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1.0 INTRODUCTION

1.1 The Cornell University Confined Space Program establishes requirements and procedures to protect employees and contractors engaged in alteration, construction, maintenance, repair and inspection activities at locations with one or more confined spaces.

1.2 This program also establishes requirements and procedures for confined space entry operations.

1.3 Examples of locations where confined spaces may occur include, but are not limited to, the following: Bins; boilers; manholes; tanks; incinerators; scrubbers; concrete pier columns; sewers; transformer vaults; heating, ventilation, and air-conditioning (HVAC) ducts; storm drains; water mains; precast concrete and other pre-formed manhole units; drilled shafts; enclosed beams; vessels; digesters; lift stations; cesspools; silos; air receivers; sludge gates; air preheaters; step up transformers; turbines; chillers; bag houses; mixers and or reactors.

2.0 OBJECTIVES AND METRICS

2.1 This program will ensure compliance with applicable federal, state, and local regulations, including:

2.1.1 29 CFR 1910.146, Permit Required Confined Spaces
2.1.2 29 CFR 1926.1200 Subpart AA, Confined Spaces in Construction
2.1.3 NYS Division of Safety and Health Code Rules Part 12, Control of Air Contaminants
2.1.4 NYS Division of Safety and Health Code Rules Part 23, Protection in Construction, Demolition and Excavation Operations

2.2 Program evaluation includes;

2.2.1 Annual review of the written program will be conducted by EHS personnel.
2.2.2 Periodic audits will be performed on employees and contractors engaged in confined space entry activities.

3.0 SCOPE

3.1 This program has been developed for Cornell University employees, contractors and incorporates all remote facilities (except those at Weill Medical College).

3.2 This program shall be implemented whenever employees and contractors are engaged in alteration, construction, maintenance, repair and inspection activities at locations with one or more confined spaces or performing confined space entry operations.

3.3 Locations and operations not covered under this Confined Space Program includes any space that carries its own regulations. These locations and or operations include; excavation, underground construction, caissons, cofferdams and diving.

4.0 ROLES AND RESPONSIBILITIES

4.1 University Administration

4.1.1 Provide support for implementing the Confined Space Program.
4.1.2 Ensure resources are allocated for implementing the Confined Space Program.

4.2 Department of Environmental, Health and Safety (EHS)
4.2.1 Develop and maintain the Confined Space Program.
4.2.2 Develop and maintain the confined space training for employees and rescue team.
4.2.3 Enforce all Confined Space Entry Program procedures and requirements.
4.2.4 Audit employees’ and contractors’ compliance to ensure:
   a. Proper procedures are followed throughout confined space entries.
   b. Proper usage of gas detection, personal protective, rescue and other required equipment.
4.2.5 Provide confined space entry rescue and emergency response in the event of an incident.
4.2.6 Manage the iNet gas detection equipment and online system.

4.3 Department Managers/Supervisors
4.3.1 Enforce Confined Space Program procedures and requirements when applicable.
4.3.2 Ensure all employees performing confined space entry have received the training.
4.3.3 Contact EHS to report unlabeled confined spaces and to evaluate new or suspected confined spaces.
4.3.4 Provide employees the necessary equipment and resources to protect them from real and potential hazards associated with the confined space entry.
4.3.5 Communicate known confined space information to employees (i.e. confined space locations, hazards, permit requirements, precautions, incidents, program updates, and safety bulletins).

4.4 Employees
4.4.1 Perform confined space entries in compliance with this program.
4.4.2 Attend and successfully complete applicable confined space training and exams.
4.4.3 Recognize and report at-risk confined space entry conditions and practices to your supervisor and or EHS.
4.4.4 Perform your assigned role and responsibilities outlined in section 9.0 during confined space entry unless relieved by another trained employee.

