(18) Confined Spaces

(18.1) Introduction

- **Policy Statement**

  Our company is committed to providing a safe and healthy working environment for all our employees. This policy outlines our procedures for ensuring the safety of employees who enter and work in confined spaces.

- **Definition of Confined Spaces**

  Confined spaces refer to any space with restricted means for entry or exit and is not designed for continuous occupancy. They include, but are not limited to, tanks, vessels, silos, storage bins, hoppers, vaults, pits, manholes, tunnels, vats, equipment housings, ductwork, pipelines, etc.

- **Identification of Confined Spaces**

  Our company will identify all confined spaces in our workplace and classify them based on their hazards. Spaces will be classified as either "Permit-Required Confined Spaces" (PRCS) or "Non-Permit Confined Spaces" (NPCS).

(18.2) Roles and Responsibilities

Management

The management team has the following responsibilities:

- Ensure all confined spaces within our premises are identified and clearly marked. This includes reassessing our spaces whenever there are changes to structures or processes that may change the status of a confined space.
- Provide necessary resources for the implementation of the confined spaces program, which may include but is not limited to, safety equipment, training resources, and staffing.
- Engage competent people to conduct hazard assessments and develop safety procedures for confined space entries.
- Ensure that a system is in place to prevent unauthorized entry into permit-required confined spaces.
- Regularly review and update the confined spaces program and its implementation.

Supervisors

Supervisors of employees working in or around confined spaces have these responsibilities:

- Ensure all employees under their supervision have received adequate training and are competent in the understanding of confined space hazards and the use of necessary protective equipment.
- Control access to confined spaces and ensure no unauthorized entries occur.
- Ensure necessary permits are completed properly and are available at the entry points of permit-required confined spaces.
- Make sure that rescue services or personnel are available and ready to respond during all permit-required confined space entries.
- Enforce adherence to safety protocols and procedures among all their supervisees.

Employees

Employees, including authorized entrants, attendants, and rescue workers, have these responsibilities:

- Understand and comply with all safety protocols related to confined spaces.
- Complete all necessary training before participating in confined space entries.
- Use all equipment correctly, including personal protective equipment, safety harnesses, atmospheric testing devices, ventilation equipment, etc.
- Communicate effectively with the rest of the team, including attendants and supervisors, especially during permit-required confined space entries.
- Follow emergency procedures as needed and never endanger themselves or others by attempting unauthorized rescue operations.

Please note that the details might differ based on your specific work conditions and the structure of your company. Always consult a safety professional when designing your confined space safety program.

(18.3) Training

Training

Proper training is crucial to ensuring the safety and health of all employees working in or around confined spaces. All employees involved in confined space work, including entrants, attendants, supervisors, and rescue personnel, must receive appropriate training. The training must be provided before the employee is first assigned duties under this program and must be conducted by a competent person.

Initial Training

Initial training should cover the following aspects:

- Understanding the nature and types of confined spaces and recognizing confined spaces in our facility.
- Understanding potential hazards associated with confined spaces, including atmospheric, physical, biological, and chemical hazards.
- Understanding the use and limitations of atmospheric testing equipment.
- Understanding the use, care, and inspection of required PPE and rescue equipment.
- Understanding and following all entry procedures, including permit system procedures.
- Understanding the roles and responsibilities of each team member.
- Recognizing signs and symptoms of exposure to potential hazards.
- Understanding the importance of communication and the methods of communication used during entry.
- Knowing how to respond to emergencies, including self-rescue and non-entry rescue procedures.

Refresher Training

Refresher training should be provided at least annually or whenever there is a change in confined space operations that presents a new hazard, there are changes to the confined space procedures, or when an employee's job performance shows deficiencies. Refresher training should cover all aspects of initial training, and any new procedures or equipment introduced since the last training session.

Training Records

Training records should be maintained by the company. These records should include the employee's name, the trainer's name, the dates of training, and a summary of the training content. Employees should also acknowledge receipt of training with signatures.

Remember that a successful training program is not just about providing information. It should also evaluate the employee's understanding and readiness. This could be done through tests, demonstrations, drills, or discussions. Be sure to follow up and provide additional training as needed.

(18.4) Permit-Required Confined Spaces (PRCS)

A permit-required confined space has one or more of the following characteristics:

Contains or has the potential to contain a hazardous atmosphere.

Contains a material that has the potential to engulf someone who enters space.

Has walls that converge inward or floors that slope downward and taper into a smaller area which could trap or asphyxiate an entrant.

Contains any other recognized safety or health hazard, such as unguarded machinery, exposed live wires, or heat stress.

- **PRCS Evaluation**

  Before entry, each confined space must be evaluated to determine if it is a permit-required confined space. This includes identifying and evaluating the hazards of the confined space and determining what procedures, training, and protective equipment are necessary for safe entry.

- **PRCS Entry Permit**

  Every entry into a PRCS must be authorized by a written permit. This permit will confirm that the space is safe for entry and that all necessary precautions have been taken. The entry permit must include:

  The permit space to be entered.

  The purpose of the entry

  The date and duration of the permit

  The authorized entrants, attendants, and entry supervisors

  The hazards of the permit space

  The measures used to isolate the permit space and eliminate or control permit space hazards before entry.

  The acceptable entry conditions.

  The results of initial and periodic tests, accompanied by the names or initials of the testers and by an indication of when the tests were performed.

  The rescue and emergency services that can be summoned and the means (such as the equipment to use and the numbers to call) for summoning those services.

