UA LITTLE ROCK

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Confined Space Plan

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PURPOSE

The purpose of the UA Little Rock Confined Space Program is to set procedures that will ensure workers safe entry into confined spaces and permit-required confined spaces to perform routine tasks associated with their employment. This procedure is designed to provide the minimum safety requirements in accordance with the Occupational Safety and Health Administration's (OSHA), Confined Space Standard 1910.146.

BACKGROUND

A confined space is defined as any location that has limited openings for entry and egress, is not intended for continuous employee occupancy, and is so enclosed that natural ventilation may not reduce air contaminants to levels below the threshold limit value (TLV). Examples of confined spaces include: manholes, stacks, pipes, storage tanks, trailers, tank cars, pits, sumps, hoppers, and bins. Entry into confined spaces without proper precautions could result in injury, impairment, or death due to the following:

1. An atmosphere that is flammable or explosive
2. Lack of sufficient oxygen to support life
3. Contact with or inhalation of toxic materials
4. General safety or work area hazards such as steam or high-pressure materials

RESPONSIBILITIES

In administering the Confined Space Program, *UA Little Rock* is responsible for:

1. Monitoring the effectiveness of the program
2. Providing atmospheric testing and equipment as needed
3. Providing personal protective equipment as needed
4. Providing training to affected employees and supervisors
5. Providing technical assistance as needed
6. Previewing and updating the program on at least an annual basis or as needed

Environmental Health & Safety (EH&S) is responsible for:

1. Ensuring that a list of confined spaces at all UA Little Rock worksites is maintained
2. Ensuring that canceled permits are reviewed for lessons learned
3. Ensuring training of personnel is conducted and documented
4. Coordinating with outside responders
5. Ensuring that equipment is in compliance with standards
6. Ensuring that the EH&S Officer(s) or Department Supervisor in charge of confined space work performs the duties listed in the following section.

The *EH&S Officer(s) or Department Supervisor in charge of confined space work* are responsible for:

1. Ensuring requirements for entry have been completed before entry is authorized
2. Ensuring confined space monitoring is performed by personnel qualified and trained in confined space entry procedures
3. Ensuring a list of monitoring equipment and personnel qualified to operate the equipment is maintained by the Safety and Occupational Health Office
4. Ensuring that the rescue team has simulated a rescue in a confined space within the past twelve (12) months
5. Knowing the hazards that may be faced during entry, including the mode (how the contaminant gets into the body), signs or symptoms, and consequences of exposure
6. Filling out a permit

7. Determining the entry requirements
8. Requiring a permit review and signature from the authorized Entry Supervisor
9. Notifying all involved employees of the permit requirements
10. Posting the permit in a conspicuous location near the job
11. Renewing the permit or have it reissued as needed (a new permit is required every shift)
12. Determining the number of Attendants required to perform the work
13. Ensuring all Attendant(s) know how to communicate with the entrants and how to obtain assistance
14. Posting any required barriers and signs
15. Remaining alert to changing conditions that might affect the conditions of the permits (i.e., require additional atmospheric monitoring or changes in personal protective equipment)
16. Changing and reissuing the permit, or issuing a new permit as necessary
17. Ensuring periodic atmospheric monitoring is done according to permit requirements
18. Ensuring that personnel doing the work and all support personnel adhere to permit requirements
19. Ensuring the permit is canceled when the work is done
20. Ensuring the confined space is safely closed and all workers are cleared from the area

The EH&S Officer(s) or Department Supervisors(s) shall serve as the Entry Supervisor(s) and shall be qualified and authorized to approved confined space entry permits. The *Entry Supervisor(s)* are responsible for:

1. Determining if conditions are acceptable for entry
2. Authorizing entry and overseeing entry operations
3. Terminating entry procedures as required
4. Serving as an Attendant, as long as the person is trained and equipped appropriately for that role
5. Ensuring measures are in place to keep unauthorized personnel clear of the area
6. Checking the work at least twice a shift to verify and document permit requirements are being observed (more frequent checks shall be made if operations or conditions are anticipated that could affect permit requirements)
7. Ensuring that necessary information on chemical hazards is kept at the worksite for the employees or rescue team
8. Ensuring a rescue team is available and instructed in their rescue duties (i.e., an onsite team or a prearranged outside rescue service)
9. Ensuring the rescue team members have current certification in first aid and cardiopulmonary resuscitation (CPR)

