

# Confined Space Entry Program

## I. Purpose:

The purpose of this program is to ensure compliance with (and adherence to) the requirements, processes, practices and means pertaining to rules or regulations adopted directly or by reference from the Occupational Safety and Health (OSHA) standard 29 CFR 1910.146 on Confined Space Entry.

## II. Scope:

This procedure applies to any department, employee and contractor who may have the potential to work in or around confined spaces. Contractors working on behalf of the City are required to follow all rules and regulations set forth in 29 CFR 1910.146.

## III. Reference/Commitment

OSHA Standard 1910.146 – Permit-required confined spaces.

<https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.146>

## VI. Definitions:

1. **"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.
2. **"Attendant"** - an individual stationed outside one or more permit spaces who monitors the authorized entrants and who performs all attendant's duties assigned in the employer's permit space program.
3. **"Authorized entrant"** - an employee who is authorized by the employer to enter a permit space.
4. **"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.
5. **"Confined Space"** - a space that:
  - a. Is large enough and so configured that an employee can bodily enter and perform assigned work; and

- b. Has limited or restricted means of entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry); and
  - c. Is not designed for continuous employee occupancy.
- 6. **"Dispatcher"** – an individual who is responsible for communication with entry supervisor prior to entering and exiting a confined space and who may send emergency assistance if entry supervisor does not respond in designated amount of time.
- 7. **"Double block and bleed"** - the closures 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.
- 8. **"Emergency"** – any occurrence (including any failure of hazard control or monitoring equipment) or event internal or external to the permit space that could endanger entrants.
- 9. **"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.
- 10. **"Entry"** – the action by which a person passes through an opening into a permit-required confined space. Entry includes ensuring 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.
- 11. **"Entry Permit"** – the written or printed document that allows a controlled entry into a permit space and that contains pertinent safety information.
- 12. **"Entry Supervisor"** – 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.**

13. **"Field Test"** – checking an instrument for proper response and operation in the field. If adequate operation is not received, the equipment will not be used, but removed from service (tagged to indicate), and adjusted or repaired by a properly trained and qualified technician.
14. **"Hazardous atmosphere"** – an atmosphere that may expose employees to the risk of death, incapacitation, 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:
- a. Atmospheric oxygen concentration below 19.5% or above 23.5%;
  - b. Flammable gas, vapor, or mist in excess of 10 percent of its lower explosive limit (LEL);
  - c. Airborne combustible dust at a concentration that meets or exceeds its LEL;

**NOTE: This concentration may be approximated as a condition in which the dust obscures vision at a distance of 5 feet (1.52M) or less.**

15. **"Atmospheric concentration"** – 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.**

- a. 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.**

16. **"Hot Work Permit"** – the employer's written authorization to perform operations (for example, riveting, welding, cutting, burning and heating) capable of providing a source of ignition.
17. **"Immediately dangerous to life or health (IDLH)"** – 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.

18. **"Inerting"** - 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.**

19. **"Isolation"** - 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; lockout or tagout of all sources of energy; or blocking or disconnecting all mechanical linkages.
20. **"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.
21. **"LEL (Lower Explosive Limit) or LFL (Lower Flammable Limit)"** - the minimum concentration of a combined gas or vapor in the air that will ignite if there is an ignition source.
22. **"Lockout or Tagout"** – placing locks and/or tag on the energy isolating devices. Tags shall be indicated that the energy-isolated device shall not be operated until the removal of the tag. (Reference Lockout/tagout Program).
23. **"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.
24. **"Oxygen deficient atmosphere"** – an atmosphere containing less than 19.5 percent oxygen by volume.
25. **"Oxygen enriched atmosphere"** - an atmosphere containing more than 23.5 percent oxygen by volume.
26. **"PEL (Permissible Exposure Limit)"** - the time weighted average concentration of a substance that a person can be exposed to in an 8-hour shift.
27. **"Permit-required confined space (permit space)"** – a confined space that has one or more of the following characteristics:

- a. Contains or has a potential to contain a hazardous atmosphere;

- b. Contains a material that has the potential for engulfing an entrant;
- 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; or
- d. Contains any other recognized serious safety or health hazard such as, but not limited to;
  - i. Fall Hazards
  - ii. Unguarded machinery
  - iii. Extreme heat or cold
  - iv. Steam pipes or chemical lines
  - v. Hazardous noise levels
  - vi. Electrical hazards
  - vii. Presence of asbestos
  - viii. Potentially hazardous levels of dust

28. **"Permit-required confined space program (permit space program)"** – the employer's overall program for controlling, and where appropriate, for protecting employees from, permit space hazards and for regulating employee entry into permit spaces.

