

## Section 34

# CONFINED SPACE ENTRY

### **34.A CONFINED SPACES – NON-MARINE FACILITIES**

34.A.01 General. Confined space work performed in permanent facilities and/or performed on Construction sites shall be performed in accordance with this Section, 29 CFR 1910.146 and ANSI Z117.1. In addition, employer shall consult the OSHA Regional authority to determine if the requirements of 29 CFR 1910.146 and those provided herein are sufficient to be considered compliant for the specific confined space work tasks to be performed.

34.A.02 For USACE-conducted confined space work activities associated with ship and vessel repair and maintenance operations covered by 29 CFR 1915, see Section 34.B. Confined space work covered by OSHA's Shipyard (29 CFR 1915) standard or USCG regulations shall be performed in accordance with those regulations.

34.A.03 The following definitions apply to all confined spaces except those in ships or vessels:

a. Confined Space – A space that is large enough and so configured that an employee can bodily enter and perform assigned work and, has limited or restricted means for entry or exit and, is not designed for continuous employee occupancy;

b. Non-Permit Required Confined Space (NPRCS) – a confined space that does not contain or have the potential to contain an atmospheric hazard capable of causing death or physical harm. The atmosphere should be proven by air monitoring to be free of hazard;

c. Permit Required Confined Space (PRCS) – Is a confined space that has one or more of the following characteristics:

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(1) Contains or has a potential to contain a hazardous atmosphere;

(2) Contains a material that has the potential for engulfing an entrant;

(3) Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross section; AND

(4) Contains any other recognized serious safety or health hazard.

d. Confined Space Competent Person (CSCP) – A person with thorough knowledge of OSHA’s Confined Space Standard, 29 CFR 1910.146, experience with PRCS space entry procedures and, the authority to supervise and influence how work is performed on job sites and in facilities.

34.A.04 Confined Space Identification. Facilities and job sites shall assign a Confined Space Competent Person (CSCP) to identify all confined spaces and determine entry rules. Permit Required Confined Space (PRCSs) may be entered under PRCS procedures only. Non-Permit Required Confined Spaces (NPRCSs) may be entered under NPRCS entry procedures.

a. PRCS Entry Procedures. Entry into PRCSs shall comply with 29 CFR 1910.146.

b. NPRCS Entry Procedures. Entry into NPRCS shall comply with paragraph (c) (5) of 29 CFR 1910.146.

34.A.05 CSCP Responsibilities:

a. Identification and Labeling. The CSCP shall identify and label all confined spaces at the facility/site. The label shall identify the space as a NPRCS or a PRCS;

b. Program Development. The CSCP shall develop an activity/site-specific confined space program. The program shall contain the confined space program elements defined in this section;

c. PRCS Permit Development. The CSCP shall develop and enforce confined space permits for entry into all PRCSs at the facility/site;

d. Coordination with local emergency responders. The CSCP shall coordinate with local emergency responders to determine if they are capable of a rescue from the specific confined space. If the local emergency responders do not have the appropriate rescue capability, the rescue capability should be developed on-site.

34.A.06 Confined Space Program Elements. The confined space program shall address each of the following elements with facility/site- specific detail:

a. Identification and Labeling. Describe the process for regularly inspecting facilities/sites and the work tasks performed at them to identify confined spaces. Describe labeling and enforcement procedures that will assure personnel do not enter confined spaces in an unauthorized fashion;

b. Confined space hazard identification. Describe the air monitoring or ventilation monitoring conducted to identify the space as a PRCS or a NPRCS;

c. Safe confined space entry conditions. Describe the practices and procedures that will be followed to assure that confined spaces will be entered safely. Procedures and practices shall include but are not limited to the following:

(1) NPRCSs – Describe any monitoring and employee training that will assure non-permit conditions are maintained and that employees entering the NPRCS understand how to maintain a safe working environment while working in the NPRCS;

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(2) PRCSs – At a minimum, describe how each of the elements below will be enforced at each PRCS:

(a) PRCS entry permit development and maintenance procedures for all PRCS;

(b) Acceptable entry conditions;

(c) Observation by the authorized entrant of monitoring or testing in PRCSs;

(d) Isolation of the PRCSs;

(e) Purging, inerting, flushing or ventilating the PRCS as necessary to eliminate or control atmospheric hazards;

(f) Installation of barriers to protect entrants from external hazards;

(g) Monitoring to verify acceptable entry conditions for the duration of the authorized entry;

d. Equipment (and equipment maintenance procedures) to be used for confined space entry at the facility/site. Equipment shall include the following at a minimum:

(1) Atmospheric testing and monitoring equipment to assure safe entry;