4.5 Contractors
4.5.1 Ensure compliance with Occupational Safety Health Administration (OSHA) and New York State Department of Labor confined space regulations.
4.5.2 Upon request provide employer’s Confined Space Program, employee training records or completed permits.
4.5.3 Ensure employees performing confined space entry, rescue or other duties have completed applicable training.
4.5.4 Prior to commencement of work scope:
   a. Assess project site to identify locations with one or more confined spaces.
   b. Evaluate confined spaces your employee(s) and or subcontract employee(s) may enter to perform work.
   c. Train workers on the location and hazards confined spaces.
4.5.5 Ensure unauthorized people are protected from the space’s hazards and do not enter confined spaces on work site.

4.6 Confined Space Trainer
4.6.1 Must be an approved trainer by EHS. Trainers are identified on
4.6.2 Ensure trainees have successfully completed classroom training and exam.
4.6.3 Submit completed training documentation and records to EHS.

5.0 IDENTIFICATION, EVALUATION AND RECLASSIFICATION

5.1 Prior to employee(s) or contractor(s) performing alteration, construction, maintenance, repair and or inspection activities a competent person must identify confined spaces in which one or more employees may enter to perform work.

5.1.1 A Space will be designated as a Confined Space if the space meets all of the following criteria:
   a. It is large enough and so configured that an employee can bodily enter and perform assigned work
   b. Has limited or restricted means for entry or exit
   c. Is not designed for continuous employee occupancy

5.2 Upon identification of a confined space which must be entered to perform work a competent person must evaluate the elements of the space and its potential hazards to determine if the space is a permit-required confined space or a non-permit confined space.

5.2.1 A Confined Space will be designated as a Permit-Required Confined Space (PRCS) if the space meets any of the following criteria:
   a. Contains or has the potential to contain a hazardous atmosphere
   b. Contains a material with the potential to engulf someone who enters the space
   c. 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 smaller cross-section
   d. Contains any other recognized serious safety or health hazard

5.2.2 A Confined Space that does not meet the criteria of a PRCS will be considered a non-permit confined space.

5.3 Upon identification of a PRCS, the spaces entry portal, hatch, cover or equally effective location should be labeled with the appropriate danger signage.

5.3.1 Outdoor manhole covers or hatches which cannot feasibly be labeled with traditional signage will be considered PRCS unless proven otherwise by reclassification procedures.
   a. These unlabeled PRCS should have additional safeguards to prevent unauthorized entry, such as; locks or entryway requires a special tool to open.

5.3.2 Employees and contractors shall report unlabeled PRCS or suspected PRCS to Cornell University EHS at 607-255-8200.

5.3.3 Contact EHS for labels and signage.

5.4 A space designated as a PRCS may be reclassified as a non-permit confined space when a competent person determines all of the following has been met:

5.4.1 The PRCS contains no actual or potential atmospheric hazards.
5.4.2 All hazards within the PRCS have been eliminated or isolated.
5.4.3 The entry supervisor must complete Form HS3F-002 Confined Space Reclassification Form and authorizes entry.
5.4.4 All requirements detailed on Form HS3F-002 Confined Space Reclassification Form are
adhered to and implemented prior to and throughout entry.

6.0 GENERAL REQUIREMENTS

6.1 Unauthorized employees should be prevented from entering Confined Spaces.

6.2 All potential and known hazards (e.g. atmospheric, chemical, engulfment, physical, hazardous sources of energy) within a confined space which could potentially endanger entrants must be controlled, isolated and or eliminated prior to performing confined space entry.

6.2.1 These sources can be locked out, tagged, double-blocked and bled or otherwise controlled and will be verified and tested in accordance with the Lock/Tag/Verify (LTV) Program

6.3 The entry point must be guarded to prevent accidental falls and to protect entrants from falling objects.

6.4 Entryways located in roadways and pedestrian thoroughfares must perform additional precautions to protect passers byers, pedestrians, motorists and employees performing entry, such as; barricades, barriers, temporary traffic controls, and or temporary pedestrian controls.

6.5 If the confined space does not have adequate lighting (5 foot-candles) at the entry point and inside the space, then temporary lighting, head lamps and or other means of additional lighting shall be utilized

6.6 Prior to hot work being performed in a confined spaces, employees are required to;

6.6.1 Complete a hot work permit and utilize sufficient continuous forced-air ventilation throughout the duration of hot work.