29. **"Permit system"** – the employer's written procedure for preparing and issuing permits for entry and for returning the permit space to service following termination of entry.

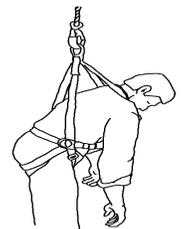
30. **"Prohibited condition"** – any condition in a permit space that is not allowed by the permit during the period when entry is authorized.

31. **"Rescue service"** – the personnel designated to rescue employees from permit spaces.

32. **"Rescue Team"** – those persons or organizations City departments have pre-designed to perform rescues from confined spaces.

33. **"Retrieval system"** – 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.

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



**NOTE: Testing enables employers to both 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.**

- 35. **“TLV (Threshold Limit Value)”** – the maximum time weighted average concentration of a substance that a person can be exposed to during an 8-hour shift (this is similar to OSHA’s PEL – Permissible Exposure Limit, but the exact values are sometimes different).
- 36. **“TLV-C (Threshold Limit Value – Ceiling)”** – the concentrations that should never be exceeded.
- 37. **“Zero Mechanical State (ZMS)”** – the mechanical potential energy of all portions of a machine or equipment which 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.

## **V. Confined Space Locations**

Examples of confined spaces include, but is not limited to, manholes, valve vaults, meter vaults, pretreatment wells/rooms, wet wells, storm sewers, valve pits, pump room located below grade, tanks, pits, channels, boilers, ventilation and exhaust ducts, tunnels, pipelines, incinerators, and any space that involves vertical entry.

A listing of confined spaces shall be located with the Safety Officer or department designee in each department this program applies to.

All Divisions are responsible for notifying the Safety Officer (or department designee) to evaluate and determine whether the space will be added to the confined space inventory.

Danger signs will be placed on confined spaces where feasible and shall read as follows or equivalent:



Or



Training will be used to notify all affected employees of the confined spaces they may encounter and should be used to empower them to evaluate for permit-required status.

All confined spaces should be considered permit-required until proven otherwise. Documentation must be obtained and maintained to defend each decision.

## **VI. Roles and Responsibilities**

### ***A. The City's Safety Program Administrator is responsible for:***

1. Reviewing and updating the City Confined Space Entry Program to conform to current OSHA standards annually.
2. Ensuring compliance with standards set forth in the program by periodic inspection of entry sites and canceling permits where unsafe conditions are present.
3. Assisting Senior Safety Officers (or department designees) with:
  - a. Providing training as set forth in the program
  - b. Identification of confined spaces
  - c. Identifying spaces that require a permit for entry

### ***A. Safety Officers and Training Specialist are responsible for:***

1. Evaluating and maintaining the Confined Space Entry Program.
2. Conducting confined space entry training for entry supervisors, entrants and attendants.
3. Developing lesson plans for the training program and maintaining training records.
4. Maintaining confined space entry permits for one (1) year.
5. Inspect and audit entry procedures quarterly.

### ***B. Division Managers (Administrators)/Supervisors will:***

1. Educate all respective employees in the requirements for entering a confined space.
2. Select, train and recommend appropriate personnel as permit-required confined space "entry supervisor, entrant and attendant." The lowest rank designated as an entry supervisor is that of first line supervisors. The Director or Assistant Direct may grant exceptions on case-by-case bases.

3. Ensure that confined spaces are being entered in accordance with the requirements contained in these procedures.
4. Provide operational control and maintenance of equipment within their respective divisions.
5. Coordinate contractor's activities that involve permit space entry.

**C. *The Facilities Division is responsible for:***

1. Calibration and maintenance of testing instruments in accordance to manufacturer's specifications and for maintaining records for one year.
2. Maintain calibration gases and test accessories to service all Department monitoring instruments.
3. Maintain operational control of other specialized equipment as required.
4. Ensure appropriate posing and labeling of confined spaces.

