



NORTH CAROLINA Office of
State Human Resources

OFFICE OF STATE HUMAN RESOURCES

NUMBER: CSP-1

TOTAL PAGES: 22

SUBJECT: Confined Space Program

Effective Date:

Revision Date:

Revision #:

RELATED LEGISLATION:

North Carolina Occupational Safety and Health Standards for General Industry: 29 CFR 1910.146.

Purpose:

To provide a means by which employees can be protected from the hazards associated with entry into permit required confined spaces, and to develop procedures by which employees shall enter such spaces.

Policy:

- I. All spaces owned or operated by the employer that meet the definition of permit required confined spaces shall be identified and appropriately marked, and access to such spaces shall be controlled.
- II. Employees are prohibited from entering any space meeting the definition of permit required confined space, unless the following conditions are met:
 - A. The employer determines that employees must enter permit required confined spaces to perform the mission of the Unit and/or the duties of the employee.
 - B. The employees are trained in the duties under this policy which they are to perform.
 - C. The space is rendered safe for entry by:
 1. Issuance and compliance with the conditions of a permit;
 2. The space is reclassified as a non-permit space; or

3. Alternate Entry Procedures are performed.

III. Permits issued under the procedures in this policy shall be limited in duration to no longer than eight hours.

Definitions:

I. Confined Space Definitions

A. Confined Space - a space that meets all three of the following conditions:

1. Large enough for a person to bodily enter and perform work;
2. Has only means of entry/egress that requires a person to enter by a means other than normal walking, such as crawling, squatting, climbing, bending, or use of devices; and
3. Is not designed for people to continually occupy the space.

B. Non-Permit Space - a confined space that does not contain any actual or potential hazards capable of causing death or serious physical harm.

C. Permit Required Confined Space, Permit Space - a confined space which has one or more of the following characteristics:

1. Contains or has the potential to contain a hazardous atmosphere;
2. Contains a material that has the potential for engulfing an entrant;
3. Has an internal configuration that could trap or asphyxiate an entrant, such as inwardly converging walls or a floor that slopes downward and tapers to a smaller cross-section; and/or
4. Contains any other recognized serious safety and/or health hazard.

II. Person Definitions

A. Attendant - the trained individual stationed outside the permit space who monitors the authorized entrants and who performs all attendant duties.

B. Entrant - the trained individual who enters the permit space.

C. Entry Supervisor - the trained individual with the responsibility to:

1. Assure that acceptable entry conditions are present within a permit space under his/her jurisdiction;
2. Issue a permit authorizing entry;
3. Overseeing entry operations; and

4. Terminating the entry and permit.

III. Hazard Definitions

- A. 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.
- B. Hazardous atmosphere - an atmosphere that may expose employees to the risk of death, incapacitation, impairment of the ability to escape unaided from a permit space, injury, or acute illness. Hazardous atmospheres may be created by conditions such as, but not limited to:
 1. Flammable gas, vapors, or mists in excess of ten percent of the lower flammable limit (LFL).
 2. Airborne combustible dusts at a concentration that:
 - a. Meets or exceeds its LFL; and/or
 - b. Obscures vision at a distance of five feet or less.
 3. Atmospheric oxygen concentration below 19.5 percent or above 23.5 percent.
 4. Atmospheric concentrations at or above the Permissible Exposure Limit (PEL) of substances identified in Subpart Z of 29 CFR 1910.
 5. Any other atmospheric conditions which are immediately dangerous to life and health.
- C. Immediately Dangerous to Life and Health (IDLH) - any condition that:
 1. Poses an immediate or delayed threat to life;
 2. Would cause irreversible adverse health effects; and/or
 3. Would interfere with an individual's ability to escape unaided from a permit space.

IV. Hazard Control Definitions

- A. Conditions of Entry - the conditions that must exist in a permit space to allow employees to safely enter and perform duties within the space.
- B. Blanking, Binding - absolute closure of a pipe, line, or duct by fastening a solid plate 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.
- C. Double Block and Bleed - the closure of a line, duct, or pipe by closing and

locking/tagging out two in-line valves, and opening and locking/tagging out a drain or vent in the line between the two closed valves.

- D. Inerting - the displacement of the atmosphere in a permit space by a noncombustible gas to such an extent that the resulting atmosphere is noncombustible, producing an IDLH oxygen-deficient atmosphere.
- E. Isolation - the complete removal of a permit space from service and the complete protection of that space from the release of energy or material.
- F. 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.