6.6.2 Compressed gas cylinders shall never be utilized or stored inside of a confined space.

7.0 NON-PERMIT CONFINED SPACE ENTRY

7.2 Prior to removing entry cover and again prior to entry, a competent person shall evaluate the space for potential hazards.

7.3 Prior to entry into the space a competent person shall perform pre-entry atmospheric testing with an appropriate gas detection equipment.

7.4 If unexpected hazards arise while in the space all entrants shall exit the space immediately, the competent person shall suspend entry and contact supervisor for guidance.

7.5 When there are changes in the use or configuration of a non-permit confined space that may increase the hazards to entrants, or some indication that the initial evaluation of the space may not have been adequate contact supervisor for further evaluation.

8.0 PERMIT-REQUIRED CONFINED SPACE ENTRY

8.1 Prior to removing entry cover and again prior to entry, the Entry Supervisor and or competent person shall evaluate the space for potential hazards. All efforts shall be made to eliminate, isolate or control potential hazards within the space utilizing engineering controls, isolation, ventilation, and/or lock-tag-verify (LTV) procedures to ensure a safe entry.

8.1.1 Pressurized vessels must be de-pressurized to atmospheric pressure prior to entry.

8.2 Prior to entry the entry supervisor shall Complete Form HS3F_001_ConfinedSpaceEntryPermit
and perform a pre-entry briefing to communicate the space’s hazards, entry procedures and assigned responsibilities with the attendant and entrants.

8.2.1 The completed permit shall be conspicuously posted at the entry portal or equally effective means and is only valid for one shift or the duration of the entry task, whichever is shorter. However, a new permit must be issued by the Entry Supervisor under the following circumstances:

a. If the work conducted in the Permit Required Confined Space is not identified on the original permit.
b. If the entry supervisor determines a new permit is necessary.
c. When unexpected conditions arise.

8.3 Communication methods, such as voice, visual signals, audible alarms, two-way radios, telephones, etc., are to be used to communicate between the entrants and the attendant, or the attendant to the rescuers. These methods must be tested prior to the entry and must be able to communicate throughout the duration entrants are inside the PRCS.

8.3.1 If communication method fails during entry all entrants shall exit the space.

8.4 Without entering the space and prior to entry initial atmospheric testing shall be performed with an appropriate direct reading gas detection device to ensure acceptable air quality.

8.4.1 Actual readings should not be taken until adequate time has been given for the air to reach the sensor(s) and for the sensor(s) to respond, see manufacturer’s requirements.

8.4.2 Atmospheric testing must be conducted in various positions and at various levels throughout the PRCS.

8.5 Entry into a PRCS will not be permitted if any of the following conditions exist; if oxygen levels are less than 19.5% or greater than 23.5%, if combustible gas levels are greater than 10% lower explosion limit (LEL), if carbon monoxide levels are greater than 25 PPM, if hydrogen sulfide levels are greater than 1 PPM, or when the toxic contaminant concentration exceeds ACGIH’s current TLV.

8.6 When atmospheric hazards are present in a permit required confined space, continuous forced air ventilation shall be used prior to entry and throughout the duration of the work activities. The continuous forced-air ventilation shall be sufficient to maintain a safe atmosphere throughout the entry.

8.7 If a confined space contains an atmosphere that is flammable or considered immediately dangerous to life or health (IDLH), the area may require purging before employees can enter.

8.8 Throughout the entry the atmosphere shall be continuously monitored with an appropriate direct reading gas detection device to ensure acceptable air quality exists within the space.

8.8.1 Atmospheric monitoring tests will be performed where entrants are working.

8.8.2 In the event gas detection device malfunctions, gas detection device alarms, additional hazards arise or a condition specified in section 8.5 exists, each entrant must immediately exit the space.

