- ❑ Access to work areas controlled
- ❑ First aid equipment and attendants readily available
- ❑ Smoking is prohibited during hot work operations. Smoke only in designated areas
- ❑ When required, local exhaust or general ventilating systems provided and arranged to keep the toxic fumes, gases, or dusts below the maximum allowable concentration
- ❑ The operator should report any equipment defect or safety hazard to his/her supervisor and the use of the equipment discontinued until its safety has been assured. Repairs made only by qualified personnel

LOCKOUT TAGOUT (LOTO) SAFE WORK PRACTICES & PERMITS

- ❑ All hazardous energy sources will be identified and documented before starting any work.
- ❑ Lockout/tagout (LOTO) procedures will be established and followed to control hazardous energy during maintenance and repair work.
- ❑ Authorized employees will be trained on LOTO procedures and the proper use of lockout and tagout devices.
- ❑ Lockout devices will be used to isolate and lock hazardous energy sources in the off position.
- ❑ Tagout devices will be used to clearly indicate that a machine or equipment is being serviced and must not be operated.
- ❑ LOTO devices will be standardized and identifiable, ensuring consistent use across all equipment.
- ❑ Before starting work, all energy isolation points will be verified as de-energized using appropriate testing methods.
- ❑ Locks and tags will be applied by authorized employees only, ensuring accountability and adherence to procedures.
- ❑ All affected employees will be notified before LOTO devices are applied and after removed.
- ❑ Each employee working on de-energized equipment will use their own lock and key to prevent accidental re-energization.
- ❑ LOTO devices will remain in place until all maintenance or repair work is completed and the equipment is safe to operate.
- ❑ A thorough inspection will be conducted before removing LOTO devices to ensure all tools and personnel are clear from the equipment.
- ❑ Locks and tags will be removed only by the employee who applied them or under strict supervision when necessary.
- ❑ All energy control procedures will be regularly reviewed and updated to ensure compliance with safety regulations.
- ❑ Any changes to equipment or processes will trigger a review and, if necessary, an update of the LOTO procedures.
- ❑ Periodic audits will be conducted to ensure all employees comply with LOTO procedures and understand their responsibilities.
- ❑ Emergency procedures will be established for removing locks when the employee who applied them is not available.
- ❑ All incidents or near misses related to LOTO procedures will be reported and investigated promptly to prevent recurrence.

WORKING ON ENERGIZED LINES OR EQUIPMENT aka ELECTRICAL HOTWORK

- ❑ Obtain proper authorization before starting any hot work.
- ❑ Inspect equipment to ensure it is in good condition and grounded.
- ❑ Wear appropriate PPE to protect against electrical hazards.
- ❑ Use fire-resistant barriers to prevent the spread of sparks or heat.
- ❑ Assign a fire watch to monitor the area after work is completed.
- ❑ Verify lockout/tagout procedures to ensure circuits are de-energized.
- ❑ Ensure proper ventilation systems are in place to control fumes and gases.
- ❑ Keep fire extinguishers nearby and fully charged.
- ❑ Remove or shield any flammable materials from the area.
- ❑ Perform inspections of the area to identify potential hazards before work begins.

VOLTAGE Each 1000 volts equals 1Kv	SAFE WORKING DISTANCE
up to 50Kv	10 Feet
over 50 to 200Kv	15 Feet
over 200 to 350Kv	20 Feet
over 350 to 500Kv	25 Feet
over 500 to 750Kv	35 Feet
over 750 to 1,000	45 Feet
over 1,000	50 Feet

