

Publication Date: 11/28/2007

- Publication Type: Proposed Rules
- Fed Register #: 72:67351-67425
- Standard Number: 1926
- Title: Confined Spaces in Construction; Proposed Rule

[Federal Register: November 28, 2007 (Volume 72, Number 228)]

[Proposed Rules]

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[DOCID:fr28no07-17]

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Subpart AA--Confined Spaces in Construction

Authority: Section 3704 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3701); Sections 4, 6, and 8 of the Occupational Safety and Health Act of 1970 (29 U.S.C. 653, 655, 657); Secretary of Labor's Order No. 5-2007 (72 FR 31159); and 29 CFR Part 1911.

1926.1200 [Reserved]

1926.1201 Introduction.

(a) This standard sets out safety precautions that must be taken when working within or near a confined space that is subject to a hazard. Wherever the term "hazard" is used in this standard, it means an existing hazard or a hazard that has a reasonable probability of occurring in or near a confined space. A confined space is a space that has all of the following characteristics: Is large enough and so arranged that an employee can bodily enter it, has limited or restricted means for entry and exit, and is not designed for continuous employee occupancy.

(b) A confined space that is subject to a hazard must be classified. The classification determines what accident-prevention and-protection requirements apply to that space.

(1) There are four classifications:

(i) Continuous System-Permit-Required Confined Space (CS-PRCS).

(ii) Permit-Required Confined Space (PRCS).

(iii) Controlled-Atmosphere Confined Space (CACS).

(iv) Isolated-Hazard Confined Space (IHCS).

(2) The employer has the option of selecting any of these classifications, as long as the employer meets the applicable requirements for the classification selected. The one exception is that a space with the characteristics of a CS-PRCS cannot be given a different classification.

(c) There are precautions that must be followed if employees have to enter a space when in the process of determining which classification will be used (see Sec. 1926.1204(b)(2)).

(d) If the contractor determines under Sec. 1926.1204 that the confined space is not subject to any hazards (in which case the confined space need not be classified), the contractor must complete a reassessment of that determination upon the occurrence of any of the indications for reassessment specified in Sec. 1926.1207(a).

1926.1202 Scope.

(a) This standard applies to employers engaged in construction work and who have confined spaces at their job site, unless one of the exceptions in paragraph (b) of this section applies.

Note to Sec. 1926.1202(a): Examples of locations where confined spaces may occur include, but are not limited to, the following: Bins; boilers; pits (such as elevator, escalator, pump, valve or other equipment); manholes (such as sewer, storm drain, electrical, communication, or other utility); tanks (such as fuel, chemical, water, or other liquid, solid or gas); boilers; incinerators; scrubbers; concrete pier columns; sewers; transformer vaults; heating, ventilation, and air-conditioning (HVAC) ducts; storm drains; water mains; precast concrete and other pre-formed manhole units; drilled shafts; enclosed beams; vessels; digesters; lift

stations; cesspools; silos; air receivers; sludge gates; air preheaters; step up transformers; turbines; chillers; bag houses; and/or mixers/reactors.

(b) Exceptions. This standard does not apply to:

- (1) Construction work regulated by 29 CFR Part 1926 subpart Y (Diving).
- (2) Non-sewer construction work regulated by 29 CFR part 1926 subpart P (Excavations).
- (3) Non-sewer construction work regulated by 29 CFR part 1926 subpart S (Underground Construction, Caissons, Cofferdams and Compressed Air).

(c) Where this standard applies and there is a provision that addresses a confined space hazard in another applicable OSHA standard, the employer must comply with both that standard's provision(s) and the applicable provisions of this standard.

Note to Sec. 1926.1202(c): A list of confined-space provisions in other construction standards is in Appendix A to this subpart.

(d) The duties of controlling contractors under this standard include, but are not limited to, the duties specified in Sec. 1926.1204(a).

1926.1203 Definitions applicable to this subpart.

Atmospheric Hazard (see the definition of Hazardous atmosphere).

Attendant is an employee stationed outside one or more PRCs who performs the duties specified in Sec. 1926.1211(f) (Attendant duties).