V. Permit Definitions

- A. Alternate Entry Procedures - the use of continuous forced air ventilation and atmosphere monitoring in lieu of a permit to enter a permit required confined space that:
 - 1. Has an actual or potential hazardous atmosphere that can be demonstrably controlled by continuous forced air ventilation alone; and
 - 2. Has no other hazards of any kind.
- B. Emergency - any occurrence (including the failure of hazard control or monitoring equipment) or event, internal or external to the permit space, which could endanger entrants.
- C. Entry - the action of breaking the plane of an opening of a permit space with any part of the body.
- D. Permit - the written or printed document authorizing entry into a permit space and designating the requirements for entry.
- E. Prohibited Condition - any condition in a permit space that is not allowed by the permit during the period when entry is authorized.
- F. Testing - the process by which the hazards that may confront entrants are identified and evaluated. This term includes the specification of tests that are to be performed in the permit space.

VI. Other Definitions

- A. Contract for Work - contracts initiated by the employer.

Procedures:

- I. Employer Controlled Confined Spaces
 - A. Identification of Confined Spaces

1. The employer shall identify each space under their jurisdiction which meets the definition of confined space, if any exist, and shall maintain a list of such spaces.
 2. The employer shall determine if the confined space meets the definition of permit required confined space.
 - a. Each confined space on the list shall be designated as a non-permit or permit space.
 - b. The hazards of each permit space shall be catalogued.
 3. The list shall be distributed to all affected managers and employees.
 4. The employer shall provide for a Danger sign to be posted at the means of ingress to each identified confined space.
 - a. Signs shall meet the requirements of Danger signs.
 - b. The legend on the signs for permit spaces shall state: "PERMIT REQUIRED CONFINED SPACE. DO NOT ENTER WITHOUT AUTHORIZATION AND PERMIT".
- B. The employer of employees whose job duties require entry into identified confined spaces may create specific procedures to enter confined spaces, if all elements of 29 CFR 1910.146 are met.
- C. The supervisor with jurisdiction over employees who are required to enter an identified confined space shall:
1. Receive training as an Entry Supervisor.
 2. Determine whether employees enter permit spaces, or perform work within non-permit spaces that may cause the space to meet the definition for permit required confined space during the work activities. If so, the supervisor shall:
 - a. Select an Entry Supervisor(s) to oversee entry activities, and provide for training of the employee(s);
 - b. Ensure that affected employees receive training as entrants;
 - c. Procure the necessary equipment to perform the tests required for entry;
 - d. Ensure that an adequate number of employees have received training as attendants;
 - e. Contact the local emergency rescue agency and establish assurance that they will perform rescue coverage during entry operations;

- i. The supervisor, with the assistance of the company management as necessary, shall ensure that the rescue services are adequately trained and equipped to perform rescue operations from the space in compliance with safety regulations;
 - ii. The supervisor shall procure this assurance in writing;
 - iii. The supervisor should invite rescue personnel to the site to pre-plan rescue operations; and
 - iv. If the rescue services cannot or will not perform such services, the supervisor or employee shall develop and implement a means to perform rescue for the space.
- D. For each entry into a non-permit space, the designated Entry Supervisor shall review the work to be performed.
 1. If the work will introduce a hazard into the space that will cause it to meet the definition for permit required confined space, the supervisor shall:
 - a. Temporarily reclassify the space as a permit space;
 - b. Follow the procedures for entry into a permit space;
 - c. Upon termination of the permit, reinspect the space and take whatever actions necessary to remove the created hazards; and
 - d. Reclassify the space as a non-permit space.
 2. If the work does not introduce a hazard, the Entry Supervisor may authorize entry into the space.
- E. For each entry into a permit space, the designated Entry Supervisor shall:
 1. Perform the pre-entry duties of the entry supervisor on the permit space to be entered;
 2. Prepare an entry permit, reclassify the space as a non-permit space, or authorize alternate entry procedures, in compliance with the relevant procedures of this section;
 3. Perform the post-entry duties of the entry supervisor;
 4. Collect the permit from the attendant at the end of entry, or prepare the documentation for reclassification or alternate entry; and
 5. Maintain the permit or documentation for the required retention period.
- F. For the duration of each entry into a permit space, the entrants and attendants shall perform the duties outlined in these procedures, and shall return the permit or

documentation to the Entry Supervisor upon termination of entry.