**D. *Entry Supervisor:***

1. Instructed in the procedures of the confined space policy and has responsibility for each confined space operations.
2. Authorized and trained to conduct atmospheric testing.
3. Trained to identify and effectuate steps necessary to have potential hazards eliminated inside and outside the permit space.
4. Trained to understand and instruct personnel in the hazards, both physical and environmental, that may be faced during entry and precautions necessary to control them.
5. Responsible for enforcing the policy.
6. Responsible for terminating the entry permit if hazardous atmosphere is detected, when adverse conditions develop, or when job is completed.
7. Responsible for responding to and initiating emergency rescue procedures as referenced in this policy.
8. Removes unauthorized individuals from the work area and restricts unauthorized entry.

9. Ensures that operations remain consistent with terms of the entry permit and that acceptable safe entry conditions are maintained.
10. Ensures entrants and attendants perform duties as required.
11. Is currently certified in first aid and CPR.
12. Responsible for establishing a communication system between entrants, attendants and dispatcher (where applicable).
13. Responsible for verifying that a permit space is safe for entry by signing permit indicating date, job location, work to be performed and prohibited conditions.
14. Responsible for furnishing the dispatcher (where applicable) with the location, entry time, and entry duration prior to entry into a permit-required confined space.

**E. Entrants:**

1. Completes a formal training course prior to entering a permit-required space. Training will include the hazards, both physical and environmental, that may be faced during entry.
2. Uses only approved tools and personal protective equipment to properly perform all duties in a safe manner inside the confined space.
3. Has the ability to communicate with the attendant at all times.
4. Alerts the attendant whenever an entrant detects a dangerous or prohibited condition, procedure, equipment, injury or impairment, which may affect the safe performance of their duties.
5. Exits from the space whenever:
  - a. An atmospheric monitor alarm sounds;
  - b. Any warning sign, symptom of exposure or exposure to a dangerous situation is recognized;
  - c. An evacuation is activated by an attendant or supervisor;
  - d. Any prohibited condition is recognized
6. Maintains current certification in first aid and CPR.

**F. Attendants:**

1. Understand the hazards, both physical and environmental, that may be faced during entry.
2. Continuously maintain an accurate count of authorized entrants in the permit space and remains outside the permit space during entry operations until relieved by another attendant.
3. Can continually communicate with entrants to monitor entrant status and to alert entrants if evacuation is needed.
4. Performs no duties that might interfere with the attendant's primary duty to monitor and protect the authorized entrants.
5. Monitors activities inside and outside the space to determine if it is safe for entrants to remain in the space and orders the entrants to evacuate the permit space immediately under any of the following conditions:
  - a. An atmospheric monitor alarm sounds;
  - b. A prohibited condition is detected;
  - c. Behavioral effect of hazard exposure in an entrant(s) are detected;
  - d. A situation outside the space that could endanger entrant(s) is identified;
  - e. The attendant cannot effectively and safely perform all the duties required.
6. Does not allow unauthorized individuals in the area of the entry operation or entrance into the space.
7. Make certain that all aspects of the entry procedure are completed and correct. This includes the permit system, equipment and its integrity, placing emergency rescue services on standby, air monitoring, etc.
8. Summons rescue and other emergency services as soon as the attendant determines that entrants may need assistance to escape from permit space hazards or medical assistance following self-rescue.
9. Maintains communication with department dispatcher (where applicable).
10. Maintains current certification in first aid and CPR.

### ***G. Contractor Requirements:***

**These procedures apply to contract jobs and are to include long-term contracts.**

1. Inform the contractor of the type, location of all permit-required confined spaces at the work site.
2. Inform the contractor that permit space entry can only be accomplished with compliance to OSHA standard (29 CFR 1910.146).
3. Inform the contract of hazards and conditions identified with the space that make it permit-required.
4. Inform the contractor of procedures and/or precautions used to protect employees.
5. Coordinate any entry operations in which both City personnel and the contractor will both enter.
6. Debrief the contractor after entry operations are completed to note any hazards encountered in order to update the program.
7. Do not lend confined space entry and rescue equipment to contractors.