The EH&S Officer(s)or Department Supervisors(s) shall function as an Attendant(s) and shall be stationed outside of the confined workspace. The *Attendants* are responsible for:

1. Being knowledgeable of and being able to recognize potential confined space hazards
2. Maintaining a sign-in/sign-out log with a count of all persons in the confined space and ensuring all entrants sign in and out
3. Monitoring surrounding activities to ensure the safety of personnel
4. Maintaining effective and continuous communication with personnel during confined space entry, work, and exit
5. Ordering personnel to evacuate the confined space if he/she
    a. Observes a condition which is not allowed on the entry permit
    b. Notices the entrants acting strangely, possibly as a result of exposure to hazardous substances
    c. Notices a situation outside the confined space which could endanger personnel
    d. Notices a hazard within the confined space that has not been previously recognized or taken into consideration
    e. Must leave his/her work station

   f. Must focus attention on the rescue of personnel in some other confined space that he/she is monitoring
6. Immediately summoning the Rescue Team if crew rescue becomes necessary
7. Keeping unauthorized persons out of the confined space, ordering them out, or notifying authorized personnel of an unauthorized entry

Rescue Team Members are responsible for:
1. Completing a training drill using mannequins or personnel in a simulation of the confined space prior to the issuance of an entry permit for any confined space and at least annually thereafter
2. Responding immediately to rescue calls from the Attendant or any other person recognizing a need for rescue from the confined space
3. In addition to emergency response training, receiving the same training as that required of the authorized entrants
4. Having current certification in first aid and CPR

Employees who are granted permission to enter a confined space are responsible for:
1. Reading and observing the entry permit requirements
2. Remaining alert to the hazards that could be encountered while in the confined space
3. Properly using the personal protective equipment that is required by the permit
4. Immediately exiting the confined space when
   a. They are ordered to do so by an authorized person
   b. They notice or recognize signs or symptoms of exposure
   c. A prohibited condition exists
   d. The automatic alarm system sounds
5. Alerting Attendant(s) when a prohibited condition exists and/or when warning signs or symptoms of exposure exist

TRAINING

The UA Little Rock EH&S office shall provide training so that all employees whose work is regulated by this Confined Space Program acquire the understanding, knowledge, and skills necessary for the safe performance of their duties in confined spaces. The training shall establish employee proficiency in the duties required in this program, and shall introduce new or revised procedures, as necessary, for compliance with this program. *Training Frequency* EH&S shall provide training to each affected employee:
1. Before the employee is first assigned duties within a confined space
2. Before there is a change in assigned duties
3. When there is a change in permit space operations that presents a hazard for which an employee has not been trained
4. When the UA Little Rock EH&S Officer(s) or Department Supervisor(s) has reason to believe that there are deviations from the confined space entry procedures required in this program or that there are inadequacies in the employee's knowledge or use of these procedures

General Training
All employees who will enter confined spaces shall be trained in entry procedures. Personnel responsible for supervising, planning, entering, or participating in confined space entry and rescue shall be adequately trained in their functional duties prior to any confined space entry. Training shall include the following:
1. Explanation of the general hazards associated with confined spaces
2. Discussion of specific confined space hazards associated with the facility, location, or operation

3. Reason for, proper use, and limitations of personal protective equipment and other safety equipment required for entry into confined spaces
4. Explanation of permits and other procedural requirements for conducting a confined space entry
5. A clear understanding of what conditions would prohibit entry
6. Procedures for responding to emergencies
7. Duties and responsibilities of the confined space entry team
8. Description of how to recognize symptoms of overexposure to probable air contaminants in themselves and co-workers and method(s) for alerting the Attendant(s)

Refresher training shall be conducted as needed to maintain employee competence in entry procedures and precautions.