8.9 Upon completion of the entry:

8.9.1 Entrants must remove all unnecessary equipment or material from space and exit the PRCS.

8.9.2 Restore PRCS location to normal condition.

8.9.3 Entry Supervisor shall terminate the entry and cancel the Permit.
8.9.4 The Entry Supervisor will note any problems that occurred during the entry on the canceled permit.

8.9.5 Completed Confined Space Entry Permits (HS3F_001) shall be maintained for at least one year in a designated location within the Entry Supervisor’s department.

8.9.6 Upon request completed forms must be made available to EHS for annual program review.

9.0 PERMIT-REQUIRED CONFINED SPACE DUTIES

9.1 Entry into a PRCS requires an authorized attendant, entrant, and entry supervisor. The attendant or entrant can also act as the entry supervisor as long as that person is trained and equipped as required by the standard for each role he or she fulfills.

9.2 Authorized Entrant is an employee trained in confined space and permit required confined space safety and is performing work within a space. The entrant shall:

9.2.1 Be approved by the employer to enter a confined space or PRCS area
9.2.2 Recognize, control, or eliminate potential hazards that may be encountered during entry
9.2.3 Understand and know the hazards that may be faced during entry, including information on the mode, signs and symptoms, and consequences of the exposure
9.2.4 Properly utilize all required safety equipment
9.2.5 Communicate with the attendant as necessary to enable the attendant to monitor entrant status
9.2.6 Evacuate the space when a prohibited condition is detected, or when the attendant deems it necessary

9.3 Authorized Attendant is an employee trained in confined space safety, who is stationed outside of the space, and monitors the authorized entrants. The attendant shall:

9.3.1 Understand and know the hazards that may be faced during entry, including information on the mode, signs and symptoms, and consequences of the exposure
9.3.2 Properly utilize and enforce the use of all required safety equipment
9.3.3 Maintain communication with the authorized entrant(s)
9.3.4 Continuously maintain an accurate count of entrants in the permit space
9.3.5 Remain in a designated location outside the permit space during entry operations or until relieved by another authorized attendant
9.3.6 Monitor activities inside and outside the space to determine if it is safe for entrants to remain in the space and order the authorized entrants to evacuate the permit space immediately when a hazardous condition is detected
9.3.7 Do not perform any duties that might interfere with their primary duty to monitor and protect the entrants
9.3.8 Summon rescue and other emergency services as soon as needed
9.3.9 Perform non-entry rescue

9.4 Entry Supervisor is a qualified employee (such as the foreman or crew chief) trained in confined spaces who ensures that pre-entry procedures have been completed and acceptable entry conditions have been met prior to entry. An entry supervisor is charged with overseeing entry, entry operations and for terminating entry as required. The entry supervisor shall:

9.4.1 Understand and know the hazards that may be faced during entry, including information on the mode, signs and symptoms, and consequences of the exposure
9.4.2 Verify, by checking that the appropriate entries have been made on the permit, that all tests specified by the permit have been conducted and that all procedures and equipment specified by the permit are in place before endorsing the permit and allowing entry to begin.

9.4.3 If non-entry rescue is infeasible, entry rescue provision shall be made with the appropriate entry rescue service. Inform entry rescue service of PRCS entry, location of PRCS entry, and anticipated time of entry into the PRCS and contact the rescue service again upon completion of the PRCS entry.

9.4.4 Terminate the entry, cancel the permit and store permits in designated location for at least one year.

9.4.5 Prevent unauthorized individuals to enter the permit space during entry operations.

10.0 ALTERNATE ENTRY PROCEDURE

10.1 Alternate entry procedures in general are not permitted. Any use of alternate procedure must be approved by EHS, Occupational Health, Safety and Injury Prevention.