G. Contractors

1. The employer shall ensure that every contract for work within an identified permit space, or work within a non-permit space that will introduce a reclassifying hazard, shall:
 - a. Apprise the contractor that the space is a permit-required confined space and of the hazards within the space;
 - b. Require the contractor to control entry into the space by a permit system meeting the requirements of 29 CFR 1910.146; and
 - c. Require the contractor to eliminate any temporary hazards created by the work, or notify the supervisor responsible for the space of any permanent hazards created by the work.
2. The Contractor or its designee shall notify the responsible supervisor prior to entry.
 - a. The supervisor shall notify any employees near or affected by entry; and
 - b. If employees shall enter the space with contracted employees, the supervisor shall ensure that entry operations are coordinated with the contractor or designee to assure that:
 - i. All entrants of both employers can be accounted for during the entry;
 - ii. The work of one employer does not endanger the employees of the second employer;
 - iii. There is a properly trained attendant in place whenever employees of either employer have entered the space; and
 - iv. Temporary hazards are eliminated, and the supervisor is apprised of new permanent hazards.
3. The Contractor or designee shall meet with the supervisor after completion of the entry to provide notification of:
 - a. Any new permanent hazards created by the work; and/or
 - b. Any unidentified hazards encountered during the entry.

H. Re-Evaluation

1. The employer shall re-evaluate identified confined spaces within their jurisdiction to determine if such spaces should be added, deleted, or reclassified.

2. Re-Evaluation shall be performed:
 - a. After notification by the responsible supervisor of a change in the hazards of a confined space;
 - b. After review by the employer during the annual inspection; and
 - c. After notification of changes in hazards in a confined space by employees, managers, or any other source.

II. Field Staff (e.g. service/repair technicians)

- A. Each manager shall determine by job title any field staff that may enter permit required confined spaces, and shall document the determination.
- B. Managers of employees authorized to enter permit spaces shall:
 1. Procure the equipment necessary for entry testing and develop procedures to provide entry supervisors with the equipment as necessary;
 2. Designate and train Entry Supervisors, Attendants, and Entrants.
 - a. Field employees entering a permit space may be both the Entry Supervisor and the Entrant, or the Entry Supervisor and the Attendant.
 - b. Field employees serving as an Attendant for a permit space entry shall not be an Entrant during that entry unless relieved by another authorized attendant.
 3. Designate and train a Program Coordinator responsible for maintaining the required canceled permits and documentation.
 4. Establish procedures to provide for rescue operations.
 - a. The manager may contact emergency rescue personnel in each location employees are likely to encounter permit spaces, and procure in writing assurance that the emergency service:
 - i. is trained in rescue procedures for the type of space employees enter;
 - ii. is equipped to perform rescue from the type of space; and
 - iii. if contacted prior to entry by the entry supervisor, will indicate whether they will or will not provide rescue coverage during that entry.
 - b. The manager may elect to develop procedures requiring Entry Supervisors to contact emergency services prior to each entry to procure coverage. Such procedures shall ensure that the entry supervisor determines that the contacted rescue services are properly trained and equipped to perform rescue in the specified space, are aware of the entry and exit times, agree to provide rescue coverage for that time, and will notify the attendant should rescue

coverage end for any reason.

- c. The manager may elect to establish other means of guaranteeing and certifying rescue coverage. Such procedures shall address training, practice, equipment, and other relevant issues.
- C. Authorized employees encountering a permit space which they need to enter to carry out their job duties shall have a trained Entry Supervisor to coordinate with the entity controlling the space prior to entry.
1. The Entry Supervisor shall perform the pre-entry duties for the permit space in concert with the controlling entity.
 - a. If the controlling entity has a permit required confined space program:
 - i. The Entry Supervisor shall conform to the requirements of that program where they do not conflict or provide less protection than our procedures;
 - ii. The Entry Supervisor may authorize the use of an adequately trained attendant provided by the controlling entity, upon provision or verification of training. The attendant's name, position, and employer shall be recorded on the permit;
 - iii. The Entry Supervisor may accept actions taken by the controlling entity to authorize Alternate Entry Procedures or to reclassify the space as non-permit, after verifying and documenting the effectiveness of such actions. The Entry Supervisor may accept a copy of the controlling entity's documentation to meet the documentation requirement;
 - iv. The Entry Supervisor may accept the controlling entity's rescue procedures if the entity agrees, but must verify that rescue personnel are notified prior to entry;
 - v. Upon request by the controlling entity, the Entry Supervisor shall obtain and provide the following documents as proof of program and entrant training:
 - (A) A copy of this policy;
 - (B) A copy of our training protocol for Entrants;
 - (C) A copy of the entrant's training documentation; and
 - (D) The name and telephone number of the employer contact.
 - b. If the controlling entity does not have a permit required confined space program or has not identified the space as permit required:
 - i. If the controlling entity agrees to take the actions necessary for

reclassifying a space to non-permit, the Entry Supervisor may oversee such actions, test their effectiveness, and reclassify the space;