EXCAVATION AND TRENCHING
SAFE WORK PRACTICES & PERMITS

- ❑ Call 811. All underground utilities, such as gas, water, and electrical lines, will be identified and marked before excavation.
- ❑ A comprehensive excavation plan will be developed to identify potential hazards and outline safety measures.
- ❑ Soil type and conditions will be analyzed before any excavation work begins to determine the appropriate protective systems.
- ❑ Protective systems such as shoring, shielding, or sloping will be implemented to prevent cave-ins at or below 5 feet, and if less than 5 feet anytime the competent person deems necessary.
- ❑ Protective systems will be used when workers enter trenches 5 feet or deeper, unless the excavation is made entirely in stable rock.
- ❑ A competent person will be designated to inspect the excavation site daily and after any weather changes or events.
- ❑ Safe access and egress points will be provided in trenches that are 4 feet or deeper to ensure worker safety, and atmospheric testing will be conducted to determine whether or not the space possess and atmospheric hazard.
- ❑ Excavated materials will be kept at least 2 feet away from the edge of the trench to prevent materials from falling back into the excavation.
- ❑ Water accumulation in trenches will be controlled and managed to prevent hazards associated with water intrusion.
- ❑ Heavy equipment will be operated with care around excavation sites to avoid unintentional collapses or cave-ins.
- ❑ Trenches will be inspected after every shift, as well as after rainstorms or any events that could affect trench stability.
- ❑ Warning systems such as barricades, handrails, or flags will be set up to prevent unauthorized access to the excavation site. Excavation sites will be properly illuminated, especially during night shifts or in areas with low visibility.
- ❑ Emergency rescue equipment, such as ladders and first aid kits, will be readily available at excavation sites.
- ❑ Communication systems will be established to ensure that all workers are aware of potential hazards and safety procedures.
- ❑ Trenches and excavations will be backfilled properly after the completion of work to restore stability to the area.
- ❑ All excavation, trenching, and cofferdam operations will be documented and reviewed regularly to ensure compliance with safety

SDS (Safety Data Sheet) Section Numbers

The Hazard Communication Standard (HCS) requires chemical manufacturers, distributors, or importers to provide Safety Data Sheets (SDSs) (formerly known as Material Safety Data Sheets or MSDSs) to communicate the hazards of hazardous chemical products. The HCS requires new SDSs to be in a uniform format, and include the section numbers, the headings, and associated information under the headings below:

Section 1, Identification includes product identifier; manufacturer or distributor name, address, phone number; emergency phone number; recommended use; restrictions on use.

Section 2, Hazard(s) identification includes all hazards regarding the chemical; required label elements.

Section 3, Composition/information on ingredients includes information on chemical ingredients; trade secret claims.

Section 4, First-aid measures includes important symptoms/effects, acute, delayed; required treatment.

Section 5, Fire-fighting measures lists suitable extinguishing techniques, equipment; chemical hazards from fire.

Section 6, Accidental release measures lists emergency procedures; protective equipment; proper methods of containment and cleanup.

Section 7, Handling and storage lists precautions for safe handling and storage, including incompatibilities.

(Continued on other side)

Section 8, Exposure controls/personal protection lists OSHA's Permissible Exposure Limits (PELs); ACGIH Threshold Limit Values (TLVs); and any other exposure limit used or recommended by the chemical manufacturer, importer, or employer preparing the SDS where available as well as appropriate engineering controls; personal protective equipment (PPE).

Section 9, Physical and chemical properties lists the chemical's characteristics.

Section 10, Stability and reactivity lists chemical stability and possibility of hazardous reactions.

Section 11, Toxicological information includes routes of exposure; related symptoms, acute and chronic effects; numerical measures of toxicity.

Section 12, Ecological information*
Section 13, Disposal considerations*
Section 14, Transport information*
Section 15, Regulatory information*

Section 16, Other information, includes the date of preparation or last revision.

*Note: Since other Agencies regulate this information, OSHA will not be enforcing Sections 12 through 15 (29 CFR 1910.1200(g)(2)).

Employers must ensure that SDSs are readily accessible to employees.
See Appendix D of 29 CFR 1910.1200 for a detailed description of SDS contents.

