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Permit-required Confined Space (PRCS) Written Program

Oliver Construction Co. recognizes that entry into confined spaces can kill or injure employees. The following work practices have been implemented to minimize the potential dangers associated with entry into permit-required confined spaces.

Introduction


This program identifies specific responsibilities of different parties and presents the criteria required for safe entry into permit-required confined spaces.

Definitions

Confined space: A space that has limited or restricted means of entry, is not designed for continuous occupancy, and is large enough and configured so that a person can enter the space and maneuver well enough to perform tasks.

Permit-required confined space: A confined space that has the potential to expose personnel to hazards that require controls to prevent injury or death. These hazards may include any or all of the following:

- Engulfment and/or entrapment
 - Hazardous atmospheres
 - Other serious safety or health hazards hazardous atmosphere: An atmosphere that may expose an entrant to the risk of death, incapacitation, impairment of ability to self-rescue (that is, to escape unaided), injury or acute illness from one or more of the following causes:
 - Atmospheric oxygen concentrations less than 19.5 percent or greater than 23.5 percent
 - Flammable gas, vapor or mist at a concentration in excess of 10 percent of the lower flammable limit (LFL)
 - Airborne combustible dust at a concentration that meets or exceeds its LFL
 - Atmospheric concentration of a toxic substance that exceeds its dose or permissible exposure limit (PEL)
 - Any other atmospheric concentration that is immediately dangerous to life and health
- Non-permit-required confined space: A confined space that does not have the potential for containing atmospheric conditions capable of causing injury or death.

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General Procedures

- Based on these definitions, management is responsible for determining which areas are considered confined spaces and which confined spaces are permit-required confined spaces.
- Immediately after identifying the permit-required confined spaces, signs reading “DANGER—PERMIT-REQUIRED CONFINED SPACE. DO NOT ENTER,” or similar, must be placed at each entrance of the confined space.

Before allowing entry into any permit-required confined space, the following steps must be followed:

- An atmospheric test should be performed in the confined space to ensure the required ambient conditions—less than 10 percent LFL, greater than 19.5 percent and less than 23.5 percent oxygen, and less than the PEL of a contaminant—exist.
- The space should be free of other hazards by locking and tagging out equipment as necessary.
- External rescue services need to be identified or the company rescue group notified.
- The permit must be completely filled out, reviewed by entrants and posted near the permit-required confined space’s entrance.
- Authorized employees, attendant(s) and entry supervisor(s) should be properly trained regarding all issues in the training section.
- Ventilation systems must be used as required.

Training and Responsibilities


General Training Requirements

Each employee at Oliver Construction Co. who is involved or has the potential to be involved in confined-space entries must be trained before entering any space, as well as:

- Before first assigned duty in a confined space
- Whenever there is a change in the employee’s duties or assignment
- Whenever there is a change in the permit space itself
- Whenever it is determined that there have been or must be changes in or deviations from procedures

It is also important that employees fully understand the roles and training requirements of attendants, entrants and entry supervisors.

Upon completion of training, Oliver Construction Co. will issue certificates indicating each employee’s name and identification number, such as social security number; dates of training; and name of the trainer.

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Training Requirements and Responsibilities of Entry Supervisors


- Know, understand and ensure the completion of the training requirements of the authorized entrants and attendants as outlined in their requirements and responsibilities.
- Ensure the entry permit is completely and properly filled out and verify that the air monitoring has been done correctly.
- Terminate the permit when conditions change either inside or outside the space or when the permit expires.
- Verify that either external or internal rescue services are available.
- Determine when responsibility for a permit space is transferred, and ensure operations remain consistent with the terms on the entry permit.
- Require all unauthorized entrants to leave the permit area.
- Know the signs and symptoms of exposure for the hazardous atmospheres encountered in each confined space.

Training Requirements and Responsibilities of Authorized Entrants Be properly trained on all anticipated hazards of permit-required confined spaces.

- Know how to use all equipment properly.
- Know the signs and symptoms of exposure to hazardous atmospheres and how to perform self-rescue.
- Know the evacuation signal, and understand that the attendant can initiate immediate evacuations requiring all entrants to exit.
- Remain in constant communication with the attendant.
- Alert the attendant when:
 - The entrant recognizes any warning signs or symptoms of exposure to a dangerous situation.
 - The entrant detects a condition that is not allowed on the permit.

