Training Solutions, Delivered!

SURVIVE INSIDE:
Employee Safety in Confined Spaces (Concise)

Leader's Guide, Fact Sheet & Quiz

Item Number: 4278

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

PREPARING FOR THE MEETING

Here are a few suggestions for using this program:

a) Review the contents of the Fact Sheet that immediately follows this page to familiarize yourself with the program topic and the training points discussed in the program. The Fact Sheet also includes a list of Program Objectives that details the information that participants should learn from watching the program.

b) If required by your organization, make an attendance record to be signed by each participant to document the training to be conducted.

c) Prepare the area and equipment to be used for the training. Make sure the watching environment is comfortable and free from outside distractions. Also, ensure that participants can see and hear the TV screen or computer monitor without obstructions.

d) Make copies of the Review Quiz included at the end of this Leader's Guide to be completed by participants at the conclusion of the presentation. Be aware that the page containing the answers to the quiz comes *before* the quiz itself, which is on the final page.

CONDUCTING THE PRESENTATION

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

b) Introduce the program by its title and explain to participants what they are expected to learn as stated in the Program Objectives of the Fact Sheet.

c) Play the program without interruption. Upon completion, lead discussions about your organization's specific policies regarding the subject matter. Make sure to note any unique hazards associated with the program's topic that participants may encounter while performing their job duties at your facility.

d) Hand out copies of the review quiz to all of the participants and make sure each one completes it before concluding the training session.

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FACT SHEET

LENGTH: 10 MINUTES

PROGRAM SYNOPSIS:
Confined spaces can be dangerous, but they don't have to be. No matter what role employees play in their organization's confined space entry program, they must understand their responsibilities and have the knowledge and skills to perform them properly. This program explains why entering confined spaces can be so hazardous and how those hazards can be controlled by following proper confined space entry procedures. Viewers will also learn valuable lessons from a reenactment of a poorly-conducted confined space entry in which three lives are needlessly lost.

Topics include the definition of non-permit and permit-required confined spaces, the entry permit system, the four types of atmospheric hazards, atmospheric testing and monitoring, controlling confined space hazards and responsibilities of the entry supervisor, the attendant and the entrants.

PROGRAM OBJECTIVES:
After watching the video, the viewer will be able to identify the following:
- What non-permit and permit required confined spaces are;
- How the entry permit system works to ensure worker safety while entering, working in or exiting a confined space;
- How atmospheric testing and monitoring is conducted to ensure a space is safe for entry and occupancy;
- Which other dangers besides atmospheric hazards may exist in a space and how hazards may be controlled;
- What the responsibilities of the entry supervisor, the attendant and the entrants are.

PROGRAM OUTLINE

DEFINITION OF A 'CONFINED SPACE'
- The Occupational Safety and Health Administration, OSHA, defines a "confined space" as "any area that isn't designated for continuous occupancy, that is large enough for an employee to enter and perform work and there is limited or restricted means for entry and exit."
- In addition to being hard to get into and out of, confined spaces can pose hazards to workers such as fall hazards, physical hazards or atmospheric hazards.
- Because of the dangers presented by confined spaces, OSHA created its confined space safety regulation, 1910.146. This regulation contains requirements for practices and procedures which protect general industry workers from confined space hazards.
- On the other hand, a permit-required confined space has been deemed to contain or have the potential to contain serious hazards.
- When permit-required spaces exist, OSHA's regulation requires a written confined space entry plan be developed which includes a permit entry system designed to ensure that all hazards are controlled prior to and during an entry of the space.

THE ENTRY PERMIT SYSTEM
- Prior to any authorization being given for entry, the entry permit system requires that the means, procedures and practices necessary for safe entry operations be documented on an entry permit.
- Some of the important information contained on the entry permit includes the authorized entrants listed by name or by other means such that the attendant can quickly and accurately determine which authorized entrants are inside the space; the name and signature of the individual serving as the entry supervisor; and, a listing of the potential hazards of the permit space to be entered.
- Also listed on the permit must be the means used to isolate the space as well as the means used to eliminate or control the hazards of the space prior to entry.
- Isolating the space means the process by which a permit space is removed from service and completely protected against the release of materials or energy into the space (1910.146 (b)).

- The permit must also list the acceptable entry conditions and the results of the initial atmospheric testing as well as the names of the testers and the date and time of the testing.
- The entry permit must include the name of the rescue and emergency services that can be summoned and the means by which they can be summoned.
- A listing of all equipment needed for a proper entry such as PPE, testing equipment, communications equipment, alarm systems and rescue equipment are also required to be listed on the permit.

ATMOSPHERIC HAZARDS

- OSHA defines a hazardous atmosphere as an atmosphere that may expose employees to the risk of death, incapacitation, impairment of the ability to self rescue, injury or acute illness.