  The communication procedures used by authorized entrants and attendants to maintain contact during entry.

  The equipment, such as personal protective equipment, testing equipment, communications equipment, alarm systems, and rescue equipment, to be provided.

- **PRCS Entry Procedure**

Once the permit is completed and all conditions are met, the space is ready for entry. This process should be conducted under the supervision of an entry supervisor, and each person involved in the process should understand their roles and responsibilities.

The atmosphere within the PRCS should be tested by a competent person using a calibrated, direct-reading instrument. Space should be continuously monitored for changes in atmospheric conditions.

During entry and work, communication should be maintained between entrants and attendants. If the attendant must leave the space for any reason, all entrants must exit the space.

If any prohibited condition is detected during entry, entrants must exit the space immediately, and the space must be re-evaluated to determine how the hazardous atmosphere developed.

- **PRCS Exit and Debrief**

  Upon exiting the PRCS, all tools and materials should be removed, and all personnel should be accounted for. The permit should be canceled, and a debriefing should be conducted to discuss the operation and any suggestions for future entries.

  Remember that each PRCS and each entry operation is unique. This guide provides a general overview, but the specifics of your operation and your facility may require additional procedures or precautions. Always follow the regulations, your training, and your instincts to maintain safety.

(18.5) Non-Permit Required Confined Spaces

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

- **NPRCS Evaluation**

  Just like with PRCS, it's critical to conduct an evaluation of each confined space to determine if it qualifies as a NPRCS. This evaluation should include:

  Identifying potential hazards: These might be hazards inherent to space itself, or those that could be introduced by the work being done.

  Testing for atmospheric hazards: Air quality testing is essential, even if a space is designated as non-permit required. Levels of oxygen, flammable gases or vapors, and potential for toxic air contaminants must be evaluated.

- **NPRCS Entry Procedure**

  Although a permit is not required to enter a NPRCS, safety precautions still need to be taken:

  Pre-entry briefings: Before entering the NPRCS, conduct a pre-entry briefing for the workers who will be entering the space. This briefing should cover the nature of the work to be performed, potential hazards, and necessary safety precautions.

  Monitoring: Even though the space is not a PRCS, continuous monitoring of the space is necessary to ensure that conditions remain safe.

  Entry and exit: Entrance and exits should be kept clear to allow for quick evacuation if necessary. Adequate lighting should be provided for the work being performed.

- **NPRCS Training**

  Though not as stringent as PRCS, training is still critical for those working in NPRCSs. This training should cover:

    Hazard recognition: Workers must be trained to recognize potential hazards in space.

    Proper use of equipment: Workers should be trained in the use of any equipment necessary for safe entry and work in the space, such as ladders, air monitoring equipment, and personal protective equipment.

    Emergency procedures: Workers should understand what to do if an emergency occurs while they are in the NPRCS, including evacuation procedures and how to summon help.

- **NPRCS Exit and Debrief**

  After exiting the space, a debriefing should be conducted to discuss any issues that arose during entry and work, and to suggest improvements for future entries.

As with any safety procedure, it's essential to document all steps taken, including the initial hazard assessment, air quality testing results, worker training, and post-entry debriefing. While a formal permit is not required for entry into a NPRCS, maintaining these records can help protect worker safety and demonstrate regulatory compliance.

(18.6) Rescue and Emergency Services

- **Rescue and Emergency Services**

  Rescue and emergency services are critical components of any confined space entry program. A designated rescue team must be readily available while employees are working within permit-required confined spaces.

- **Rescue Team**

  The employer must ensure that a properly equipped and trained rescue team is available for immediate deployment in case of an emergency. The team may be made up of in-house personnel or an outside professional rescue service. The key is that they must be capable of responding quickly, typically within minutes, to the specific types of emergencies that might be anticipated in the confined space.

- **Training and Equipment**

  Rescue team members must be trained in the use of any equipment, such as ropes and medical equipment, which might be used in a rescue operation. They also need to be trained in first aid and CPR, and at least one member of the rescue team must be certified in these skills.

- **Rescue Drills**

  Rescue teams must practice their skills regularly. This includes full equipment deployment and victim recovery. Drills should be conducted in a space that simulates the types of confined spaces that employees are working in.

- **Rescue Services**

  When summoning rescue services, it is crucial to provide precise information about the location and nature of the confined space, the number of entrants, the nature of the problem, and any substances that may be present.

- **Retrieval Systems**

  Unless it poses a greater hazard to the employee, retrieval systems should be used whenever an authorized entrant enters a permit-required confined space. Retrieval systems can be very effective in quickly removing someone from a confined space without having to send additional personnel into the space.

  A retrieval system typically includes:

  A harness: worn by the authorized entrant.

A retrieval line: attached to the harness.

A mechanical device or fixed point: used to facilitate the rescue of the entrant.

Please note, the retrieval line should be attached in a way that the possibility of entanglement is minimized.

- **Coordination with External Emergency Services**

  When using external emergency services (e.g., fire department), it is important to ensure they are aware of the hazards they may confront when called to perform rescue at your facility, and also, that they have the appropriate equipment for a rescue.

  Coordination also includes providing the rescue team with access to all permit-required confined spaces from which rescue may be necessary, so they can develop appropriate rescue plans.

  Remember, the goal is always to prevent the need for rescue services through proper planning, training, and the use of appropriate safety equipment. The better your prevention and preparation, the lower your chances of needing to activate a rescue plan.