

Confined Space Program

Purpose

Regularly, confined spaces must be entered for inspection, cleaning or repair. Such spaces can present unusual hazards such as lack of sufficient oxygen, special mechanical or electrical hazards, possible exposure to flammable, toxic, or corrosive chemicals or undesirable microbiological species and difficulty of escape during an emergency. The objective of this program is to establish uniform guidelines for confined space entry, while providing and maintaining a working environment free of hazards for employees to safely enter and work within the space.

Policy

The **(Insert City Name)** recognizes the potential danger to its employees and contractors who must enter and work in confined spaces. To minimize the risk, the City will make every effort to use accepted engineering practices and administrative controls as its first means of entry. When these methods are not feasible, and employee entrance into a confined space is necessary, the space may only be entered after adequate procedures are established, safeguards have been taken and the proper documentation has been completed. No City of **(insert City Name)** employee will enter a confined space with an IDLH (immediately dangerous to life and health) atmosphere.

This policy does not cover **(Insert City Name)** Fire and Rescue given their rescue role. **(Insert City Name)** Fire and Rescue has its own Confined Space Program that can be found in the Department's Standard Operating Procedures Manual.

Compliance

All employees will be required to comply with the restrictions and limitations imposed upon them during a confined space entry operation. The employees authorized by the **(Insert City Name)** to enter a confined space will do so in accordance with this policy. All confined spaces will be re-evaluated periodically to verify that there have been no changes in the confined space that might increase the hazards to entrants during entry operations. Failure to comply with the requirements of this policy will result in severe disciplinary action.

Definitions

Some confined spaces are easy to recognize (i.e. manholes, sewers, tanks) while others are not so easy to distinguish (i.e. trenches, pits, open topped tanks). In addition, not all confined spaces will be permit-required confined spaces. Being able to identify the differences is an important aspect of making a safe entry into a confined space. To clarify what constitutes a Confined Space, the following definition will be used.

Confined Space - A confined space can be defined as an area which:

1. Has adequate size and configuration for employee entry;
2. Has limited means of access or egress; and
3. Is not designed for continuous employee occupancy.

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Permit Required Confined Space - A permit required confined space is further defined as having 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 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; and
4. Contains any other recognized serious safety and health hazards.

Non-Permit Required Confined Space - Not all confined spaces are classified, as permit required. A permit required confined space may be reclassified, as a non-permit required confined space. A non-permit-confined space is defined as:

1. Meets all of the requirements of a confined space; and
2. Does not contain, or with respect to atmospheric hazards, have the potential to contain, any hazard capable of causing death or serious physical harm.

Hazardous Atmosphere - Is an atmosphere which, because of one of the following reasons, may expose employees to the risk of death, incapacitation, injury, illness and/or impair their ability to escape from the space unaided:

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.
3. Atmospheric oxygen concentration below 19.5 percent or above 23.5 percent.
4. Hydrogen Sulfide in excess of 10 parts per million (PPM).
5. Carbon Monoxide in excess of 35 PPM.
6. Fresh airflow of less than 200 cfm/employee.
7. Any other atmospheric condition that is immediately dangerous to life and health.

Entry Permit - The written or printed document that is used to control entry into a permit-required confined space.

Entry Supervisor - The person responsible for determining if acceptable entry conditions are present at a permit-required confined space where entry is planned, for authorizing the entry, overseeing the entry operations, for terminating entry and verifying rescue.

Attendant - An employee stationed outside one or more permit-required confined spaces that monitor employees who have entered the spaces and is responsible for handling emergency situations that may arise. During entry operations, attendants never enter.

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Evaluation

The City will identify those spaces under its care, custody, or control that are to be classified as "confined spaces" and determine whether or not the space requires a permit in order to be entered. This information will be used to compile a list of all confined spaces. The list (Appendix A) will be updated when additional confined spaces are identified or if conditions within a particular confined space change. The City will use signs, along with employee training, to inform employees of the existence, location and danger posed by confined spaces. Signs will be posted at the entrances to the spaces and will read, **DANGER --- Confined Space Enter by Permit Only**.

Entry Procedures

Before an employee or contractor is authorized entrance into a confined space, the conditions in the space are to be evaluated to determine if acceptable entry conditions exist. This pre-entry check is to be conducted by a qualified employee using the instruction sheet attached to the confined space entry permit. The results of the evaluation are to be certified and documented via the entry permit (Form 1301) found in Appendix B. During entry, completed permits will be available for entrants to review and confirm that pre-entry preparations have been completed. Upon conclusion of the job, completed permits are to be returned to the Safety Coordinator.

Acceptable entry conditions are specified as those in which:

1. All hazards in the permit space that can be eliminated have been eliminated via engineering controls, ventilation, or other acceptable means.
2. Oxygen is > (greater than) 19.5% and < (less than) 23.5%.
3. Flammability is < 10% LEL/LFL.
4. H₂S (hydrogen di-sulfide) is < 10 PPM.
5. All procedures of this program are being followed.
6. All other chemicals will be no greater than or equal to the OSHA recommended Permissible Exposure Limit (PEL).

Note: All testing is to be performed without entering into the confined space.

If testing and evaluation determines that no hazards exist in the space, the space can be reclassified as a non-permit space and entry may proceed. During the course of entry operations, the space is to be tested and monitored as necessary to determine if acceptable entry conditions are being maintained. If hazards arise during entry, the space shall be evacuated immediately. Reentry will not be authorized until the hazard causing evacuation has been eliminated. If the hazard can not be brought under control the space will be reclassified, as a permit required confined space and all requirements of a permit entry will be followed.