Specific Training

Training for *atmospheric monitoring personnel* shall include proper use of monitoring instruments, including instruction on the following:

1. Proper use of the equipment
2. Calibration of equipment
3. Sampling strategies and techniques
4. Exposure limits (PELs, TLVs, LELs, UELs, etc.)

Training for *Attendants* shall include the following:

1. Procedures for summoning rescue or other emergency services
2. Proper utilization of equipment used for communicating with entry and emergency/rescue personnel

Training for *Emergency Response Personnel* shall include the following:

1. Rescue plan and procedures developed for each type of confined space that is anticipated to be encountered
2. Use of emergency rescue equipment
3. First aid and CPR techniques
4. Work location and confined space configuration to minimize response time

Verification of Training

Periodic assessment of the effectiveness of employee training shall be conducted by EH&S. Training sessions shall be repeated as often as necessary to maintain an acceptable level of personnel competence.

IDENTIFICATION OF CONFINED SPACES

EH&S shall ensure a survey of the worksite is conducted to identify confined spaces. This survey can be partially completed from initial and continuing site characterizations, as well as other available data (i.e., blueprints and job hazard analyses). The purpose of the survey is to develop an inventory of those locations and/or equipment at UA Little Rock that meet the definition of a confined space. This information shall be communicated to personnel, and appropriate confined space procedures shall be followed prior to entry. The initial surveys shall include air monitoring to determine the air quality in the confined spaces. The potential for the following situations shall be evaluated by EH&S:

1. Flammable or explosive potential
2. Oxygen deficiency
3. Presence of toxic and corrosive material

HAZARD REEVALUATION

EH&S shall identify and reevaluate hazards based on possible changes in activities or other physical or environmental conditions that could adversely affect work. A master inventory of confined spaces shall be maintained. Any change in designation of a confined space will be routed to all affected personnel by EH&S.

PRE-ENTRY HAZARD ASSESSMENT

A hazard assessment shall be completed by EH&S prior to any entry into a confined space. The hazard assessment should identify the following:

1. The sequence of work to be performed in the confined space
2. The specific hazards known or anticipated
3. The control measures to be implemented to eliminate or reduce each of the hazards to an acceptable level

No entry shall be permitted until the hazard assessment has been reviewed and discussed by all persons engaged in the activity. Personnel who are to enter confined spaces shall be informed of known or potential hazards associated with said confined spaces.

HAZARD CONTROLS

Hazard controls shall be instituted to address changes in the work processes and/or working environment. Hazard controls must be able to control the health hazards by eliminating the responsible agents, reduce health hazards below harmful levels, or prevent the contaminants from coming into contact with the workers. The following order of precedence shall be followed in reducing confined space risks.

1. *Engineering Controls*: Engineering controls are those controls that eliminate or reduce the hazard through implementation of sound engineering practices. Ventilation is one of the most common engineering controls used in confined spaces. When ventilation is used to remove atmospheric contaminants from a confined space, the space shall be ventilated until the atmosphere is within the acceptable ranges. Ventilation shall be maintained during the occupancy if there is a potential for the atmospheric conditions to move out of the acceptable range. When ventilation is not possible or feasible, alternate protective measures or methods to remove air contaminants and protect occupants shall be determined by *EH&S* prior to authorizing entry. When conditions necessitate and can accommodate continuous forced air ventilation, the following precautions shall be followed:
    a. Employees shall not enter the space until the forced air ventilation has eliminated any hazardous atmosphere.
    b. Forced air ventilation shall be directed to ventilate the immediate areas where an employee is or will be present within the space.
    c. Continuous ventilation shall be maintained until all employees have left the space.
    d. Air supply or forced air ventilation shall originate from a clean source.
2. *Work Practice (Administrative) Controls*: Work practice (administrative) controls are those controls which eliminate or reduce the hazard through changes in the work practices (i.e., rotating workers, reducing the amount of worker exposure, and housekeeping).
3. *Personal Protective Equipment (PPE)*: If the hazard cannot be eliminated or reduced to a safe level through engineering and/or work practice controls, PPE should be used. *EH&S* shall determine the appropriate PPE needed by all personnel entering the confined space, including rescue teams. PPE that meets the specifications of applicable

standards shall be selected in accordance with the requirements of the job to be performed.