11.0 EQUIPMENT

11.1 Cornell University will provide the necessary equipment for safe entry into confined spaces.

11.2 Affected employees shall be trained in the proper use and inspection practices of the equipment.

11.3 Equipment available for safe entry into confined spaces includes:

- 11.3.1 Gas detection meters
- 11.3.2 Ventilation equipment
- 11.3.3 Communication equipment
- 11.3.4 Personal protective equipment
- 11.3.5 Lighting equipment
- 11.3.6 Barriers, barricades and guardrail
- 11.3.7 Ladders and hoist equipment
- 11.3.8 Rescue equipment
- 11.3.9 Respiratory protection equipment
- 11.3.10 Any other equipment necessary for safe entry into and rescue from permitted spaces

11.4 Gas detection meters

11.4.1 The calibration of individual portable gas detection meters is done with the appropriate calibration gas to give instrument responses that reflect expected contaminants. Special care needs to be taken to ensure that the proper mixtures are used, so false measurements are not taken.

a. The instrument must be bump tested prior to each shifts use and calibrated every 30 days.

11.4.2 iNet MX4 Ventis four gas detection meters alarm at;

a. Carbon Monoxide \( \geq 25 \text{ PPM} \)
b. Hydrogen Sulfide: \( \geq 1 \text{ PPM} \)
c. LEL \( \geq 10\% \)
d. Oxygen \( \leq 19.5\% \) or \( \geq 23.5\% \)

11.4.3 Contact EHS for specialty gas detection meters.

11.4.4 Malfunctioning meters shall NOT be used for confined space entry and shall be returned.
12.0 RESCUE

12.1 A rescue plan shall be in place under each of the following conditions:
   12.1.1 If performing PRCS entry operations.
   12.1.2 If entry must be made into the PRCS space to inspect, evaluate or eliminate hazards.
   12.1.3 If the work being performed creates an additional hazard that cannot be isolated or eliminated.

12.2 Non-entry rescue is required unless the retrieval equipment would increase the overall risk of entry or would not contribute to the rescue of entrants. Whenever non-entry rescue is selected, the entry employer must ensure that retrieval systems or methods are used whenever an entrant enters the permit space. Non-entry rescue procedures shall include:
   12.2.1 The use of a full body harness, with a retrieval line attached at the center of the entrant's back near shoulder level, or above the entrant's head. Wristlets or anklets may be worn in lieu of a full body harness if the use of a full body harness is infeasible or creates a greater hazard and that the use of wristlets or anklets is the safest and most effective alternative.
   12.2.2 The use of a retrieval line which shall be attached to a mechanical device or fixed point outside the permit space in such a manner that rescue can begin as soon as the rescuer becomes aware that rescue is necessary.
   12.2.3 A mechanical device must be available to retrieve personnel from vertical type permit spaces more than 5 feet (1.52 meters) deep.
   12.2.4 Only non-powered retrieval devices are permitted.

12.3 Entry rescue provisions are required to be made prior to entry. The Entry Supervisor is responsible for ensuring that rescue services are available and that the means for summoning rescue services are operable.

12.4 EHS will provide entry rescue services unless it is determined that alternate resources are necessary for a safe rescue. All entry rescue situations will be reviewed and coordinated by Environmental Health and Safety.

13.0 TRAINING

13.1 Cornell University shall provide training to all affected employees engaged in confined space activities, to perform their assigned duties and responsibilities. Training shall be provided:
   13.1.1 Before employee is first assigned tasks requiring confined space entry.
   13.1.2 Whenever there is a change in PRCS entry operations that presents a hazard about which an employee has not previously been trained.
   13.1.3 Whenever the employer has reason to believe either that there are deviations from the confined space entry procedures or that there are inadequacies in the employee's knowledge, procedures or use of confined space equipment.
   13.1.4 All affected employees must attend confined space entry training at least once every three years.
13.2 Lock, Tag, Verify is a prerequisite to Confined Space Entry Training.