### ***H. Authorization and Training***

1. No employee will be allowed to enter a Permit-Required Confined Space as an entrant, attendant, or entry supervisor without specific authorization.
2. Authorization can only be obtained by successfully completing a Permit-Required Confined Space Entry training program approved by the City's Safety Program Administrator.

## **VII. Hazard Identification, Elimination and Control**

There are many hazards that may be encountered in a confined space. Examples are atmospheric; engulfment, configuration hazards, and other serious recognized hazards. The first objective of this confined space program is to eliminate hazards to protect employees. When all hazards cannot be eliminated, control measures will be instituted to protect all personnel (employees and contractors where applicable).

## A. Identification, Elimination and Control of Hazards:

1. Means, procedures, and practices must be implemented as necessary for safe permit space entry operations, including, but not limited to, the following:
  - Isolating the permit space through lock out/tag out, or other means if necessary;
  - Purging, inerting, flushing, or ventilating the space as necessary to eliminate/control atmospheric hazards;
  - Providing pedestrian, vehicle, or other barriers as necessary to protect entrants from external hazards;
  - Ensuring trenching/excavation protection is implemented in order to protect employees;
  - Verifying that conditions in the permit space are acceptable for entry and work throughout the duration of the entry permit.

## B. Atmospheric Hazards & Control:

1. All confined spaces will be tested for atmospheric hazards before and continuously during entry. In order to accomplish this:
  - Air monitors must be properly tested, calibrated and maintained according in to manufactures instructions;
    - Air monitors must be field-tested before each use;
    - The air must be monitored at the opening and at different levels;
    - If feasible, a continuous sampling monitor is to be worn in the space by at least one entrant in each area where any work is taking place.
2. Atmospheric Monitoring – The following must be tested for according to the criteria and order listed. If any of the criteria below is not met, the atmosphere is considered to be Immediately Dangerous to Life and Health (IDLH) and will not be entered.



**The oxygen concentration must be above 19.5 % and below 23.5 %. Flammable gas, vapor, or mist must be less than 10 % of its lower explosive limit (LEL).**

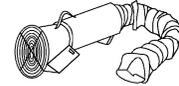
Toxic atmospheres must be identified:

- Hydrogen Sulfide (H<sub>2</sub>S) – must be less than 10 ppm.
- Carbon Monoxide (CO) – must be less than 35 ppm.
- Any other toxic substances that may potentially exist. OSHA's Permissible Exposure Limits (PEL's) should be referred to as needed.

**If there is any doubt of the IDLH status of the space, it is assumed**

**IDLH and will not be entered.**

3. In trenching and excavation operations, atmospheric monitoring will be accomplished initially and continuously when the space is 4 or more feet deep and/or conditions present potential for a hazardous atmosphere. Examples include working on waste water lines, vehicles running next to trench, areas where contaminated soil exists, adjacent hazards such as a landfill, etc.
4. Ventilation to Control Atmospheric Hazards – Continuous forced air ventilation shall be used, as follows:



- An employee may not enter the space until the forced air ventilation has controlled any hazardous atmosphere (confirmed by documented testing);
- The forced air ventilation shall be so directed as to ventilate the immediate areas where an employee is or will be present within the space and shall continue until all employees have left the space;
- The air supply for the forced air ventilation shall be from a clean source and may not increase the hazards in the space;
- The atmosphere within the space shall be tested (section 4.2) to ensure that the continuous forced air ventilation is preventing the accumulation of a hazardous atmosphere.

**NOTE: Control of atmospheric hazards through forced air ventilation does not constitute elimination of hazards.**

**VII. Confined Space Entry Procedures:**

**A. Identifying all Confined Spaces**

1. All confined spaces located within a facility or under the facility's control should be identified. Once the space has been identified as Confined, the City's Safety Program Administrator or the Senior Safety Officer (or department designee) will determine if a permit is required.
2. All employees shall be made aware of these confined spaces through training or instruction provided by supervisors or their designated representatives. The City's Safety Program Administrator can provide assistance in this training.

**B. Preventing Unauthorized Entry**

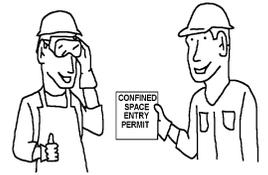
1. Supervisors or their designated representatives shall instruct all employees that entry into a permit-required confined space is prohibited without an authorized

permit.