Training Requirements and Responsibilities of Attendants

- Know the hazards that may be encountered during entry, including signs and symptoms of exposures and exposure consequences.
- Remain outside the space at all times, and be in constant communication with the entrants. Under no circumstances is an attendant allowed to leave the entrance area of the confined space or perform duties that will interfere with the primary responsibility of communicating with those inside the confined space.
- Continuously maintain a proper count and be able to identify all the entrants.
- Monitor activities inside and outside the confined space to ensure the safety of the entrants.
- Summon rescue or other emergency personnel when needed.
- Perform non-entry rescues when possible.
- Warn all unauthorized entrants of emergencies.

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Entering the Space

Permit System

- Prior to confined space entry, the permit must be filled out completely. The entry supervisor must sign the permit before personnel enter the permit-required confined space.
- The completed permit must be posted at the entry point of the confined space, so entrants can review it and confirm that the pre-entry steps have been taken.
- The permit is only valid for the duration of the work performed.
- The entry supervisor must terminate the permit when:
 - Work is complete
 - Conditions arise that were not accounted for on the original permit
 - After the completion of the entry, the permit will be retained for a period of one year to facilitate review of the PRCS program. Any problems encountered during the entry must be noted on the permit and used for review.

Atmospheric Monitoring

- Before an employee enters any confined space, atmospheric testing will be conducted to assess the ambient conditions inside the space.
- The testing will be performed by a qualified person who is capable of operating the atmospheric testing equipment and interpreting the results.
- The equipment must be capable of detecting a minimum of three hazardous atmospheric variables: flammability, oxygen content and toxicity.
- The devices must be equipped with audio alarms, visual alarms or both.
- Before use or according to the manufacturer's scheduled specifications, the atmospheric equipment must be calibrated with the specified calibration gases in order to properly identify possible hazardous atmospheres.
- Acceptable atmospheric limits are:
 - Oxygen content: between 19.5 percent and 23.5 percent
 - Flammability: less than 10 percent of the lower flammable limit (LFL) for any substance
 - Toxicity: less than the permissible exposure limit (PEL) as established on the Safety data sheets (SDSs)
- If the atmospheric monitoring equipment detects levels beyond these ranges, employees will not be permitted to enter the space.
- If levels rise above or fall below the required ranges while employees are in the confined space, the entry will be terminated, and the attendant will instruct all employees to evacuate the space.
- The space will be ventilated and rechecked with the atmospheric equipment before subsequent entry is permitted. In most instances, Oliver Construction Co. will be required to operate the atmospheric equipment continuously.

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- Ventilation equipment will be used when entering any space without respiratory protection. Examples of this type of space include but are not limited to tankers and waterproofing excavations.
- This program is not limited to roofing projects; it also applies to tasks or work performed in the shop area, including in vaults or enclosed areas where chemicals are stored. These areas will be determined by the shop foreman and properly marked with appropriate signs.

Personal Protective Equipment

- Work and/or rescue equipment will be immediately available at all times.
- Work and/or rescue equipment will be selected with the potential hazards and possible contingencies associated with the confined space in mind.
- As necessary, PPE will be worn to protect entrants from the hazards associated with the confined space. PPE may include eye protection, hearing protection, hand protection, hard hats, chemically treated protective garments, and respiratory protection, including self-contained breathing apparatus (SCBA) if necessary.
- If the confined space has a height of more than 5 feet with an entry point overhead, each entrant will be required to wear a body harness attached to a mechanical retrieval system, such as a tripod.
- If the confined space is less than 5 feet in height but has a potentially hazardous atmosphere, each entrant will wear a body harness attached to a lifeline that will be monitored by the attendant. This system will allow the attendant to perform a non-entry rescue, if necessary, by pulling the entrant out by the lifeline.
- If the confined space entry requires more than one entrant using an airline system, the attendant will be responsible for ensuring the air hoses and lifelines do not become entangled.

