

# Confined space

By John N. Waller



Prior to class, identify any confined spaces at your facility. Determine if any of them are permit-required confined spaces, and bring copies of entry permits.

Let the group know that the intent of this training session is to familiarize them with the definitions of confined spaces, as well as some of the personal and operational protective equipment required for entry. It also will review specific requirements for personnel who may enter confined spaces, authorize or supervise such entry, or monitor entrants and associated conditions as well as emergency procedures.

Inform the group that completion of this training session will not qualify them to perform the duties of an entrant, attendant or entry supervisor. Regulations require specific training to perform these tasks.

Provide the group with OSHA's definition of a confined space, which includes these main requirements:

- Large enough and shaped so that an employee can bodily enter and perform assigned work;
- Limited or restricted means for entry or exit;
- Not designed for continuous employee occupancy.

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

- Contains or has the potential to contain a hazardous atmosphere (too little or too much oxygen, combustible gas or toxic materials);
- Contains a material that has the potential for engulfing an entrant, such as grain or sand;
- Has an internal configuration where 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;
- Contains any other recognized serious safety or health hazard.

Explain that if a workplace contains permit spaces, the employer must inform exposed employees by posting danger signs or by any other equally effective means.

Share with the group that entry into permit-required confined spaces requires a team effort. There are three primary assignments in a permit-required confined space entry: attendant, entrant and entry supervisor.

- Attendant—remains stationed directly outside the space and is primarily responsible for communicating with and monitoring the safety of the entrants;
- Authorized entrant—person authorized to enter the confined space and perform an assigned task;
- Entry supervisor—person responsible for determining if acceptable entry conditions are present, for overseeing entry operations, and for terminating entry.

## Entry permit

Tell the group a confined space entry permit must be issued prior to entry into a permit-required confined space. Among other things, the permit will include signatures of the attendant(s) and all authorized entrants who enter the confined space to acknowledge that all personnel have reviewed the permit requirements, test results and rescue planning prior to starting the job.

### Additional considerations before entry

- You must secure, relieve, disconnect or restrain all energy sources.
- Evaluate the atmosphere in the confined space for oxygen level, flammability, temperature extremes, and/or any contaminants.
- Entry is prohibited when the oxygen level is over 23.5 percent.
- Oxygen levels less than 19.5 percent are considered immediately dangerous to life and health (IDLH) and require maximum respiratory protection, if entry is necessary.
- Flammable gas or vapor levels must be less than 10 percent of the lower explosive limit (LEL).

## Protective equipment

Discuss the two categories of protective equipment used for confined space entry: operational and personal.

1. Operational protective equipment is used to secure the work site and to address general hazards in the confined space and/or adjacent work areas.

Ask employees to name operational equipment that may be necessary for safe entry.

Answers include:

- Ventilation equipment;
- Fire protection equipment;
- Ground fault circuit interrupters;
- Lighting rated for hazardous locations;
- Grounding or bonding equipment;
- Warning signs;
- Barricade tape or cones;
- Ladders, scaffolding, or work platforms.

2. Personal protective equipment (PPE) which may be required for confined space entry protects employees from injury or inhalation hazards.

Ask employees to identify some personal protective equipment that may be necessary for safe entry.

Answers include:

- Respiratory equipment;
- Protective clothing;
- Protective footwear;
- Gloves;
- Hearing protection;
- Protective eyewear;
- Fall protection/arresting/retrieval equipment.

## Communication

Attendant(s) must maintain communications with entry personnel at all times. Ask the group to name the ways in which attendants can maintain communications with the entrant. Write down and discuss their responses.

## Rescue

Discuss that it is extremely important to pre-plan rescue procedures. Rescue action is best taken from outside the confined space by using retrieval equipment.

All emergency procedures, including procedures relating to emergencies outside of the confined space, must be reviewed with all entrants, attendants and other related personnel prior to entry. Required rescue equipment is specified on the confined space entry form.

## Group actions

Ask the group to identify any confined spaces in your facility.

Also ask:

- Where are they?
- What makes them confined spaces?
- Are they permit-required confined spaces?
- Are employees correctly trained to enter these spaces?
- What are the dangers of entering one of these spaces, even just for a minute, to accomplish a task?

## References

### Web sites

- Confined Spaces (Occupational Safety and Health Administration): [www.osha.gov/SLTC/confinedspaces/index.html](http://www.osha.gov/SLTC/confinedspaces/index.html)
- Online Safety Library : Confined Space Entry (Oklahoma State University): [www.ehs.okstate.edu/links/conspace.htm](http://www.ehs.okstate.edu/links/conspace.htm)
- Confined Spaces (National Institute for Occupational Safety and Health): <http://www.cdc.gov/niosh/topics/confinedspace>
- Program Profile Series: Confined Space Program (Ohio Bureau of Workers' Compensation): [www.ohiobwc.com/downloads/brochureware/publications/PPSeries/ConSpacePro.pdf](http://www.ohiobwc.com/downloads/brochureware/publications/PPSeries/ConSpacePro.pdf)
- What is confined space?(Ohio Bureau of Workers' Compensation): [www.ohiobwc.com/downloads/blankpdf/\(B\)%20Confined%20Space%2099.pdf](http://www.ohiobwc.com/downloads/blankpdf/(B)%20Confined%20Space%2099.pdf)

### Videos

BWC's Division of Safety & Hygiene video library has a number of videos on confined space safety. These are available for loan to Ohio employers. Order a catalog by calling 1-800-OHIOBWC (ask for the video library), or visit our Web site, [ohiobwc.com](http://ohiobwc.com).

**John N. Waller** is regional health and safety manager for PSC Container Services Group. He oversees occupational health and safety at 24 facilities.

We always strive to improve the *Safety Leader's Discussion Guide*. Your feedback can help. Please e-mail your comments to [Safety@ohiobwc.com](mailto:Safety@ohiobwc.com).