13.3 At a minimum confined space entry training shall include information on:
   13.3.1 Recognition and awareness of confined spaces at Cornell University
   13.3.2 Confined space hazards
   13.3.3 Safe entry procedures and entry equipment
   13.3.4 Air monitoring procedures and gas detection equipment
   13.3.5 Hazard elimination, isolation and control
   13.3.6 Responsibilities of Entrants, Attendants and Entry Supervisor
   13.3.7 Rescue procedures

13.4 Entry rescue training at a minimum shall include:
   13.4.1 Prerequisite to confined space entry training is Lock, Tag, and Verify.
   13.4.2 Recognition and awareness of confined spaces at Cornell University
   13.4.3 Confined space hazards recognition
   13.4.4 Safe entry procedures and entry equipment
   13.4.5 Air monitoring procedures and gas detection equipment
   13.4.6 Hazard elimination, isolation and control
   13.4.7 Responsibilities of Entrants, Attendants and Entry Supervisors
   13.4.8 Rescue procedures
   13.4.9 First Aid, CPR and AED Training
   13.4.10 Training on permit space rescues before attempting an actual rescue

13.5 Entry rescue training must be conducted at least once every 12 months, by means of simulated rescue operations in which the team will remove dummies, manikins, or actual persons from the permit spaces or simulated areas.

13.6 The training shall establish employee proficiency in the duties required by this instruction and shall introduce new or revised procedures, as necessary, for compliance with this instruction or when future revisions occur. Employee supervisors shall ensure that the training required by this section has been accomplished. All training documentation must be maintained with the Environmental Health and Safety department.

14.0 CONTRACTORS

15.0 RECORDS AND DOCUMENT CONTROL

15.1 In accordance with OSHA 1910.146 and OSHA 1926.1200 Subpart AA, The Entry Supervisor is to maintain completed permits within a designated location within their respective department for a minimum of one (1) year.

15.2 EHS will maintain employee confined space training records in the Learning Management System.
16.0 DEFINITIONS

"Acceptable entry conditions" means the conditions that must exist in a permit space to allow entry and to ensure that employees involved with a permit-required confined space entry can safely enter into and work within the space.

"Attendant" means a trained individual stationed outside one or more permit spaces who monitors the authorized entrants and who performs all attendant's duties as assigned.

"Authorized entrant" means an employee who is trained and authorized to enter a permit space.

"Barrier" means a physical obstruction that block or limits access.

"Blanking or blinding" means 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.

"Competent person" means one who is capable of identifying existing are predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employee, and who has the authorization to take prompt corrective measures to eliminate them.

"Confined space" means a space that:
(1) Is large enough and so configured that an employee can bodily enter and perform assigned work; and
(2) Has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry.); and
(3) Is not designed for continuous employee occupancy.

"Double block and bleed" means 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.

"Early-warning system" means the method used to aery authorized entrants and attendants that an engulfment hazard may develop.

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

"Engulfment" means 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.

"Entry" means 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 Employer" means any employer who decides that an employee it directs will enter a permit space.

"Entry permit (permit)" means the written or printed document that is provided to allow and control entry into a permit space and that contains the information specified in paragraph (f) of this section.

"Entry supervisor" means the person (such as the employer, foreman, or crew chief) responsible for determining if acceptable entry conditions are present at a permit space where entry is planned, for authorizing entry and overseeing entry operations, and for terminating entry as required by this section.

NOTE: An entry supervisor also may serve as an attendant or as an authorized entrant, as long as that...
person is trained and equipped as required by this section for each 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.

"Hazardous atmosphere" means 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 space), injury, or acute illness from one or more of the following causes:
(1) Flammable gas, vapor, or mist in excess of 10 percent of its lower flammable limit (LFL);
(2) Airborne combustible dust at a concentration that meets or exceeds its LFL;
NOTE: This concentration may be approximated as a condition in which the dust obscures vision at a distance of 5 feet (1.52 m) or less.
(3) Atmospheric oxygen concentration below 19.5 percent or above 23.5 percent;
(4) Atmospheric concentration of any substance for which a dose or a permissible exposure limit is published in Subpart G, Occupational Health and Environmental Control, or in Subpart Z, Toxic and Hazardous Substances, of this Part and which could result in employee exposure in excess of its dose or permissible exposure limit;
NOTE: An atmospheric concentration of any substance that is not capable of causing death, incapacitation, and impairment of ability to self-rescue, injury, or acute illness due to its health effects is not covered by this provision.
(5) Any other atmospheric condition that is immediately dangerous to life or health.
NOTE: For air contaminants for which OSHA has not determined a dose or permissible exposure limit, other sources of information, such as Material Safety Data Sheets that comply with the Hazard Communication Standard, section 1910.1200 of this Part, published information, and internal documents can provide guidance in establishing acceptable atmospheric conditions.