EHS911 - Hazard Awareness - Permit Required Confined Spaces (PRCS)

VARIOUS TYPES OF CONFINED SPACES

Marine Vessels	Silos
Barges	Hoppers
Stationary Tanks	Elevators
Mobile Tanks	Kilns
Railcars	Manholes
Tunneling	Basins
Excavations	Sewer Lines
Blenders	Pipes
Pits	Lift Stations
Machines	Diked Areas

IN MARINE VESSELS

Enclosed Spaces	Confined Spaces
Cargo holds	Double bottom tank
Tanks	Wing tank
Quarters	Cofferdam
Machinery	
Boiler Spaces	

EXAMPLES OF POTENTIAL HAZARDS

1. Atmospheric Corrosives, Oxygen, LEL, Toxins
2. Electrocution, Shock, Arc Flash
3. Unexpected energy/ startup/ LOTO Failure
4. Struck by/against loads, debris & equipment
5. Caught by/under/ against
6. Falling from above to surface
7. Fire & Explosion

ACCEPTABLE ATOMOSPHERIC CONDITIONS

Initial Reading and Hourly noted on the permit

Gas	*Ideal*	*PEL*
Oxygen	20.8%	19.5% to 23.5% - GI & Constr.
Oxygen	20.8%	19.5% to 22.0% - Maritime
LEL	0.0%	Less than 10%
H2S	0.0ppm	Less than 10ppm
CO	0.0ppm	Less than 35ppm-50ppm*

AUTHORIZED ENTRANTS

1. Know hazards and what can go wrong
2. Properly use equipment:
   testing, PPE, communication, ventilation
3. Communicate with attendant as needed by voice, radio, hand signals, air horn, and rope method (OATH), etc...
4. Alert attendant if permit conditions change
5. Exit as quickly as possible in an emergency or upon being ordered to do so

ATTENDANTS

1. Knows hazards and what can go wrong
2. Aware of behavioral effects/ know signs to look for
3. Knows how many people are in confined space at all times
4. Never enters confined space
5. Maintains communication at all times
6. Monitors all activity inside and outside of the confined space and is able to identify prohibited conditions
7. Summons recuse personnel if necessary
8. Warns and notifies others or unauthorized entrants
9. Performs non entry rescue when necessary
10. Performs no duties other that attendant/hole watch, and never leave position while people are in the confined space or unless relieved

SUPERVISOR

1. Know hazards and what can go wrong
2. Verifies entries on the permit
   Air Quality/ Atmospheric testing
   Corrosives, Oxygen, LEL, Toxins
3. Terminates permit upon completion or any unauthorized changes in or around PRCS
4. Verifies rescue services are available
5. Removes unauthorized people from PRCS
6. Determines when responsibilities are transferred such as shift change, new permits, cease work

RESCUE & EMERGENCY SERVICES SELECTION

1. Evaluate prospective rescuer's ability to rescue as summoned in a timely manner
2. Evaluate prospective rescuer's proficiency
3. Select rescue team from those evaluated
4. Informed each rescue team or service of hazards them may confront
5. Provide access to rescue personnel to all areas where rescue may take place so that evaluations and plans may be made
6. Provide PPE to rescue team
7. Train affected employees in rescue operations
8. Train affected employees in basic first aid/CPR
9. Ensure rescue personnel practice rescues

CONFINED SPACE (must meet all three below) :

- Large enough for an employee to enter fully & perform assigned work;
- Not designed for continuous occupancy by the employee; and
- Has a limited or restricted means of entry or exit.

EMERGENCY Any condition that violates the permit causing workers to be ordered to evacuate the space.

PERMIT-REQUIRED CONFINED SPACE has one or more of these characteristics:

- Contains or has the potential to contain a hazardous atmosphere;
- Contains a material with the potential to engulf someone who enters the space;
- An internal configuration that might cause an entrant to be trapped or asphyxiated by inwardly converging walls or by a floor that slopes downward & tapers to a smaller cross section; and/or
- Contains any other recognized serious safety or health hazards.