2. Supervisors or their designated representatives shall instruct all employees to list their names on the authorized permit before they will be allowed to enter a confined space.

### C. Entry Permit:

1. A permit shall be completed for each permit-required entry.
2. The entry supervisor shall review each entry permit and ensure conditions are acceptable and no prohibited conditions exist before entry is made. The entry supervisor shall then sign the permit.
3. No entry is permitted when an IDLH condition exists.
4. The duration of the permit may not exceed the time required to complete the assigned task or job identified on the permit *and* no permit shall exceed 8 hours.
5. Each affected employee will review and initial the permit (beside their listed name).
6. The permit shall remain at the site and be available to all affected personnel.
7. The permit must be canceled when entry has been completed or a prohibited or unsafe condition arises in or near the space.
8. Permits must be retained for a minimum of one year from the date of issue for review.



### D. Entry Procedures:

1. Identify the work to be performed and individuals on the entry team identifying their assigned roles (entry supervisor, attendant, etc.).
2. Contact rescue services to activate standby status.
3. Eliminate any condition(s) that may cause removal of an entrance cover unsafe.
4. Guard the opening of the space to eliminate objects from falling on entrants.
5. Determine the types of hazards associated with the space and obtain necessary equipment for safe entry.

6. Review all hazards and requirements for safe entry with all affected personnel.
7. Test internal atmosphere throughout the space following testing procedures using calibrated monitor(s) in this order:
  - Oxygen content,
  - Flammable gases and vapors,
  - Toxic contaminants.
8. Protect employees from engulfment from contents, configuration hazards associated with the space to be entered or any other recognized hazard where applicable.
9. Complete the confined space entry permit.
10. Each individual involved in the entry will review and verify the permit for completeness and accuracy. Members of the entry team must initial next to their printed name on the permit prior to entry.
11. Maintain continuous communication between entrants and attendants.
12. Note pertinent comments on conditions that may enhance safety of future entry operations on the permit.

#### **E. Alternate Entry Procedures:**

Confined spaces can be entered without a permit or attendants provided that the space can be maintained in a safe condition for entry by mechanical ventilation alone as provided by 1910.146 (c)(5)(i). A permit-required space may be entered under alternate procedures if:

1. The specific space is specified as a candidate for alternate entry procedure consideration. The Senior Safety Officer (or department designee) is authorized to specify which spaces would qualify.
2. It can be demonstrated that the only hazard posed is the actual or potential hazardous atmosphere and continuous forced air ventilation alone is sufficient to maintain the permit-required space for entry.
3. Control of atmospheric hazards through continuous forced air ventilation can be documented through a history of monitoring and inspection data. Discretion must be utilized to ensure measurements are taken at the anticipated peak times, etc.

4. If entry is required to obtain the air monitoring data, permit-required confined space requirements must be followed.
5. The data must be made available to each employee involved in the entry operation.
6. The space is then verified to be a candidate for alternate procedures and atmospheric history shows no hazardous atmosphere.
7. Conditions making it unsafe to remove an entrance cover shall be eliminated before the cover is removed.
8. Guard the opening of the space to prevent fall hazard to entrants and to keep objects from falling on entrants.
9. Before an employee enters the space, the internal atmosphere shall be tested as specified in the entry procedures and air monitoring sections of these procedures.
10. There may be no hazardous atmosphere within the space whenever any employee is inside.
11. Continuous forced air ventilation shall be used as specified in the air monitoring section of these procedures.
12. The atmosphere within the space shall be tested and continuously monitored to ensure that the continuous forced air ventilation is preventing the accumulation of a hazardous atmosphere.
13. Documentation must be completed verifying these measures are completed and the space is safe for entry.
14. Documentation is completed before entry, available and reviewed with personnel involved.
15. If a hazardous atmosphere is detected during entry:
  - Each employee shall leave the space immediately;
  - The space shall be evaluated to determine how the hazardous atmosphere developed; measures shall be implemented to protect employees from the hazardous atmosphere before subsequent entry takes place.