"Host Employer" means the employer that owns or manages the property where the construction taking place.

"Hot work permit" means the 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)" means any condition that poses an immediate or delayed threat to life or that would cause irreversible adverse health effects or that would interfere with an individual's ability to escape unaided from a permit space.
NOTE: Some materials -- hydrogen fluoride gas and cadmium vapor, for example -- may produce immediate transient effects that, even if severe, may pass without medical attention, but are followed by sudden, possibly fatal collapse 12-72 hours after exposure. The victim "feels normal" from recovery from transient effects until collapse. Such materials in hazardous quantities are considered to be "immediately" dangerous to life or health.

"Inerting" means the displacement of the atmosphere in a permit space by a noncombustible gas (such as nitrogen) to such an extent that the resulting atmosphere is noncombustible.
NOTE: This procedure produces an IDLH oxygen-deficient atmosphere.

"Isolation" means the process by which a permit 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; lock-tag-verify of all sources of energy; or blocking or disconnecting all mechanical linkages.

"Line breaking" means 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" means the placement of a lockout device on an energy isolating device, in accordance with an
established procedure, ensuring that the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

"Lower flammable limit or lower explosive limit" means the minimum concentration of a substance in air needed for an ignition source to cause a flame or explosion.

"Non-entry rescue" Occurs when a rescue service, usually the attendant, retrieves employees in a permit space without entering the permit space.

"Non-permit confined space" means 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.

"Oxygen deficient atmosphere" means an atmosphere containing less than 19.5 percent oxygen by volume.

"Oxygen enriched atmosphere" means an atmosphere containing more than 23.5 percent oxygen by volume.

"Permit-required confined space" means a confined space that has one or more of the following characteristics:

(1) Contains or has a potential to contain a hazardous atmosphere;
(2) Contains a material that has the potential for engulfing an entrant;
(3) 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 smaller cross-section; or
(4) Contains any other recognized serious safety or health hazard.

"Permit-required confined space program" means the overall program for controlling, and, where appropriate, for protecting employees from, permit space hazards and for regulating employee entry into permit spaces.

"Permit system" means the written procedure for preparing and issuing permits for entry and for returning the permit space to service following termination of entry.

"Physical hazard" means the existing or potential hazard that can cause death or serious physical damage.

"Prohibited condition" means any condition in a permit space that is not allowed by the permit during the period when entry is authorized.

"Rescue service" means the personnel designated to rescue employees from permit spaces.

"Retrieval system" means the equipment (including a retrieval line, chest or full-body harness, wristlets, if appropriate, and a lifting device or anchor) used for non-entry rescue of persons from permit spaces.

"Tag out" means: Placement of a tag out device on a circuit or equipment that has been de-energized, in accordance with an established procedure, to indicate that the circuit or equipment being controlled may not be operated until the tag out device is removed; and The employer ensures that (i) tag out provides equivalent protection to lockout, or (ii) the lockout is infeasible and the employer has relieved, disconnected, restrained and otherwise rendered safe stored (residual) energy.

"Testing" means the process by which the hazards that may confront entrants of a permit space are identified and evaluated. Testing includes specifying the tests that are to be performed in the permit space.

NOTE: Testing enables employers both to devise and implement adequate control measures for the protection of authorized entrants and to determine if acceptable entry conditions are present immediately prior to, and during, entry.
“Ventilate” or “ventilation” means controlling a hazardous atmosphere using continuous forced-air mechanical systems that meet the requirements of § 1926.57 (Ventilation).

### 17.0 DOCUMENT HISTORY

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