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2157

CONFINED SPACES AND THE ENTRY PERMIT SYSTEM

Leader's Guide

CONFINED SPACES AND THE ENTRY PERMIT SYSTEM

This easy-to-use Leader's Guide is provided to assist in conducting a successful presentation. Featured are:

INTRODUCTION: A brief description of the program and the subject that it addresses.

PROGRAM OUTLINE: Summarizes the program content. If the program outline is discussed before the video is presented, the entire program will be more meaningful and successful.

PREPARING FOR AND CONDUCTING THE PRESENTATION: These sections will help you set up the training environment, help you relate the program to site-specific incidents, and provide program objectives for focusing your presentation.

REVIEW QUESTIONS AND ANSWERS: Questions may be copied and given to participants to document how well they understood the information that was presented. Answers to the review questions are provided separately.

ATTENDANCE RECORD: Document the date of your presentation as well as identify the program participants. The attendance record may be copied as needed.

INTRODUCTION

Employees must sometimes work in areas which have configurations that don't allow for regular safety precautions. In these spaces employees may be forced to work very close to hazards. Proper guarding may not exist to prevent falls and the air may be toxic or explosive. In addition, such an area may not have easy way to exit should an emergency arise. These types of work areas are called confined spaces and learning how to safely work in these spaces is the purpose of this program.

Topics of the video include the definition of a confined space, the written confined space entry program, the difference between permit and non-permit required spaces, confined space hazards and the entry permit system. Also covered are the responsibilities of each of the confined space entry team members: the entry supervisor, the standby attendant and the entrants.

PROGRAM OUTLINE

DEFINITION OF A CONFINED SPACE

- The term "confined space" is more than just a description of an awkward work area, it's a term developed by the Occupational Safety and Health Administration (OSHA) to define specific types of work areas.

- A confined space is any space that meets the following conditions: 1) the space is not designed for continuous occupancy; 2) it is large enough for an employee to enter and perform work; and, 3) it has limited means of entry and exit.

- Some common types of confined spaces include pits, silos, tanks, pipes and vessels. While they come various sizes and configurations, confined spaces all have one thing in common: they can be very dangerous.

THE WRITTEN CONFINED SPACE ENTRY PROGRAM

- Many deaths and injuries have occurred in confined spaces when workers failed to recognize the presence of potential hazards and did not take the appropriate measures to protect themselves.

- To help protect workers from the hazards of working in confined spaces, the company has developed a written confined space entry program. This program is available for employee review and is based on the confined space regulations developed by OSHA.

- As part of the written plan, the company has evaluated and identified all confined spaces on site and maintains a list of them in the written plan.

PERMIT AND NON-PERMIT REQUIRED CONFINED SPACES

- Confined spaces are generally classified in one of two ways: permit required confined spaces and non-permit required confined spaces.

- Spaces classified as non-permit confined spaces do not have the potential to contain serious hazards and no special procedures are required to enter them.

- Permit required confined spaces have the potential to contain serious safety and health hazards.

- As the name implies, permit required confined spaces require a written permit to be issued and specific procedures to be followed before entry is allowed.

- Under certain specific conditions outlined in the company's written plan, a permit required confined space can be downgraded to a non-permit space. This is limited to spaces that have no atmospheric hazards and all other hazards are eliminated or controlled without entering the space.

ATMOSPHERIC HAZARDS

- While every permit required confined space is unique, they may share some common hazards.

- One common hazard is the potential for the air inside the space to be hazardous. This condition is referred to as an atmospheric hazard.

- For example, if the oxygen level of the air is below 19.5 percent, there is not enough oxygen available for effective breathing. This is referred to as an oxygen-deficient atmosphere.

- When the air contains oxygen levels above 23.5 percent, the air becomes flammable and any source of ignition could cause a flash fire or explosion. This is referred to as an oxygen-rich atmosphere or an explosive atmosphere.

- Explosive atmospheres are also created when any flammable gas, vapor or mist exceeds 10 percent of its lower explosive limit. In addition, combustible dusts such as grain or cement can also create an explosive atmosphere.

- Atmospheres are also considered hazardous when the presence of toxic substances above the permissible exposure limits could result in employee exposure.

- When an atmosphere is so hazardous that it poses an "immediate danger to life and health," it is referred to as an IDLH atmosphere.

- For example, in a process called inerting a noncombustible gas such as nitrogen is pumped into a space to displace an explosive atmosphere.

- While controlling the explosion hazard, this process also displaces all oxygen and creates an IDLH oxygen-deficient atmosphere.