Authorized Entrant is an employee who the employer authorizes to enter a PRC and performs the duties specified in Sec. 1926.1211(g) (Authorized entrant duties).

Barrier means a physical obstruction that blocks or limits access.

Blanking or Blinding means closing a pipe, line, or duct by covering its bore with a solid plate that can withstand the maximum pressure inside the pipe, line, or duct without leaking. A plate may be a spectacle blind or a skillet blind.

Confined space is a space that has all of the following characteristics:

- (1) Is large enough and so arranged that an employee can bodily enter it.
- (2) Has limited or restricted means for entry and exit.
- (3) Is not designed for continuous employee occupancy.

Note: There are four confined space classifications: Isolated- Hazard Confined Space, Controlled-Atmosphere Confined Space, Permit- Required Confined Space and Continuous System-Permit-Required Confined Space.

Continuous System-Permit-Required Confined Space (CS-PRCS) is a Permit-Required Confined Space that has all of the following characteristics:

- (1) Is part of, and contiguous with, a larger confined space (for example, sewers).
- (2) The employer cannot isolate it from the larger confined space.
- (3) Is subject to a potential hazard release from the larger confined space that would overwhelm personal protective equipment and/ or hazard controls, resulting in a hazard that is immediately dangerous to life and health.

Contractor is an employer who has employees engaged in construction, and is neither a controlling contractor nor a host employer.

Control is the action taken to reduce the level of any hazard inside a confined space using engineering methods (for example, by isolation or ventilation), and then using these methods to maintain the reduced hazard level. Control also refers to the engineering methods used for this purpose. Personal protective equipment is not a control.

Controlled-Atmosphere Confined Space (CACS) is a confined space that has all of the following characteristics:

- (1) Contains no physical hazards or only isolated physical hazards.
- (2) Uses ventilation alone to control atmospheric hazards at safe levels.

Controlling Contractor is the employer that has overall responsibility for construction at the worksite.

Note: If the controlling contractor owns or manages the property, then it is both a controlling employer and a host employer.

Double Block and Bleed means (with regard to lines, ducts, and pipes) closing two in-line valves and locking or tagging them in the closed position, and then opening the drain or vent in the line between the two closed in-line valves and locking or tagging it in the open position.

Early-Warning System is the method used to alert authorized entrants and attendants that an engulfment hazard may be developing.

Examples of early-warning systems include, but are not limited to:

Alarms activated by remote sensors; and lookouts with equipment for immediately communicating with the authorized entrants and attendants.

Emergency is any occurrence, inside or outside a confined space, that could cause death or serious physical harm to employees whose work is covered by this standard. For example, an emergency occurs if an employer fails to isolate a physical hazard or if ventilation or atmosphere-monitoring equipment malfunctions.

Engulfment Hazard is a physical hazard consisting of a liquid or flowable solid substance that can surround and capture an individual. Engulfment hazards may cause death or serious physical harm if: the individual inhales the engulfing substance into the respiratory system (drowning, for example); the substance exerts excessive force on the individual's body resulting in strangulation, constriction, or crushing; or the substance suffocates the individual.

Entrant (see the definition of Authorized entrant).

Entry occurs when any part of an employee's body breaks the plane of an opening into a confined space. Entry (or entry operations) also refers to the period during which an employee occupies a confined space.

Entry Permit means the document used by the employer to control entry into a PRCS as specified in Sec. 1926.1214 (PRCS—entry permits).

Entry Rescue occurs when a rescue service enters a PRCS to rescue employees.

Entry Supervisor means a qualified individual who the employer assigns to control entry into PRCS as specified in Sec. 1926.1210(e)(2) (Entry supervisor requirements).

Hazard means a physical hazard or hazardous atmosphere. See definitions below.

Hazardous Atmosphere means an existing or potential atmosphere consisting of at least one of the following:

- (1) A flammable gas, vapor, or mist in excess of 10 percent of its lower flammable limit.