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Permit System

Prior to City employees or contractors entering permit-required confined spaces, an entry permit (Form 1301 in Appendix B) must be completed by the entry supervisor. All appropriate sections of this permit must be filled in and the entry supervisor must sign it. The completed permit shall be kept at the job site until the job has been completed. The duration of the permit may not exceed the time required to complete the assigned task or job identified on the permit.

Entry permits will be canceled when any of the following conditions are met.

1. The entry operations/work covered by the permit have been completed; or
2. A condition that is not allowed under the entry permit arises in or near the permit area.
3. Time allowed to complete the task has elapsed; or
4. After entry is made it is discovered that additional work permits are needed (i.e. hot work permits).
5. A new permit must be issued if circumstances cause an interruption in the work for which entry was approved.

Contractors who will be making a permit entry into a confined space under the care, custody or control of the City will be required to have a suitable entry permit. If no permit is available or lacking in the required information, then the sample permit in Appendix B will supersede. Contractors will submit copies of all canceled entry permits to the Department Director who in turn will forward the document to the safety coordinator. The safety coordinator will retain canceled permits for at least one (1) year. The contractor shall note on the applicable permit problems encountered during an entry operation, so that appropriate revisions to the permit space can be made. Canceled permits will be used to facilitate the annual review of the *(Insert City Name)* confined space program.

Training

The *(Insert City Name)* will provide training to those employees whose job duties may require them to enter a confined space. Training will ensure that these employees acquire the necessary knowledge, understanding and skills to safely perform their duties while in a confined space. The safety coordinator will maintain a Training Roster of employees who attended this training.

All other employees, whose work operations are or may be in an area where a confined space entry is being performed, will be instructed about the procedure. They will be instructed that an attempt to enter a confined space to assist workers is forbidden but at times they may be called upon to provide support without entering the space.

Retraining

The City will retrain whenever there is a change in one or more of the following.

- Change in the employee's job assignment.
- Change in permit space operations that present a hazard about which an employee has not previously been trained on.
- Change in a confined space.

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In addition, retraining will be essential whenever a periodic inspection identifies deviations or inadequacies in the confined space program. Retraining will also take place if the Department Director or Safety Coordinator has reason to believe there are inadequacies in the program or in the employee's knowledge or use of the confined space program. Retraining will reestablish employee proficiency in the confined space program and introduce new or revised control methods or procedures.

Contractors

All contractors and other than City employees who wish to enter confined spaces listed in Appendix A under the City's care, custody or control will present their request to the appropriate Department Director using Form 1302 (See Appendix C). This request will contain the date and the time that the entry will take place and description of the precautions that the contractor or other than City employee will take during entry. Along with the request, the contractor shall submit their written confined space program for review. The contractor's program shall meet or exceed the guidelines established by the (Insert City Name) confined space program. Should the contractor not have a written program, the City's confined space program will be applied. In addition, the City will apprise the contractor or other than City employee of any cautions and procedures that the City uses when entering the confined space and will debrief the contractor or other than City employee at the end of the entry operations regarding the permit program followed and to follow-up on any hazards confronted and/or created.

Safety Equipment

The type of work to be done, the condition of the confined space to be entered, and the potential of conditions to change in the space will determine the equipment necessary for safe entry. A qualified person prior to the issuance of the permit will have determined what equipment is needed.

Where practical, all personnel entering a confined space will be equipped with a retrieval line secured at one end to the entrant by a full-body harness with its other end secured to an approved lifting device (i.e. tripod, davit arm etc).

Communications shall be maintained between the entry person(s) and attendant at all times. This may be accomplished by direct voice and visual contact, hard wire telephone, or two-way radio contact. Adequate, reliable, intrinsically safe lighting (preferably helmet mounted) shall be available for use.

In addition to the above-mentioned items, employees entering the confined space as well as the attendant will wear appropriate PPE (e.g. hard hats, safety glasses, safety shoes, gloves, etc.).

Fire fighters who perform confined space rescues will follow the policies and procedures contained in Decatur Fire and Rescue's Standard Operating Procedures Manual with respect to safety equipment.

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Rescue

Before entry into a permit-required confined space can be undertaken, the entry supervisor must contact Decatur Fire and Rescue and notify them of what space is being entered, what work is being done and what conditions are present or potentially could be present.

Should an unanticipated emergency condition occur in the confined space, the entrant(s) should first attempt self-rescue. In the event self-rescue cannot be accomplished, only a trained / qualified Decatur Fire Fighter / Rescue employee shall enter the confined space to perform rescue procedures. When outside contractors are performing a permit entry, the appropriate rescue service will be notified as a precaution.

Records

1. Department Directors will maintain a list of all identified confined spaces under their direction.
2. Canceled permits will be retained for at least one (1) year by the safety coordinator and Department Directors where applicable.
3. The Safety Coordinator will maintain records of employee training.

Periodic Program Evaluation

At least annually the safety coordinator will evaluate the effectiveness of the entire permit confined space program. The program will be revised as necessary to ensure that employees participating in entry operations are protected from confined space hazards.

Special Conditions

- Certain work being performed in a permit entry confined space could cause the atmosphere in the space to change. Examples of this are welding, drilling, or sludge removal. In these situations, air monitoring of the confined space should be conducted on a continuous basis throughout the time of the entry.
- If the workers leave the confined space for any significant period of time (one (1) hour or more), such as for a lunch or other break, the atmosphere of the confined space must be retested before the workers reenter the confined space.

Reference:

- ◆ Confined Space Listing
- ◆ Form 1301: Confined Space Entry Permit
- ◆ Form 1302: Authorization to Enter (Other than City Employee)