- ii. If conditions for Alternate Entry Procedures can be met, the Entry Supervisor may verify the achievement of the conditions and authorize Alternate Entry Procedures;
 - iii. If the controlling entity agrees to supply and require an individual to perform the functions of an Attendant, and if the Entry Supervisor can meet the conditions outlined in this policy for Special Attendants, the Entry Supervisor may authorize the individual as the attendant for the entry and prepare the required documentation.
2. The Entry Supervisor shall prepare and issue the permit, or prepare the required documentation for Alternate Entry Procedures or reclassification.
 3. The Entrant and Attendant shall follow the procedures for their classification for the duration of the entry, and return the permit or documentation to the Entry Supervisor at completion of the entry.
 4. The Entry Supervisor shall perform post-entry duties in concert with the controlling entity.
 - a. If the controlling entity has a permit required confined space program, the Entry Supervisor shall allow the controlling entity to perform the post-entry activities required by that program;
 - b. If the controlling entity does not have a permit required confined space program, the Entry Supervisor shall oversee the return of the space to the condition prior to entry.
 5. The Entry Supervisor shall immediately meet with the controlling entity to provide information on:
 - a. Hazards within the space of which the controlling entity was unaware, and/or
 - b. Any unexpected problems occurring during entry procedures.
 6. The Entry Supervisor shall submit the canceled permit and/or any documentation prepared as a result of entry to the Program Coordinator, who shall retain the document for the required retention period. The Entry Supervisor shall also report any emergencies, evacuations, or other unexpected events related to the entry, which shall be recorded in writing by the Program Coordinator (designated by the employer).

III. Entry Procedures for Permit Spaces

A. Pre-Permit Duties of the Entry Supervisor

1. The Entry Supervisor shall record on the permit a descriptive identification of the

- permit space and its location.
2. The Entry Supervisor shall record on the permit the date of entry, the time of issuance, and the time of expiration. No permit shall be issued for a period longer than eight hours.
 3. The Entry Supervisor shall record on the permit the reason for the entry.
 4. The Entry Supervisor shall survey the permit space without entry and review the work to be performed, to identify the existing or potential hazards. Such hazards shall be recorded on the permit.
 - a. Gases or vapors which could displace the oxygen or processes which could consume oxygen;
 - b. Flammable gases;
 - c. Any other chemicals, gases, fumes, or mists which could be present or released by entry activities;
 - d. A potential for low levels of oxygen from a lack of adequate ventilation;
 - e. A potential for high levels of oxygen;
 - f. Liquids or flowable solids which could engulf an entrant;
 - g. Inwardly converging walls, sloped floors that taper to a smaller cross-section, pits or holes in the floor into which an entrant could stumble into and become wedged, and/or other characteristics of the configuration of the space which could trap or asphyxiate an entrant;
 - h. Radiation;
 - i. Bare, exposed, or ungrounded conductive parts of electrical equipment, machinery, wiring, fixtures, or installations;
 - j. Unguarded points of operation or moving parts of machinery; and
 - k. Any other recognized hazard that could result in accidental injury or occupational illness requiring treatment greater than first aid.
 5. The entry supervisor shall determine the actions necessary prior to entry to eliminate or control the hazards, and shall record them on the permit.
 - a. Notification of the selected rescue personnel shall be required for each entry.
 - b. Atmospheric Hazards.
 - i. If a potential or actual atmospheric hazard exists, testing shall be required.