ENTRY PROCEDURES

When entry into a confined space is necessary, either the Entry Supervisor or EH&S may initiate entry procedures, including the completion of a confined space entry permit. Entry into a confined space shall adhere to the following standard entry procedure. *Prior to Entry* The entire confined space entry permit shall be completed before a standard entry. Entry shall be allowed only when all requirements of the permit are met and it is reviewed and signed by an Entry Supervisor. The following conditions must be met prior to standard entry:

1. Affected personnel shall be trained to establish proficiency in the duties that will be performed within the confined space.
2. The internal atmosphere within the confined space shall be tested by the *Entry Supervisor* with a calibrated, direct-reading instrument.
3. Personnel shall be provided with necessary PPE as determined by the Entry Supervisor.
4. Atmospheric monitoring shall take place during the entry. If a hazardous atmosphere is detected during entry:
    a. Personnel within the confined space shall be evacuated by the Attendant(s) or Entry Supervisor until the space can be evaluated by *EH&S* to determine how the hazardous atmosphere developed.
    b. Controls shall be put in place to protect employees before reentry.

Opening a Confined Space

Any conditions making it unsafe to remove an entrance cover shall be eliminated before the cover is removed. When entrance covers are removed, the opening shall be promptly guarded by a railing, temporary cover, or other temporary barrier that will prevent anyone from falling through the opening. This barrier or cover shall protect each employee working in the space from foreign objects entering the space. If it is in a traffic area, adequate barriers shall be erected.

Atmospheric Testing

Atmospheric test data is required prior to entry into a confined space. Atmospheric testing is required for two distinct purposes: (1) evaluation of the hazards of the permit space, and (2) verification that acceptable conditions exist for entry into that space. If a person must go into the space to obtain the needed data, then Standard Confined Space Entry Procedures shall be followed. Before entry into a confined space, the EH&S Officer(s) or Entry Supervisor shall conduct testing for hazardous atmospheres. The internal atmosphere shall be tested with a calibrated, direct-reading instrument for oxygen, flammable gases and vapors, and potential toxic air contaminants, in that order. Testing equipment used in specialty areas shall be listed or approved for use in such areas by EH&S. All testing equipment shall be approved by a nationally recognized laboratory, such as Underwriters Laboratories or Factory Mutual Systems.

1. *Evaluation Testing*. The atmosphere of a confined space should be analyzed using equipment of sufficient sensitivity and specificity. The analysis shall identify and evaluate any hazardous atmospheres that may exist or arise, so that appropriate permit entry procedures can be developed and acceptable entry conditions stipulated for that space. Evaluation and interpretation of these data and development of the entry procedure should involve a technically qualified professional (i.e., consultant, certified industrial hygienist, registered safety engineer, or certified safety professional).
2. *Verification Testing*. A confined space that may contain a hazardous atmosphere shall be tested for residues of all identified or suspected contaminants. The evaluation testing should be conducted with specified equipment to determine that residual concentrations

at the time or testing and entry are within acceptable limits. Results of testing shall be recorded by the person performing the tests on the permit. The atmosphere shall be periodically retested (frequency to be determined by EH&S) to verify that atmospheric conditions remain within acceptable entry parameters.

3. *Acceptable Limits*. The atmosphere of the confined spaces shall be considered to be within acceptable limits when the following conditions are maintained:
    a. Oxygen: 19.5 percent to 23.5 percent
    b. Flammability: less than 10 percent of the Lower Flammable Limit (LFL)
    c. Toxicity: less than recognized American Conference of Governmental Industrial Hygienists (ACGIH) exposure limits or other published exposure levels [i.e., OSHA Permissible Exposure Limits (PELs) or National Institute of Occupational Safety and Health (NIOSH) Recommended Exposure Limits (RELs)]