#### **F. Reclassification:**

A space classified as a permit-required confined space may be reclassified as a non-

permit confined space under the following procedures and conditions:

1. The space is a candidate for reclassification consideration. The Senior Safety Officer (or department designee) is/are authorized to specify candidate sites.
2. If the permit space poses no actual or potential atmospheric hazards and;
3. If all hazards within the space are eliminated without entry into the space,
  - If it is necessary to enter the permit space to eliminate hazards, entry shall be performed according to permit-required confined space entry procedures.
4. If hazards arise within a space that has been reclassified to a non-permit space:
  - Each employee in the space shall exit the space.
  - The space will be evaluated to determine whether it must be reclassified as a permit space.
  - Employees may re-enter only if the appropriate procedures are followed to ensure safety.
5. Documentation will be kept that contains the date, location of the space, verification determining no atmospheric or other hazards, and the signature of the person making the reclassification determination.
6. Reclassification certification shall be made available and reviewed with each employee involved.

**NOTE: Control of atmospheric hazards through forced air ventilation does not constitute elimination of the hazards and does not allow for reclassification.**

### **VIII. Rescue and Emergency Services**

The following requirements apply to personnel who enter permit spaces to perform rescue service:

1. Ensure that each member of the rescue service is provided with, and is trained to use properly, the personal protective equipment and rescue equipment necessary for making rescues from each of the permit spaces to be entered.
2. Each member of the rescue service shall be trained to perform the assigned rescue duties. Each member of the rescue service shall also receive the training required of authorized entrants under the "duties of authorized entrants" section of this instruction.
3. Each member of the rescue service shall practice making permit space rescues at

least once every 12 months, by means of simulated rescue operations in which they remove dummies, mannequins, or actual persons from the actual permit spaces or from representative permit spaces. Representative permit spaces shall, with respect to opening size, configuration, and accessibility, simulate the types of permit spaces from which this company anticipates rescue is to be performed.

4. Each member of the rescue service shall be trained in basic first aid and in CPR. At least one member of the rescue service holding current certification in first aid and in CPR shall be available.
5. If rescue personnel, not employed by the City of Newport News are designated to perform permit space rescue this employer shall:
  - Contact the rescue service to be used, prior to entry into a confined space to ensure their availability if needed;
  - Inform the rescue service of the hazards they may confront when called on to perform rescue;
  - Provide the rescue service with access to all permit spaces from which rescue may be necessary so that the rescue service can develop appropriate rescue plans and practice rescue operations.
6. To facilitate non-entry rescue, retrieval systems or methods shall be used whenever an entrant enters a permit space, unless the retrieval equipment would increase the overall risk of entry or would not contribute to the rescue of the entrant. Retrieval systems used shall meet the following requirements:
  - Each authorized entrant shall use a chest or 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 may be used in lieu of the chest or full body harness if it is demonstrated that the use of a chest or full body harness is infeasible or creates a greater hazard and that the use of wristlets is the safest and most effective alternative.
  - The other end of the retrieval line 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. A mechanical device shall be available to retrieve personnel from vertical type permit spaces that are more than 5 feet deep.
7. If an injured entrant is exposed to a substance for which a Material Safety Data Sheet (MSDS) or other similar written information is required to be kept at the worksite, that MSDS or written information shall be made available to the medical facility treating the exposed entrant.

## **IX. Training**

The employer shall provide training so that all employees whose work is regulated by this section acquire the understanding, knowledge, and skills necessary for the safe performance of the duties assigned under this section.

1. Training shall be provided to each affected employee:

- Before the employee is assigned duties;
- Before there is a change in assigned duties;
- Whenever there is a change in permit space operations that presents a hazard about which an employee has not previously been trained;
- Whenever there is reason to believe either that there are deviations from the permit space entry procedures or that there are inadequacies in the employee's knowledge of confined space entry safety;
- Annually.



2. Training shall establish employee proficiency in duties required and shall introduce new/revised procedures.

3. Non-entry departments will provide employees awareness training to cover identification of confined spaces and department policy.

4. Documentation of training and authorization shall contain the employee's printed name and signature, the printed names and signatures or initials of the trainers, the dates of training and content. Documentation records shall be available for review by any affected employee.

## **X. Recordkeeping**

1. The Safety Officer (or department designee) shall establish and maintain a file of all Entry Permits for one year.

2. Training Attendance Rosters will be utilized throughout the City and will be maintained for five (5) years.