- (A) Oxygen, flammable gas, and carbon monoxide tests shall be conducted.
 - (B) The Entry Supervisor shall obtain and list the Permissible Exposure Limits (PEL) for each identified air contaminant.
 - (C) The Entry Supervisor shall test for each identified air contaminant.
 - ii. The Entry Supervisor shall determine if the atmospheric hazard can be eliminated or controlled by purging, venting, inerting, continuous forced air ventilation, or combination.
 - iii. If the only hazard in a space is a hazardous atmosphere and Alternate Entry Procedures are the desired means of entry, forced air ventilation is required.
 - c. Engulfment Hazard elimination or control by blanking, binding, double block and bleed, line braking, or other methods.
 - d. Configuration Control means. Configuration hazards usually cannot be eliminated.
 - e. Other Serious Hazards elimination or control by lock-out/tag-out or other means.
 - f. The need for traffic control devices to isolate the permit space from vehicular and pedestrian traffic.
6. The Entry Supervisor shall determine and record the required equipment for entry.
- a. Equipment for the Attendant to summon rescue and the Entry Supervisor is required for all permit entries.
 - b. Equipment designed to test oxygen, flammable gases, and carbon monoxide shall be required for all permit spaces with hazardous atmospheres.
 - c. Equipment designed to test levels of identified airborne contaminants shall be required where such have been identified.
 - d. A forced air ventilation system is required for Alternate Entry Procedures, and shall be required if determined by the Entry Supervisor.
 - e. Personal protective equipment is required where hazards cannot be effectively eliminated or controlled.
 - f. Traffic control equipment is required if the permit space is not effectively isolated from vehicle or pedestrian traffic.
 - g. Mechanical rescue equipment is required unless its use creates a greater

hazard or would not effectively contribute to rescue.

- i. Body Harness with retrieval line attached at the upper back should be used whenever feasible.
 - ii. Wristlets may be used where body harnesses are not feasible.
 - iii. Mechanical retrieval devices shall be used for vertical entries into spaces deeper than five feet. Mechanical devices or fixed point connection may be used otherwise.
 - h. Communication equipment is required where entrants will be out of voice range with the Attendant.
 - i. Other equipment shall be selected as need requires.
7. The Entry Supervisor shall identify the authorized entrants and at least one attendant, and shall record their names on the permit.
8. The Entry Supervisor shall determine the type of entry that is allowed.
 - a. If the pre-entry survey proves that the only hazard existing in the space is atmospheric and continuous forced air ventilation is provided, the Entry Supervisor may authorize Alternate Entry Procedures under stipulation that:
 - i. The initial atmospheric tests indicate the atmosphere meets the entry requirements;
 - ii. Forced Air Ventilation continues for the duration of the entry; and
 - iii. The Attendant performs atmospheric tests once per hour and records them on the Air Monitoring Log on the permit.
 - b. If the pre-entry survey proves that there are no atmospheric or configuration hazards in the permit space, and that all other identified hazards can be eliminated (as opposed to controlled) from outside the space prior to entry, the Entry Supervisor may reclassify the space as Non-Permit contingent upon the completion of all hazard elimination activities.
 - c. If a non-permit entry is approved, the employee designated as Attendant on the permit shall serve as Lead Entrant. The permit shall serve as the required documentation.
 - d. If no other type of entry is obtainable or selected, entry shall be by the permit process.
9. The Entry Supervisor shall indicate any other permits issued for simultaneous work within the space, and shall indicate the means to contact rescue personnel.
10. The Entry Supervisor shall sign and issue the permit, effective upon the date issued

and contingent upon completion of all pre-entry activities, and expiring on the date indicated on the permit.

B Pre-Entry Actions

1. The Entry Supervisor shall ensure that required equipment is procured and available, and that pre-entry actions are completed prior to entry. The Entry Supervisor may perform these duties or may delegate them to the Attendant and/or other authorized Entrants.
2. Each pre-entry requirement successfully met shall be checked off in the block provided on the permit. When all requirements are completed, the responsible employee shall verify the actions by signing the permit.
3. Required atmospheric testing shall be performed in the order indicated below after the pre-entry actions to address atmospheric hazards have been performed. Entry may proceed only if the tests indicate:
 - a. The percentage of oxygen in the permit space is between 19.5% and 23.5%.
 - b. The percentage of flammable gases is at or lower than 10 percent of the Lower Flammable Limit.
 - c. The parts per million parts (ppm) of carbon monoxide is at or lower than 17.
 - d. The amount of other identified air contaminants is/are less than one-half the PEL. Where more than one air contaminant is observed, those contaminants will be reviewed for additive effects.
4. The permit shall be posted at the point of entry into the space, and each authorized employee shall review it to become familiar with the hazards of the space and the acceptable entry conditions.

C. Entry

1. Entrants shall:
 - a. Enter the space and perform the assigned work as expediently as possible.
 - b. Wear and use all equipment required by the permit.
 - c. Notify the Attendant or Lead Entrant periodically or upon request that all is well.
 - d. Immediately evacuate the space and alert the Attendant or Lead Entrant whenever any of the following occurs:
 - i. The development of a condition not in compliance with the permit;
 - ii. The development of a sign or symptom of exposure to a dangerous

situation;

iii. Failure of any required equipment; and/or

iv. The Attendant or Lead Entrant orders an evacuation.