OTHER CONFINED SPACE HAZARDS

- Because most confined spaces are part of working systems and processes, they may contain mechanical or electrical hazards related to its normal operation.

- Moving parts such as mixing or cutting blades, rotating shafts or other items are highly dangerous to confined space entrants.

• In addition, some spaces may contain engulfment hazards. Engulfment hazards exist when materials could be released into the space, covering the occupants.

• Another type of hazard is caused by the design of some confined space vessels. Sloping walls and floors present serious danger to personnel who may become trapped in tight spaces.

• These are just a few of the hazards which may be found in confined spaces. The company's entry permit system ensures these types of hazards are controlled during every entry operation.

THE ENTRY PERMIT SYSTEM

• The company's entry permit system is a system used to control confined space hazards and ensure worker safety during the entry process.

• The written entry permit contains information necessary for a successful entry and includes the following information:

a) the identity of the space to be entered (entering the wrong space can be a fatal mistake);
b) a list of personnel involved in the entry process and their responsibilities;
c) a listing of any potential hazards contained in the space as well as the specific testing and isolation measures required to control them;
d) the acceptable conditions for entry and the results of any atmospheric testing used to certify the space as safe to enter; and,
e) a listing of any specific personal protective equipment, specialized tools or rescue devices that are required for the operation at hand.

• The personnel involved in the entry process are referred to as the entry team. Each member of the team must sign the permit to indicate they know and understand the information it contains.

THE ENTRY TEAM

• Entering a permit required confined space is a team effort and each team member has specific duties. The entry team consists of the entry supervisor, the attendant and the entrants.

The Entry Supervisor

• The written permit serves as a checklist for safe entry operations and the entry supervisor makes sure the process is followed.

• The entry supervisor makes sure all appropriate notations have been made on the permit and that all atmospheric testing specified by the permit has been conducted.

• To control electrical, mechanical or engulfment hazards, isolation procedures such as lockout/tagout may be required. When this is the case, the entry supervisor must verify these procedures have been completed.

• The entry supervisor is also responsible for making sure any required protective equipment, tools or rescue devices are on hand before entry.

• The entry supervisor must confirm the availability of the rescue service and verify the means to summon them is working properly.

• After satisfying all pre-entry conditions listed on the permit, the entry supervisor must sign the permit indicating he has approved the entry to begin.

• At appropriate intervals during the entry process, the entry supervisor must confirm that the entry remains consistent with the terms of the entry permit.

• Should the entry supervisor determine that any part of the entry process has fallen outside the requirements of the entry permit, he must cancel the permit and the space must be evacuated.

The Attendant

• The attendant, sometimes called the standby attendant, acts as the eyes and ears of the entry process, monitoring conditions both inside and outside the space as well the condition of the entrants.

• During the entry process, the attendant must maintain an accurate count of the entrants inside the space and be able to accurately identify who is inside the space at any time.

• The standby attendant must also be fully trained as an entrant. This ensures he knows and understands what the entrants are encountering while inside the space.

• To properly monitor the entry conditions, the attendant must maintain contact with the entrants. This contact, which may be visual or by sound, allows either the entrant or the attendant to call for an immediate evacuation of the space when necessary.

• The attendant should call for an evacuation anytime conditions prohibited by the entry permit are detected or when an entrant exhibits behavioral symptoms that indicate a possible dangerous condition.

• Once the entrant determines an entrant must be evacuated, he must notify all other entrants to evacuate as well.

• If an entrant becomes incapacitated and cannot evacuate the space on his own, the attendant should immediately call the rescue service for assistance to conduct a non-entry rescue.

• A non-entry rescue means using external means, such as a lifeline attached to a harness, to remove the entrant from the space.

• Although the attendant is fully trained as an entrant, the attendant may not enter the confined space while attempting a rescue.

• If a non-entry rescue is not possible, the attendant must remain outside the space and keep other personnel from entering the space until the rescue service arrives.

Entrants

• Confined space entrants are the only ones authorized to enter the space.

• Like all team members, entrants must know and understand any potential hazards they may face during the entry process and be familiar with the warning signs and symptoms of exposure to dangerous conditions.

• Entrants may request to observe any atmospheric testing used to certify the space as safe to enter.

• Once inside, the entrant must maintain communications with the standby attendant so the attendant can monitor his condition and the status of the operation.

• Should the attendant or entry supervisor call for an evacuation, the entrant must immediately exit the space.

• The entrant also has a responsibility to monitor the conditions inside the space and call for an evacuation anytime he discovers a condition prohibited by the permit or recognizes any warning signs or symptoms of exposure to hazardous conditions.