(2) Ventilation equipment to assure maintenance of safe entry conditions;

(3) Communication equipment for entry;

(4) Personal Protective Equipment (PPE) necessary in the event that engineering controls and work practices do not adequately protect entrants (does not apply to NPRCS);

(5) Lighting equipment for entry;

(6) Barriers and shields to keep unauthorized entrants out of the confined spaces during entry;

(7) Ladders or other equipment necessary for entrant access and egress;

(8) Rescue and emergency equipment needed to remove entrants in the event of an emergency;

(9) Any other equipment necessary for safe entry into or rescue from confined spaces;

e. Procedures for evaluating PRCS conditions when entry is conducted. Address each of the following in facility/site-specific detail;

(1) Atmosphere conditions required to be maintained during entry to ensure safe entry;

(2) At a minimum, test the PRCS atmosphere for the following in the order specified:

(a) Oxygen;

(b) Combustible gases and vapors; and

(c) Toxic gases and vapors.

f. Policies and procedures to assure that at least one attendant is available outside the PRCS during entry to respond to emergencies;

g. Designate by name, personnel at the facility/site with active roles in confined space entry. Specify their responsibilities for PRCS entry. All permits shall be signed by each employee

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entering the confined space, the CSCP, attendant and a responsible entry supervisor;

h. Document procedures and agreements with local emergency responders for summoning rescue and emergency services for rescuing PRCS entrants;

i. Document a facility/site procedure for preparing, issuing, using and canceling PRCS entry permits;

j. Document procedures for coordinating with employees from outside organizations who will be participating in PRCS entry;

k. Document procedures for concluding an entry after entry operations have been completed;

l. Develop procedures for reviewing PRCS entries and documenting lessons learned from them; and

m. Establish a policy to review cancelled permits to modify the PRCS entry procedures.

34.A.07 Employee Training – Employees entering confined spaces shall be trained to understand the requirements of the facility/site-specific confined space program.

34.A.08 Rescue and Emergency Services – The CSCP shall develop or establish rescue and emergency services for PRCS entry.

**34.B WORK PERFORMED IN CONFINED AND ENCLOSED SPACES ON SHIPS AND VESSELS. The following applies only to ship and vessel repair and maintenance, not regular ship and vessel activities. > See Section 19.**

34.B.01 Definitions

a. Adjacent spaces are spaces which border an area on a vessel or vessel section such as, cargo tanks or holds, pump or engine rooms, storage lockers, tanks containing flammable or combustible liquids, gases, or solids, and crawl spaces, in all directions, including all points of contact, corners, diagonals, decks, tank tops, and bulkheads.

b. A Competent Person for confined spaces in ships and vessels (CPCSSV) is a person who has knowledge of the designation of spaces where the work is done; ability to understand and follow through on the air sampling, PPE and instructions of a Marine Chemist, Coast Guard authorized persons, or Certified Industrial Hygienist.

c. A confined space on a ship or vessel is a compartment of small size and limited access such as a double bottom tank, cofferdam, or other space which by its small size and confined nature can readily create or aggravate a hazardous exposure.

d. An enclosed space means any space, other than a confined space, which is enclosed by bulkheads and overhead. It includes cargo holds, tanks, quarters, and machinery and boiler spaces.

e. "Enter with restrictions" refers to entry into a confined space when engineering controls, PPE and time limitations are imposed by the competent person.

f. "Safe for Workers" denotes a space that meets the following criteria:

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(1) The oxygen content of the atmosphere is at least 19.5 percent and below 22 percent by volume;

(2) The concentration of flammable vapors is below 10 percent of the lower explosive limit (LEL);

(3) Any toxic materials in the atmosphere associated with cargo, fuel, tank coatings, or inerting media are within permissible concentrations at the time of the inspection.

34.B.02 All spaces on a vessel or ship or floating plant that could be considered a "potential confined space", shall be posted as a "Potential Confined Space". An inventory of these spaces shall be maintained in the pilot house and the land based office.

34.B.03 Before and during entry into the types of spaces listed below, the CPCSSV shall test for oxygen content, flammability, and toxicity. These tests and all entries shall be recorded on a entry form or in an entry log and reviewed by the GDA:

a. Unventilated confined spaces that have been closed up or freshly painted;

b. Confined spaces that have contained or do contain combustible or flammable liquids or gases;

c. Confined spaces that have contained or do contain toxic, corrosive, or irritant liquid, gases, or solids.

34.B.04 If the testing determines the oxygen is below 19% or above 22%, or the lower explosive limit (LEL) of 10% is exceeded, or other toxic substances are measured, then entry shall proceed under the direction of a CPCSSV.