- (2) An airborne combustible dust at a concentration that meets or exceeds its lower explosive limit.
- (3) An atmospheric oxygen concentration below 19.5 percent ("oxygen deficient") or above 23.5 percent ("oxygen enriched").
- (4) An airborne concentration of a substance that exceeds the dose or exposure limit specified by an OSHA requirement.
- (5) An atmosphere that presents an immediate danger to life or health.

Host Employer owns or manages the property where construction is taking place.

Note: If a host employer has overall responsibility for construction at the worksite, then it is both a host employer and controlling contractor.

Immediately Dangerous to Life or Health (IDLH) is a condition that occurs when an employee is exposed to a physical or atmospheric hazard that could result in any one of the following effects:

- (1) An immediate threat to life.
- (2) Irreversible adverse health effects.
- (3) Serious physical harm.
- (4) Impaired ability to escape unaided from a confined space.

Identify a Hazard means determining the type, quantity, and characteristics of a hazard, including the likelihood that a hazard currently absent from a confined space could enter the confined space.

Inspection Information means any information obtained about a space, including, but not limited to, blueprints, schematics, and/or similar documents, documents regarding previous confined space entries, or physical inspection/testing.

Isolate or Isolation means the elimination or removal of a physical or atmospheric hazard by preventing its release into a confined space.

Isolation includes, but is not limited to, the following methods: Blanking and blinding; misaligning or removing sections of lines, pipes, or ducts; a double-block-and-bleed system; locking out or tagging out energy sources; machine guarding; and blocking or disconnecting all mechanical linkages.

Isolated-Hazard Confined Space (IHCS) is a confined space in which the employer has isolated all physical and atmospheric hazards.

Limited or Restricted Means for Entry and Exit refers to a condition that has a potential to impede an employee's movement into or out of a confined space. Such conditions include, but are not limited to, hazards, poor illumination, slippery floors, inclining surfaces and ladders.

Lower Flammable Limit or Lower Explosive Limit means the minimum concentration of a substance in air needed for an ignition source to cause a flame or explosion.

Monitor or Monitoring means the process used to identify and evaluate the atmosphere in a confined space after an authorized entrant enters the space. This is a process of checking for changes in the atmospheric conditions within a confined space and is performed in a periodic or continuous manner after the completion of the initial testing of that space.

Non-Entry Rescue occurs when a rescue service, usually the attendant, retrieves employees in a PRCS without entering the PRCS.

OSHA Requirement means an OSHA standard or regulation that applies to construction, or the general duty clause of the Occupational Safety and Health Act of 1970 (paragraph (a)(1) of 29 U.S.C. 654).

Permit-Required Confined Space (PRCS) is a confined space that has any one of the following characteristics:

- (1) A hazardous atmosphere.
- (2) Inwardly converging, sloping, or tapering surfaces that could trap or asphyxiate an employee. For example, a space between walls that narrows towards the base (including, but not limited to, funnels and hoppers).
- (3) An engulfment hazard or other physical hazard.

Physical Hazard means an existing hazard that can cause death or serious physical harm in or near a confined space, or a hazard that has a reasonable probability of occurring in or near a confined space, and that includes, but is not limited to: explosives (as defined by paragraph (n) of Sec. 1926.914, definition of "explosive"); mechanical, electrical, hydraulic and pneumatic energy; radiation; temperature extremes; engulfment; noise; and inwardly converging surfaces. Physical hazard also refers to chemicals that can cause death or serious physical harm through skin or eye contact (rather than through inhalation).

Planned Conditions are the conditions under which authorized entrants can work safely in a PRCS or CS-PRCS, including hazard levels and methods of employee protection.

Protect or protection means keeping an employee safe in the presence of a physical or atmospheric hazard using methods other than control (for example, using personal protective equipment).

Rescue means retrieving, and providing medical assistance to, employees who are in a PRCS.

Rescue Service means the onsite or offsite personnel who the employer designates to engage in non-entry and/or entry rescue of employees from a PRCS.

Retrieval System means the equipment, including mechanical retrieval devices, used for non-entry rescue of authorized entrants from a PRCS.

Safe Level is an employee exposure to an atmospheric or physical hazard that meets OSHA requirements.