2. Lead Entrants shall:

a. Maintain awareness of the location of the entrants, either inside or outside of the permit space;

b. If entry is by Alternate Entry Procedures, perform hourly atmospheric monitoring of the space and record on the Gas Monitoring Log of the permit;

c. Order an immediate evacuation upon becoming aware of:

i. Any sign or symptom of exposure to a dangerous situation;

ii. Any development of a condition not in compliance with the permit; and/or

iii. Failure of any required equipment.

3. Attendants shall:

a. Station themselves outside the permit space at the opening to the space, and remain in place throughout the duration of the entry or until relieved by another authorized Attendant;

b. Perform no other duties beyond those stated for Attendants;

c. Maintain an accurate count of entrants within and without the space, by use of the Entry Log on the permit;

d. Perform hourly atmospheric monitoring of spaces containing hazardous atmospheres, and record on the Gas Monitoring Log on the permit;

e. Communicate with entrants by voice or communication equipment periodically to assure that all is well;

f. Order an immediate evacuation of the space:

i. Upon becoming aware of the development of a sign or symptom of an exposure to a dangerous situation;

ii. Upon becoming aware of the development of a condition out of compliance with the permit;

iii. Upon failure of an entrant to answer an attempt at communication; and/or

- iv. If unable to continue the performance of functions as an Attendant.
 - g. Summon rescue services if needed;
 - h. Warn unauthorized persons away from the permit space; and
 - i. Summon the Entry Supervisor if unauthorized persons refuse to leave the space.
4. The Entry Supervisor shall remove unauthorized persons from the permit space, as needed.

D. Completion of Entry

1. The Attendant or Lead Entrant shall assure that all entrants have exited the space.
2. If the space was evacuated prior to completion of work:
 - a. The Attendant or Lead Entrant shall immediately terminate the permit by checking the appropriate box and describing the reasons for evacuation on the permit, then contacting the Entry Supervisor;
 - b. The Entry Supervisor shall:
 - i. Immediately notify the employee's supervisor of any injured or overexposed employee;
 - ii. Determine if reentry is required to complete work, eliminate a created hazard, or return the space to normal operation.
 - (A) If reentry must be performed:
 - (1). Resurvey the space to determine the cause of the evacuation; and
 - (2). Issue another permit which includes the elimination or control of the hazard causing the evacuation. Alternate Entry Procedures and Reclassification to Non-Permit Space shall not be approved.
 - (B) If reentry is unnecessary:
 - (1) Oversee the completion of the post-entry activities indicated on the permit; and
 - (2) End the entry activities.
3. If the entry was successfully completed, the Attendant or Lead Entrant shall:

- a. Indicate such by checking the appropriate block on the permit;
- b. Oversee the completion of post-entry actions indicated on the permit, and verify by signing in the appropriate location;
- c. Add any pertinent information concerning the entry on the permit; and
- d. Return the permit to the Entry Supervisor.

IV. Training

A. All Employees

1. The supervisor shall ensure that each employee receives awareness training on:
 - a. The identifying characteristics of a confined space;
 - b. The identifying characteristics of a permit space;
 - c. The authorization or prohibition of their job classification to enter permit spaces;
 - d. Required actions when working around or near a permit space entry; and
 - e. The authority of authorized Attendants and Entry Supervisors.
2. Training shall be required:
 - a. During orientation;
 - b. Within two months of the determination of the employee's entry authorization, but prior to entry; and
 - c. Whenever the supervisor becomes aware that the employee has failed to follow the instructions provided in the training.
3. The Supervisor shall provide the Program Coordinator with notification that training has been received.