Flammable/Combustible/Explosive Atmospheres

- One type of hazardous atmosphere is a flammable, combustible or explosive atmosphere. This can occur when there is a presence of flammable gas, vapor or mist in excess of 10 percent of its lower flammable limit.
- This can also occur due to the presence of airborne combustible dust that meets or exceeds its lower flammable limit.

Oxygen-Rich & Oxygen-Deficient Atmospheres

- Another atmospheric condition which creates a severe risk of fire or explosion is an oxygen-rich atmosphere. An oxygen-rich atmosphere exists when the air inside the space contains an oxygen level above 23.5 percent.
- When this is the case the air is flammable and sparks from tools or equipment, or any other source of ignition, could cause a flash fire or an explosion.
- While too much oxygen is a fire hazard, too little oxygen is also a hazard. When oxygen levels drop below 19.5 percent there is not enough oxygen for workers to breathe effectively; this is called an oxygen-deficient atmosphere.

Toxic Atmospheres

- Another type of hazardous atmosphere which may exist inside a confined space is a toxic atmosphere.
- A toxic atmosphere can occur when a confined space contains toxic substances above their permissible exposure limits.
- Sometimes the conditions inside a space are so hazardous that they pose an immediate or delayed threat to life would cause irreversible adverse health effects or would interfere with an individual's ability to escape unaided from a permit space.
- OSHA refers to this type of condition as an IDLH condition. IDLH stands for “immediately dangerous to life and health.”
- Toxic gases and vapors in confined spaces come from a wide variety of sources. Carbon monoxide, hydrogen sulfide and methane are three of the most common naturally-produced gases that can be fatal for confined space occupants.

ATMOSPHERIC TESTING & MONITORING

- To prevent workers from being exposed to these and other toxic gases or hazardous atmospheres, OSHA requires the internal atmosphere of a confined space be tested with a calibrated direct-reading instrument.
- This atmospheric testing must be done for oxygen content, flammable gases and vapors and potential toxic air contaminants. The testing must be done in this specific order.
- If atmospheric testing indicates the existence of a hazardous atmosphere, forced-air ventilation must be used to eliminate the hazardous atmosphere before any workers are permitted to enter the space.

CONTROLLING HAZARDS

- All the hazards of a particular space will be listed on the entry permit as well as the methods that are used to control them.
- Some examples of methods to control confined space hazards include performing line breaking and blanking procedures to isolate a space and prevent the inflow of materials and performing a proper lockout/tagout procedure to control the hazard of moving parts or rotating blades.

RESPONSIBILITIES OF ENTRY TEAM MEMBERS

- The confined space entry team consists of the entry supervisor, the attendant and the entrants.

The Entry Supervisor

- The entry supervisor is in charge of the entry and uses the written permit as a checklist to make sure all precautions

required to make a safe entry have been followed prior to allowing entry to begin.

- To approve entry to the space, the entry supervisor must sign the entry permit.

The Attendant

- The attendant, often called the standby attendant, is responsible for monitoring the conditions inside and outside the space as well as monitoring the condition of personnel inside the space.
- The attendant must be knowledgeable about the hazards of the space as well as the signs and symptoms of exposure. This includes understanding the behavioral effects of exposure.
- The standby attendant must be able to identify the personnel inside the space at all times and maintain contact with the entrants through hand signals, radio, or some other means.
- If for any reason an entrant cannot evacuate the space under his own power, the attendant must immediately contact rescue personnel.
- Despite being trained as an entrant, the attendant must not enter the space and must prevent all other unauthorized employees from entering the space while waiting for the rescue service to arrive.
- In many cases it may be possible for an attendant to perform a non-entry rescue by using a hoist and retrieval line connected to a harness on the entrant. Of course, for this to be an option, it would have to have been planned for as part of the permit process and the equipment put into place prior to the entry.

The Entrants

- As the name suggests, the entrants are the team members who actually enter the space to perform work. They are the only members of the entry team permitted to enter the space.
- Entrants must understand the specific hazards of every space they enter and be aware of any symptoms of exposure and warning signs that indicate the onset of dangerous conditions.
- Entrants can also call for an evacuation of the space and must do so when they recognize any sign or symptom of exposure to a dangerous situation or when any conditions that violate the entry permit are discovered.

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ANSWERS TO THE REVIEW QUIZ

1. a
2. c
3. a
4. b
5. b

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REVIEW QUIZ

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

Name_____Date_____

1. An atmosphere is considered hazardous when there is a presence of a flammable substance in excess of _____ percent of its lower flammable limit.

a. 10
b. 20
c. 50

2. An oxygen-rich atmosphere exists in a confined space when the oxygen level is above _____ percent.

a. 10
b. 19.5
c. 23.5

3. All of the hazards of a particular confined space must be listed on the entry permit.

a. True
b. False

4. Attendants of confined space entry operations must receive the same training as entrants.

a. True
b. False

5. The attendant is the only entry team member who has the authority to call for the evacuation of a confined space.

a. True
b. False