Isolation & Lockout/Tagout Safeguards

All energy sources that are potentially hazardous to confined space entrants shall be secured, relieved, disconnected, and/or restrained before personnel are permitted to enter the confined space. Equipment systems or processes shall be locked out and/or tagged out as required by the UA Little Rock Lockout/Tagout Program [which complies with OSHA 29 CFR 1910.147 and American National Standards Institute (ANSI) Z244.1-1982, Lockout/Tagout of Energy Sources] prior to permitting entry into the confined space. In confined spaces where complete isolation is not possible, EH&S shall evaluate the situation and make provisions for as rigorous an isolation as practical. Special precautions shall be taken when entering double-walled, jacketed, or internally insulated confined spaces that may discharge hazardous material through the vessel's internal wall. Where there is a need to test, position, or activate equipment by temporarily removing the lock or tag or both, a procedure shall be developed and implemented to control hazards to the occupants. Any removal of locks, tags, or other protective measures shall be done in accordance with the UA Little Rock Lockout/Tagout Program.

Ingress/Egress Safeguards

Means for safe entry and exit shall be provided for confined spaces. Each entry and exit points shall be evaluated by EH&S to determine the most effective methods and equipment that will enable employees to safely enter and exit the confined space. Appropriate retrieval equipment or methods shall be used whenever a person enters a confined space. Use of retrieval equipment may be waived by EH&S if use of the equipment increases the overall risks of entry or does not contribute to the rescue. A mechanical device shall be available to retrieve personnel from vertical confined spaces greater than five (5) feet in depth.

Warning Signs & Symbols

All confined spaces that could be inadvertently entered shall have signs identifying them as confined spaces. Signs shall be maintained in a legible condition. The signs shall contain a warning that a permit is required before entry. Accesses to all confined spaces shall be prominently marked.

EMERGENCY RESPONSE

Emergency Response Plan

EH&S shall maintain a written plan of action that has provisions for conducting a timely rescue of individuals within a confined space should an emergency arise. The written plan shall be kept onsite where the confined space work is being conducted. All affected personnel shall be trained on the Emergency Response Plan.

Retrieval Systems & Methods of Non-Entry Rescue

Retrieval systems shall be available and ready when an authorized person enters a permit space, unless such equipment increases the overall risk of entry, or the equipment would not contribute to the rescue of the entrant. Retrieval systems shall have a chest or full-body harness and a retrieval line attached at the center of the back near shoulder level or above the head. If harnesses are not feasible, or would create a greater hazard, wristlets may be used in lieu of the harness. The retrieval line shall be firmly fastened outside the space so that rescue can begin as soon as anyone is aware that retrieval is necessary. A mechanical device shall be available to retrieve personnel from vertical confined spaces more than five (5) feet deep.

ENTRY PERMITS

The Confined Space Entry Permit is an essential safety tool during entry in confined spaces with known hazards or with unknown or potentially hazardous atmospheres. The entry permit process guides a supervisor and workers through a systematic evaluation of the space to be entered. The permit should be used to establish appropriate conditions.

Before each entry into a confined space, an entry permit will be completed by Environmental Health & Safety (EH&S). EH&S will then communicate the contents of the permit to all employees involved in the operation and post the permit conspicuously near the work location. A standard entry permit shall be used for all entries.

By OSHA definition, a *permit-required confined space* has one or more of the following characteristics:

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

Key Elements of Entry Permits

A standard entry permit shall contain the following items:

1. Space to be entered
2. Purpose of entry
3. Date and authorized duration of the entry permit
4. Name of authorized entrants within the permit space
5. Means of identifying authorized entrants inside the permit space (i.e., rosters or tracking systems)
6. Name(s) of personnel serving as Attendant(s) for the permit duration
7. Name of individual serving as Entry Supervisor, with a space for the signature or initials of the Entry Supervisor who originally authorized the entry
8. Hazards of the permit space to be entered
9. Measures used to isolate the permit space and to eliminate or control permit space hazards before entry (i.e., lockout/tagout of equipment and procedures for purging, ventilating, and flushing permit spaces)
10. Acceptable entry conditions
11. Results of initial and periodic tests performed, accompanied by the names or initials of the testers and the date(s) when the tests were performed
12. Rescue and emergency services that can be summoned, and the means of contacting those services (i.e., equipment to use, phone numbers to call)
13. Communication procedures used by authorized entrants and Attendant(s) to maintain contact during the entry