B. Program Coordinators

1. The employer shall ensure that the designated Program Coordinator receives training in:
 - a. The requirements of this policy and procedures; and
 - b. The duties the Coordinator shall perform.
2. Training shall be provided:

- a. Within two months after designation as Program Coordinator; and
 - b. Within one month of revisions to this policy and/or procedures.
- C. Entry Supervisors, Attendants, and Entrants
1. The Supervisor shall ensure that employees designated as Entry Supervisors, Attendants, and/or Entrants receive training in:
 - a. The requirements of this policy and any Procedures;
 - b. The duties, authority, and responsibilities of Entry Supervisors, Attendants, Lead Entrants, and Entrants;
 - c. The types of hazards expected to be encountered in permit spaces;
 - d. The calibration, use, care and cleaning of equipment expected to be used during entry operations; and
 - e. The performance of pre-entry actions expected to be required in permit spaces.
 2. Training shall be provided:
 - a. Prior to assignment or authorization of duties within permit spaces;
 - b. Within one month after revisions of this policy or procedures. Assignment or authorization for permit space entry shall be suspended until training is completed;
 - c. Whenever the supervisor becomes aware that an employee is deviating from the procedures of this policy. Assignment or authorization for permit space entry shall be suspended until training is completed; and
 - d. Annually.
 3. The supervisor shall develop written certification that each affected employee has successfully completed training.
 - a. Certification shall include:
 - i. Employee Name;
 - ii. Authorized Duty (Entry Supervisor, Attendant, and/or Entrant);
 - iii. Name of the Trainer; and
 - iv. Synopsis of topics covered.
 - b. A copy of the certification shall be provided to the employee and Program

Coordinator.

V. Program Review

- A. The Employer and Program Coordinator/Entry Supervisor shall review the effectiveness of the Program upon the annual inspection, using the canceled permits and other documentation from the preceding twelve months, Entry Supervisor comments, and other available information.
- B. The Program Coordinator/Entry Supervisor may make recommendations to management at any time to make changes in procedures to address and correct weaknesses in the procedures.
- C. The Program Coordinator/Entry Supervisor and/or Unit Manager may notify the employer at any time of potential weaknesses in policy and/or procedures. The employer shall view and initiate whatever changes necessary to address confirmed weaknesses.

VI. Retention of Records

- A. Canceled Permits and other documentation shall be retained by the Program Coordinator not less than one year following the date of entry. Permits shall then be retained as an employee exposure record if applicable.
- B. Employee training certification shall be retained by the Program Coordinator for the length of employment.

NOTE: Provide company name and name of Program Coordinator within the above text, as appropriate.

(Company Name)

SAMPLE CONFINED SPACE ENTRY PERMIT

Date and Time Issued: _____ Date and Time Expires: _____

Job site/Space I.D.: _____ Job Supervisor: _____

Equipment to be worked on: _____ Work to be performed: _____

Entrants Name(s) _____

Stand-by personnel: _____

1. Atmospheric Checks: Time _____
Oxygen _____ %
Explosive _____ % L.F.L.
Toxic _____ PPM

2. Tester's signature: _____

| | | | | | | | |
|--|-----|-----|-----|------------------------------|-----|-----|-----|
| 3. Source isolation (No Entry): | N/A | Yes | No | 4. Ventilation Modification: | N/A | Yes | No |
| Pumps or lines blinded, disconnected or blocked | () | () | () | Mechanical | () | () | () |
| | | | | Natural Ventilation only | () | () | () |

5. Atmospheric check after isolation and ventilation:
Oxygen _____ % > 19.5 % <23..5%
Explosive _____ % L.F.L. < 10 %
Toxic _____ PPM < 10 PPM H(2)S
Time _____

Tester's signature: _____

6. Communication procedures: _____

7. Rescue procedures: _____

| | | |
|---|-----|-----|
| 8. Entry, standby and back up persons: | Yes | No |
| Successfully completed required training? ----- | () | () |
| Is it current? ----- | () | () |

| | | | |
|--|-----|-----|-----|
| 9. Equipment: | N/A | Yes | No |
| Direct reading gas monitor—tested ----- | () | () | () |
| Safety harnesses and lifelines for entry and standby persons ----- | () | () | () |
| Hoisting equipment ----- | () | () | () |
| Powered communications ----- | () | () | () |
| SABA or SCBA for entry and standby persons ----- | () | () | () |
| Protective Clothing ----- | () | () | () |
| All electric equipment listed Class I, Division I, Group D and non-sparking tools -- | () | () | () |

10. Periodic atmospheric tests:
Oxygen _____ % Time _____ Oxygen _____ % Time _____
Oxygen _____ % Time _____ Oxygen _____ % Time _____
Explosive _____ % Time _____ Explosive _____ % Time _____
Explosive _____ % Time _____ Explosive _____ % Time _____
Toxic _____ % Time _____ Toxic _____ % Time _____
Toxic _____ % Time _____ Toxic _____ % Time _____

We have reviewed the work authorized by this permit and the information contained herein. Written instructions and safety procedures have been received and are understood. Entry cannot be approved if any squares are marked in the "No" column. This permit is not valid unless all appropriate items are completed.