• Each member of the entry team has a specific role to play in the entry process. By following the requirements of the entry permit system, the entry team is able to work safely in confined spaces.

CONCLUSION

• Confined space entry requires knowledge, training, skill and strict adherence to procedures for a safe and successful entry to be achieved.

• All members of the entry team will be given specific training before participating in confined space entry operations.

• No matter what role you play in the entry process, make sure you understand your duties and have the knowledge and skills necessary to perform them properly.

PREPARE FOR THE SAFETY MEETING OR TRAINING SESSION

Review each section of this Leader's Guide as well as the videotape. Here are a few suggestions for using the program:

Make everyone aware of the importance the company places on health and safety and how each person must be an active member of the safety team.

Introduce the videotape program. Play the videotape without interruption. Review the program content by presenting the information in the program outline.

Copy the review questions included in this Leader's Guide and ask each participant to complete them.

Copy the attendance record as needed and have each participant sign the form. Maintain the attendance record and each participant's test paper as written documentation of the training performed.

Here are some suggestions for preparing your videotape equipment and the room or area you use:

Check the room or area for quietness, adequate ventilation and temperature, lighting and unobstructed access.

Check the seating arrangement and the audiovisual equipment to ensure that all participants will be able to see and hear the videotape program.

Place or secure extension cords to prevent them from becoming a tripping hazard.

CONDUCTING THE PRESENTATION

Begin the meeting by welcoming the participants. Introduce yourself and give each person the opportunity to become acquainted if there are new people joining the training session.

Explain that the primary purpose of the program is to provide employees with an understanding of the company's confined space entry program, the duties of the members of the entry team and the hazards of confined spaces.

Introduce the videotape program. Play the videotape without interruption. Review the program content by presenting the information in the program outline.

Lead discussions about the types of confined spaces at your worksite and the precautions employees must take to prevent these hazards from contributing to injuries or deaths. Use the review questions to check how well the participants understood the information.

After watching the videotape program, the viewer will be able to explain the following:

- The definition of a confined space and the difference between a permit and non-permit required space;
- Atmospheric and other hazards that present dangers to confined space entrants;
- The details of the confined space entry permit system;
- The responsibilities of the entry team members: the entry supervisor, the standby attendant and the entrants.

CONFINED SPACES AND THE ENTRY PERMIT SYSTEM
REVIEW QUIZ

Name_____Date_____

The following questions are provided to check how well you understand the information presented during this program.

1. Which of the following is ***not*** a description of a confined space?

a. the space is designed for continuous human occupancy
b. the space is large enough to enter and perform work
c. the space has limited means of entry and exit

2. A confined space that contains or has the potential to contain serious safety and health hazards is classified as a _____.

a. limited access space
b. permit required space
c. non-permit required space

3. The company has developed a written confined space entry program based on OSHA regulations. This written program is that is available for employee review.

a. true
b. false

4. One common confined space hazard is an oxygen-deficient atmosphere. An oxygen-deficient atmosphere occurs when oxygen levels fall below what percentage?

a. 23.5 percent
b. 15.5 percent
c. 19.5 percent

5. A condition that poses an immediate danger to life and health is referred to as a(n) _____.

a. permit required condition
b. IDLH condition
c. non-entry condition

6. What type of information is contained on the entry permit?

a. listing of personnel involved in the entry
b. potential hazards of the confined space
c. results of atmospheric testing
d. all of the above

7. Only the actual confined space entrants need to read and understand the information contained on the permit.

a. true
b. false

8. Which of the following is not a duty of the entry supervisor?

a. ensure all atmospheric testing is completed and noted on the permit
b. verify that all hazardous energy sources have been properly isolated
c. remain in contact with the entrant during the entire entry procedure
d. confirm the availability of the rescue service and test the means to contact them

9. When conditions require an evacuation, which member of the entry team is authorized to call for an evacuation?

a. only the entry supervisor
b. either the entry supervisor or the attendant
c. only the entrant
d. any member of the entry team

10. Which of the following is ***not*** a duty of the standby attendant?

a. monitor the conditions inside and outside the space
b. monitor the condition of the entrant and be able to recognize signs and symptoms of exposure to hazardous conditions
c. call for an evacuation of the space if conditions fall outside the scope of the permit
d. enter the space to rescue the entrant if he cannot evacuate under his own power.

ANSWERS TO THE REVIEW QUESTIONS

1. a
2. b
3. a
4. c
5. b
6. d
7. b
8. c
9. d
10. d