14. Equipment to be provided for compliance with this Confined Space Program (i.e., PPE, testing, communications, alarm systems, and rescue)
15. Other information necessary for the circumstances of the particular confined space that will help ensure employee safety
16. Additional permits, such as for hot work, that has been issued to authorize work on the permit space

Permit Scope & Duration
A permit is only valid for one shift. For a permit to be renewed, the following conditions shall be met before each reentry into the confined space:

1. Atmospheric testing shall be conducted, and the results should be within acceptable limits. If atmospheric test results are not within acceptable limits, precautions to protect entrants against the hazards should be addressed on the permit and should be in place.
2. *EHS* shall verify that all precautions and other measures called for on the permit are still in effect.
3. Only operations or work originally approved on the permit shall be conducted in the confined space.

A new permit shall be issued, or the original permit will be reissued if possible, whenever changing work conditions or work activities introduce new hazards into the confined space. *EHS* shall retain each canceled entry permit for at least one (1) year to facilitate the review of the Confined Space Entry Program. Any problems encountered during an entry operation shall be noted on the respective permit(s) so that appropriate revisions to the confined space permit program can be made.

Click here to read/complete a UALR Confined Space Entry Permit.

DEFINITIONS

Acceptable Entry Conditions. The conditions that must exist in a confined space to allow entry to and ensure that employees involved with confined space entry can safely enter into and work within the space.

Attendant. An individual stationed immediately outside one or more permit-required confined spaces who monitors the authorized entrants and who performs all attendants' duties assigned in this program.

Authorized Entrant. An employee who is authorized by the Environmental Health and Safety Office to enter a permit-required confined space.

Blanking or Blinding. The absolute closure of a pipe, line, or duct by the fastening of a solid plate (such as a spectacle blind or a skillet blind) that completely covers the bore and that is capable of withstanding the maximum pressure of the pipe, line, or duct with no leakage beyond the plate.

Combustible Dust. Solid particles that if in sufficient concentration will ignite and burn rapidly.

Confined Space. A space that is large enough and so configured that an employee can bodily enter and perform assigned work, has limited or restricted means for entry or exit, and is not designed for continuous employee occupancy. Examples of confined spaces include boilers, storage tanks, sewer manhole, electrical manholes, crawl spaces, ventilation and exhaust ducts, pits, vats, vessels, vaults, pump or lift stations, septic tanks, pipelines, tunnels, elevator pits, trenches and excavations.

Control Measures. A system or device used, or action taken, to control or prevent the introduction of physical or chemical hazards into a confined space.

Department. Any university or research foundation department that performs work in a confined space or permit-required confined space.

Double Block & Bleed. The closure of a line, duct, or pipe by closing and locking or tagging two in-line valves and by opening and locking or tagging a drain or vent valve in the line between the two closed valves.

Emergency. Any occurrence (including any failure of hazard control or monitoring equipment) or event internal or external to the permit-required confined space that could endanger entrants.

Employee. Any person hired by the university or research foundation as full or part-time personnel, including administrators, faculty, staff, students, and work study students.

Engulfment. The surrounding and effective capture of a person by a liquid or finely divided (flowable) solid substance that can be aspirated to cause death by filling or plugging the respiratory system or that can exert enough force on the body to cause death by strangulation, constriction, or crushing.

Entrant. Any employee who enters a confined space.

Entry. The action by which a person passes through an opening into a permit-required confined space. Entry includes ensuing 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 Permit. The written or printed document that is provided by the company to allow and control entry into a permit-required confined space.