Permit Prepared By: (Supervisor) _____

Approved By: (Unit Supervisor) _____

Reviewed By: (Operations Personnel) _____
(printed name) (signature)

This permit is to be kept at job site. Return job site copy to Safety Office following job completion.

SAMPLE CONFINED SPACE ENTRY PERMIT

PERMIT VALID FOR 8 HOURS ONLY. ALL COPIES OF PERMIT WILL REMAIN AT JOB SITE UNTIL JOB IS COMPLETED

Date: _____ Site Location and Description: _____
 Purpose Of Entry: _____
 Supervisor(s) in charge of crews _____ Type of Crew Phone # _____
 Communication Procedures: _____
 Rescue Procedures (Phone Numbers At Bottom) _____

BOLD DENOTES MINIMUM REQUIREMENTS TO BE COMPLETED AND REVIEWED PRIOR TO ENTRY

| REQUIREMENTS COMPLETED | DATE | TIME |
|--------------------------------------|-------|-------|
| Lock Out/De-energizer/Try-out | _____ | _____ |
| Line(s) Broken-Capped-Blanked | _____ | _____ |
| Purge-Flush and Vent | _____ | _____ |
| Ventilation | _____ | _____ |
| Secure Area (Post and Flag) | _____ | _____ |
| Breathing Apparatus | _____ | _____ |
| Resuscitator – Inhalator | _____ | _____ |
| Standby Safety Personnel | _____ | _____ |
| Full Body Harness w/"D" ring | _____ | _____ |
| Emergency Escape Retrieval Equipment | _____ | _____ |
| Lifelines | _____ | _____ |
| Fire Extinguishers | _____ | _____ |
| Lightning (Explosive Proof) | _____ | _____ |
| Protective Clothing | _____ | _____ |
| Respirator(s) (Air Purifying) | _____ | _____ |
| Burning and Welding Permit | _____ | _____ |

Note: Items that do not apply enter N/A in the blank.

****RECORD CONTINUOUS MONITORING RESULTS EVERY 2 HOURS**

| CONTINUOUS MONITORING** | Permissible | | | | | |
|-------------------------|----------------|-------|-------|-------|-------|-------|
| TEST(S) TO BE TAKEN | Entry Level | _____ | _____ | _____ | _____ | _____ |
| PERCENT OF OXYGEN | 19.5% to 23.5% | _____ | _____ | _____ | _____ | _____ |
| LOWER FLAMMABLE LIMIT | Under 10% | _____ | _____ | _____ | _____ | _____ |
| CARBON MONOXIDE | +35 PPM | _____ | _____ | _____ | _____ | _____ |
| Aromatic Hydrocarbon | + 1 PPM * 5PPM | _____ | _____ | _____ | _____ | _____ |
| Hydrogen Cyanide | (Skin) * 4PPM | _____ | _____ | _____ | _____ | _____ |
| Hydrogen Sulfide | +10 PPM *15PPM | _____ | _____ | _____ | _____ | _____ |
| Sulfur Dioxide | + 2 PPM * 5PPM | _____ | _____ | _____ | _____ | _____ |
| Ammonia | *35PPM | _____ | _____ | _____ | _____ | _____ |

See Appendix D-2 in 1910.146 for prior table layout. (Page 313 of green book)

*Short-term exposure limit: Employee can work in the area up to 15 minutes.
 +8 hr. Time Weighted Avg.: Employee can work in area 8 hrs (longer with appropriate respiratory protection).

REMARKS: _____

| GAS TESTER NAME & CHECK # | INSTRUMENT(S) USED | MODEL &/OR TYPE | SERIAL &/R UNIT # |
|---------------------------|--------------------|-----------------|-------------------|
| _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ |

SAFETY STANDBY PERSON IS REQUIRED FOR ALL CONFINED SPACE WORK

| SAFETY STANDBY PERSON(S) | CHECK # | CONFINED SPACE ENTRANT(S) | CHECK # | CONFINED SPACE ENTRANT(S) | CHECK # |
|--------------------------|---------|---------------------------|---------|---------------------------|---------|
| _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ |

SUPERVISOR AUTHORIZING – ALL CONDITIONS SATISFIED _____ DEPARTMENT/PHONE _____
 PHONE # FOR AMBULANCE _____
 PHONE # FOR FIRE DEPARTMENT _____
 PHONE # FOR RESCUE _____
 PHONE # FOR GAS COMPANY _____