General Safety Issues:

- Under no circumstances will compressed gas cylinders such as those containing oxygen or acetylene be allowed inside the confined space.
- The only pressurized cylinder that will be permitted is a SCBA for respiratory protection.
- If welding or cutting activities are conducted in the confined space, the following must be adhered to:
 - Hoses and torches will be inspected before use. If any piece of equipment is found to be defective, it will be tagged and removed from service immediately.
 - A fire watch will be posted during and after the confined space entry is complete.
 - All torches and hoses will be removed after work has ceased.
- Lockout/tagout procedures will be followed on all applicable equipment.
- When natural lighting is not sufficient, additional lighting will be provided. It must not exceed 12 volts in damp conditions and will be equipped with a ground fault circuit interrupter. In hazardous atmospheres, explosion-proof lighting will be required.
- Communications will be established and used throughout the entire confined space entry.
- Properly rated fire extinguishers will be present, fully charged and functional.

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Rescue and Emergency Services Non-entry rescue services will be performed by the attendant. The local fire department will be notified before the procedure begins in case non-entry rescue cannot be performed. [Company name's] management allows its employees to conduct entry rescues provided the following conditions are met:

- Each potential rescuer must be provided with proper PPE and be trained in its use for rescue.
- Each team member must be fully trained as an authorized entrant and confined-space rescue personnel.
- Training must take place initially before confined space entries occur and annually thereafter. Each rescue team member must practice removing humans or life-size mannequins.
- Each team member must be trained in first aid. At least one member must be trained in first aid and CPR.

If an emergency occurs and these conditions are not satisfied, an attendant will call the fire department or the specified rescue service. If Oliver Construction Co. elects to use an outside organization to perform rescue duties, it will:

- Inform the rescue service of the hazards of the confined space
- Allow access to previous permits so the rescue company can develop an action plan

Confined Space Exceptions

Alternative Confined-space Entry Plan


Under certain circumstances, Oliver Construction Co. will reclassify a space to allow for a streamlined approach to entering the confined space. This alternative entry plan will be allowed to be implemented only when:

- The only hazard posed by the permit space is an actual or potential hazardous atmosphere.
- Continuous forced air ventilation alone is sufficient to maintain a safe atmosphere.
- Atmospheric monitoring is done to support the claims in items 1 and 2.
- All data from items 1 and 2 are recorded and made available for all entrants to review.

If one of these items cannot be achieved, permit-required confined-space entry procedures must be followed. The person(s) performing initial atmospheric monitoring tests must follow the standard permit-required confined space procedures.

If the items can be achieved and the space reclassified, the following procedures will be implemented:

- Any condition making it unsafe to remove an entrance cover will be eliminated before the cover is removed.
- After entrance covers are removed, guardrails, barricade tape, etc., will be erected to prevent accidental falls through the opening.

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- Atmospheric monitoring to determine oxygen levels, toxic air contaminants, and flammable gases or vapors will be completed before entry operations. Atmospheric monitoring will also be conducted periodically during the entry to ensure these levels have not become more hazardous.
- Continuous forced-air ventilation will be used as follows:
 - The system must be capable of eliminating the atmospheric hazard while entrants are inside the space.
 - The system must be directed to or away from (depending on the airflow direction) the immediate area of the entrants and remain operational during the entire entry procedure.
 - The air supply for the system must come from a clean source and not increase hazards.
- If a hazardous atmospheric condition is detected while entrants are in the confined space, the following steps will be taken:
 - Each entrant will leave the space immediately.
 - The space will be evaluated to determine how the hazardous atmosphere developed.
 - Measures will be taken to protect the entrants from the hazardous atmosphere.

Non-permit-required Confined Spaces

Oliver Construction Co. may have the opportunity to reclassify a permit-required confined space as a non-permit-required confined space provided the following conditions are met:

- The permit space poses no actual or potential atmospheric hazards, and all hazards within the space can be eliminated from outside the space. If it is necessary to enter the space to eliminate the hazards, then permit-required confined space procedures must be followed.
- The space must remain free of atmospheric hazards at all times.
- All information must be documented, certifying the date, location of the space and signature of the person making the determination. This form must be made available to all employees entering the space.
- If hazards arise while employees are working in the space, employees must immediately evacuate and reclassify the space as a permit-required confined space.

The use of forced-air ventilation systems does not constitute the elimination of atmospheric hazards during non-permit-required confined space entries.