Serious Physical Harm means:

- (1) An impairment in which a body part is made functionally useless or is substantially reduced in efficiency. Such impairment includes, but is not limited to, loss of consciousness or disorientation, and may be permanent or temporary, or chronic or acute. Injuries involving such impairment would usually require treatment by a physician or other licensed health-care professional; or
- (2) An illness that could shorten life or substantially reduce physical or mental efficiency by impairing a normal bodily function or body part.

Simulated Permit-Required Confined Space is a confined space or a mock-up of a confined space that has all of the following characteristics:

- (1) Has similar entrance openings, and is similar in size, configuration, and accessibility to the PRCS the authorized entrants enter.
- (2) Need not contain any physical or atmospheric hazards.

Standard means this subpart unless otherwise specified.

Test or Testing means the process used to identify and evaluate the atmosphere in a confined space before an authorized entrant enters the space.

Unplanned Condition means a deviation from the planned conditions.

Ventilate or Ventilation means controlling a hazardous atmosphere using continuous forced-air mechanical systems that meet the requirements of 29 CFR 1926.57 (Ventilation).

1926.1204 Worksite evaluation, information exchange, and coordination.

(a) Neither the controlling contractor nor the host employer is required to obtain the information listed in this paragraph. However, if they have it, they must provide it to the contractor for the contractor's evaluation before the contractor first enters a confined space:

- (1) The location of each space that the controlling contractor or host employer actually knows is a confined space.
- (2) For each of the spaces identified in paragraph (a)(1) of this section:
 - (i) Any hazards, if known, that affect that space.
 - (ii) The classification of the space, IHCS, CACS, PRCS, or CS-PRCS, if previously classified.
 - (iii) Any precautions and procedures that the controlling contractor or host employer previously implemented for entering the space.

Note to Sec. 1926.1204(a): Unless a controlling contractor or host employer has or will have employees in a confined space, they are not required to enter any confined space to collect the information specified in paragraph (a) of this section.

(b) The contractor must determine if there are confined spaces and if these spaces are subject to any hazards, using the following procedures:

- (1) Without entering the space, the contractor must consider information, if any, from the host employer and controlling contractor, and use inspection information (see paragraph (b)(2) of this section), to:
 - (i) Determine if the space meets the definition of a confined space.
 - (ii) Identify any physical and atmospheric hazards.
- (2) If the contractor can demonstrate that obtaining required information without entering the space is infeasible, employees may enter to inspect for that information only if the requirements of Sec. Sec. 1926.1208 through 1926.1214 (PRCSs) and, if applicable, Sec. 1926.1215 (CS-PRCSs), are met.
- (3) To determine if there are atmospheric hazards, the contractor must follow the atmospheric-testing and -monitoring requirements in Sec. 1926.1205. This testing must be done without using mechanical ventilation or altering the natural ventilation in the space.
- (4) The contractor must meet other applicable OSHA requirements, including training requirements, for the use of personal and other protective equipment, as required in Sec. 1926.1213(c)(2).

(c) If the contractor classifies a space as an IHCS, CACS, PRCS, or CS-PRCS, it must:

- (1) Inform the controlling contractor and host employer of the precautions and procedures the contractor will follow for entry into the space.
- (2) At the conclusion of entry operations, inform the controlling contractor and host employer about any hazards that were present, or that developed, during entry operations.

- (d) If more than one employer will have employees in the space at the same time, the controlling contractor shall coordinate entry operations with the contractors.
- (e) Employee participation and notification. The employer must provide its employees who enter a confined space, and their authorized representatives, with an opportunity to observe the evaluations of the space (Sec. 1926.1204(b)), any reassessment conducted pursuant to Sec. 1926.1207, and atmospheric testing and monitoring required by this standard.