Entry Supervisor. An employee from the Environmental Health and Safety Office (EH&S), or their designate, responsible for determining if acceptable entry conditions are present at a permit-required confined space where entry is planned, for authorizing entry and overseeing entry operations, and for terminating entry as necessary. An entry supervisor may also be an employee from a department other than the EH&S who has received advanced training and authorization from the EH&S Manager to be an entry supervisor. An entry supervisor may act as an authorized entrant as long as that person is trained for such role he or she fills. Also, the duties of entry supervisor may be passed from one individual to another during the course of an entry operation.

Ground-Fault Circuit-Interrupter. A device designed to disconnect an electric circuit when it seeks ground through a person or grounded object, thus preventing electric shock and fires.

Hazardous Atmosphere. An atmosphere that may expose employees to the risk of death, incapacitation, and impairment of ability to self-rescue (that is escape unaided from a permit-required confined space), injury, or acute illness from one or more of the following causes:

1. An oxygen deficient atmosphere containing less than 19.5% oxygen by volume or an oxygen enriched atmosphere containing more than 23.5% oxygen by volume
2. A flammable gas, vapor, or mist in excess of 10% of its lower flammable limit (LFL) or lower explosive limit (LEL); a hazardous atmosphere of airborne combustible dust
3. Having a concentration of any toxic substance above the VOSH permissible exposure limit (PEL) or the ACGIH threshold limit value (TLV)
4. Any other atmospheric condition that is immediately dangerous to life or health

Hot Work Permit. The university's written authorization to perform operations (for example, riveting, welding, cutting, burning and heating) capable of providing a source of ignition.

Immediately Dangerous to Life or Health (IDLH). Any condition that poses an immediate or delayed threat to life, that would cause irreversible adverse health effects, or that would interfere with an individual's ability to escape unaided from a permit-required confined space.

Inerting. The displacement of the atmosphere in a permit-required confined space by a noncombustible gas to such an extent that the resulting atmosphere is noncombustible. Note: inerting creates an oxygen deficient atmosphere.

Isolation. The process by which a permit-required confined space is removed from service and completely protected against the release of energy and material into the space by such means as blanking or blinding, misaligning or removing sections of lines, pipes, or ducts; a double block and bleed system; lockout or tagout of all sources of energy; or blocking or disconnecting all mechanical linkages.

Line Breaking. The intentional opening of a pipe, line, or duct that is or has been carrying flammable, corrosive, or toxic material, an inert gas, or any fluid at a volume, pressure, or temperature capable of causing injury.

Lockout/Tagout. Placing locks or tags on the energy isolating device to prevent the unauthorized re-energizing of the device or circuit while work is being performed by personnel.

Non-Permit Confined Space. A confined space that does not contain or, with respect to atmospheric hazards, have the potential to contain any hazard capable of causing death or serious physical harm.

Permit-Required Confined Space. A confined space that:

1. Has limited or restricted means of exit and contains, or has the potential to contain, a hazardous atmosphere or a potential for engulfment and is not intended for continuous employee occupancy, and/or
2. Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a small cross section or contains any other recognized serious safety and health hazard

Purge. To clear a substance from the object that it is contained in; for example, purging an explosive atmosphere from a tank so that work can be performed safely in the tank.

Qualified Person. An entry supervisor who is trained to recognize and evaluate the anticipated hazard(s) of the confined space and who shall be capable of specifying necessary control measures to assure worker safety.

Rescue Team. Those persons designated by the EH&SO prior to any permit-required confined space entry to perform rescues from confined spaces.

Retrieval System. The equipment used for non-entry rescue of persons from permit- required confined spaces, including retrieval lines, chest or full body harness, and a lifting device or anchor. A retrieval line is primarily used in vertical confined spaces and shall not be used in confined spaces consisting of horizontal tunnels or spaces where obstructions could increase the hazard to the entrant during emergency non-entry removal.

Testing. The process by which the hazards that may confront entrants to a permit-required confined space are identified and evaluated. Testing includes specifying the tests that are to be performed in the permit-required confined space.

Zero Mechanical State. The mechanical potential energy of all portions of the machine or equipment is set so that the opening of the pipe(s), tube(s), hose(s), or actuation of any valve, lever, or button will not produce a movement which could cause injury.