



GOALS

This safety session will teach trainees:

- The most common hazards of confined space entry.
- Symptoms of entrants' exposure to any hazards of the confined space.
- The duties of attendants in keeping confined space entrants safe.
- The proper actions to take in case of an emergency.

Applicable Regulations: 29 CFR 1910.146



1. Let's review briefly.

- **A confined space is:**

- Large enough and so configured that an employee can bodily enter it and perform assigned work;
- One with limited or restricted means for entry or exit; *and*
- Not designed for continuous employee occupancy.

- **To be a "permit-required" space**, one of these factors must apply:

- It contains or has the potential to contain a hazardous atmosphere, such as oxygen deficiency or the presence of toxic substances.
- It contains a material that has the potential to engulf an entrant, such as grain, sand, or water.
- It has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor that slopes downward and tapers to a smaller cross section.
- It has another recognized serious safety or health hazard.

2. Attendants need to know the hazards that the entrant might face and be able to recognize the signs or symptoms, including behavioral effects.

- **Oxygen deficiency:** Monitoring shows oxygen levels below 19.5 percent.
 - Entrants may show signs of decreased ability to work strenuously.
 - Monitoring of entrants shows increases in exertion and pulse rate.
- **Oxygen enrichment:** Monitoring shows oxygen levels above 23.5 percent.
 - Symptoms may not be noticeable although entrants may become disoriented.
- **Flammable atmospheres:** Caused by a mixture of dusts, gases, or vapors that can explode or catch fire. Atmosphere must be continually monitored because entrants may not exhibit effects.
- **Combustible dust:** Visual test shows that dust obscures vision at a distance of 5 feet.
 - Entrants' symptoms may include coughing, sneezing, and difficulty breathing if they are not wearing appropriate respiratory protection.
- **Toxic substances, asphyxiants, and irritants:** Monitoring will detect presence and the level recorded will determine whether respiratory or other types of protection are required.
 - Signs of carbon monoxide exposure are nausea and headache.
 - Exposure to hydrogen sulfide will cause unconsciousness.
 - Safety data sheets (SDSs) will indicate behavioral effects of exposure to other toxic substances.



- **Engulfment:** Entrants could be injured or suffocated by materials that could engulf them, including grain, sand, or water.
 - The entrant does not respond to calls.
 - The entrant struggles to breathe or stops breathing.
- **Physical hazards:** Structural, surface, and electrical hazards.
- **Biological hazards,** such as water contaminated with bacteria.
- **Miscellaneous hazards,** such as noise, vibration, and heat.

3. Attendants' duties are to protect the entrants. They must:

- Know who is inside the space at all times and observe the entrants continuously for any signs of distress.
- Stay focused on their duties and keep in constant communication.
- Have prearranged signals to be used in an emergency.
- Monitor activities inside and outside the space to ensure safety.
- Monitor the confined space—before entry, test for hazards in the following order—oxygen content, flammable gases and vapors, and toxic atmospheres.
- Inspect rescue equipment to ensure that it is ready for use if needed.
- Prevent unauthorized personnel from entering the confined space.

4. Attendants must order evacuation if:

- A prohibited condition is detected by monitoring.
- An entrant shows behavioral effects of hazard exposure.
- An outside situation (such as a fire) could endanger entrants.
- Communication is lost between an entrant and the attendant.
- The attendant can no longer perform his or her required duties.

5. In an emergency, attendants are trained and can perform nonentry rescue but they must never enter the confined space.

- Nonentry rescue is preferred using retrieval lines—but requires visual or verbal confirmation that an entrant can be removed safely.
- A trained rescue team must be available for entry rescue if necessary, and attendant must ensure that those at the site are ready to assist them.

6. Constant vigilance by attendants will help to prevent an emergency or the need for any type of rescue.



DISCUSSION POINTS:

Review the types of confined space hazards at your facility.



CONCLUSION:

Constant monitoring of hazards and good communication by attendants will help keep entrants safe.



TEST YOUR KNOWLEDGE:

Have your trainees take the Attendants' Roles in Confined Spaces quiz. By testing their knowledge, you can judge whether they understand their duties thoroughly or whether they need to review this important topic again soon.



ATTENDANTS' ROLES IN CONFINED SPACES QUIZ

1. Having a hazardous atmosphere, or the potential for one, will cause a confined space to be "permit-required."
a. True b. False
2. An oxygen deficiency occurs when monitoring shows oxygen levels below 19.5 percent.
a. True b. False
3. Entrants never show any symptoms of exposure to combustible dust.
a. True b. False
4. An example of a biological hazard would be water contaminated with bacteria.
a. True b. False
5. An important duty of an attendant is to observe the entrants continuously for any signs of distress.
a. True b. False
6. Another of an attendant's duties is to prevent unauthorized personnel from entering the confined space.
a. True b. False
7. Attendants should not pay attention to anything happening outside of the confined space.
a. True b. False
8. Attendants must continuously monitor the confined space for hazards in the following order—oxygen content, flammable gases and vapors, and toxic atmospheres.
a. True b. False
9. Attendants must order evacuation if communication is lost between an entrant and the attendant.
a. True b. False
10. Attendants must be prepared to enter the confined space to rescue an entrant in an emergency.
a. True b. False

When you have completed this quiz, turn it in to your supervisor.

Name: _____

Date: _____



ANSWERS TO ATTENDANTS' ROLES IN CONFINED SPACES QUIZ

1. a. True.
2. a. True.
3. b. False. Entrants may show breathing difficulties. Entrant symptoms may also include coughing and sneezing.
4. a. True.
5. a. True.
6. a. True.
7. b. False. They need to be aware of any outside situation (such as a fire) that could endanger entrants.
8. a. True.
9. a. True.
10. b. False. Attendants must never enter the confined space. A trained rescue team must be available if entry rescue is necessary.