1926.1205 Atmospheric testing and monitoring.

- (a) When testing or monitoring atmospheric hazards in a confined space, the employer must:
 - (1) Test or monitor in the following order: Oxygen, combustible gases and vapors, and toxic gases and vapors, unless testing or monitoring is conducted simultaneously.
 - (2) Test or monitor for other atmospheric hazards as specified by applicable OSHA requirements.
 - (3) Monitor periodically and as necessary, unless applicable OSHA requirements or other provisions of this standard specify a different frequency.
 - (4) Test or monitor using a properly calibrated, direct-reading instrument(s).
- (b) If a medical facility treats an employee exposed to an atmosphere that is immediately dangerous to life and health, then the employer must:
 - (1) Provide or communicate to the medical facility any information that the employer is required to retain regarding the atmosphere (for example, the name of and level of exposure to atmospheric contaminants, and the information required by 29 CFR 1910.1200 (Hazard Communications) to be provided on Material Safety Data Sheets).
 - (2) Do so as soon as practical after the exposure.

1926.1206 Classification and precautions.

- (a) Using the information obtained in Sec. 1926.1204, the employer must classify the space as a Continuous System-Permit-Required Confined Space (CS-PRCS) if the space has all of the following characteristics:
 - (1) Is part of, and contiguous with, a larger confined space (for example, sewers).
 - (2) Is not isolated from the larger confined space.
 - (3) Is subject to a potential hazard release from the larger confined space that would overwhelm personal protective equipment and/or hazard controls, resulting in a hazard that is immediately dangerous to life and health.
- (b) For confined spaces other than a CS-PRCS, the employer must use the information obtained in Sec. 1926.1204 to classify the space as a PRCS (Sec. 1926.1208) or, alternatively, as a CACS (Sec. 1926.1216) or IHCS (Sec. 1926.1217) if the space meets the applicable requirements for the classification selected.
- (c) The employer must meet the accident-prevention and –protection requirements applicable to the space classification before any employee enters the space, unless otherwise specified.

1926.1207 Reassessment.

(a) If the contractor made a determination under Sec. 1926.1204 that the confined space was not subject to any hazards, the contractor must reassess that determination if there is an indication that the conditions under which the determination was made have changed. Such indications include, but are not limited to:

- (1) A change in the configuration or use of, or the type of work conducted or materials used in, the confined space.
- (2) New information regarding a hazard in or near a confined space.
- (3) An employee or authorized representative provides a reasonable basis for believing that a hazard determination is inadequate.

(b) If the contractor made a determination under Sec. 1926.1204 that the confined space was subject to a hazard, the contractor must reassess the determinations, procedures, and equipment used to protect employees in or near a confined space if there is an indication that the measures taken may not protect employees. Such indications include, but are not limited to:

- (1) A change in the configuration or use of, or the type of work conducted or materials used in, the confined space.
- (2) New information regarding a hazard in or near a confined space.
- (3) An employee or authorized representative provides a reasonable basis for believing that a hazard determination or protective measure is inadequate.
- (4) An unauthorized entry into a PRCS.
- (5) Detection of a hazard in or near a PRCS that is not addressed by the entry permit.
- (6) Detection of a hazard level in or near a PRCS that exceeds the planned conditions specified in the entry permit.
- (7) The occurrence, during an entry operation, of an injury, fatality or near-miss.

(c) If the contractor must reassess the confined space based on paragraphs (a) or (b) of this section, then the contractor must ensure that:

- (1) All employees exit the confined space immediately.
- (2) No employee reenters the space until the contractor:
 - (i) Identifies physical and atmospheric hazards in accordance with Sec. 1926.1204(b).
 - (ii) Follows the classification procedures specified by Sec. 1926.1206 (Classification and precautions).
 - (iii) Meets the accident-prevention and -protection requirements applicable to the space classification selected by the contractor before any employee reenters the space.

1926.1208 Permit-required confined spaces.

(a) Permit-required confined space (PRCS) classification requirements.

- (1) A PRCS is a confined space that has any one of the following characteristics:
 - (i) A hazardous atmosphere; or
 - (ii) Inwardly converging, sloping, or tapering surfaces that could trap or asphyxiate an employee. For example, a space between walls that narrows towards the base (including, but not limited to, funnels and hoppers); or
 - (iii) In engulfment hazard or other physical hazard.

- (2) The requirements for a confined space classified as a PRCS are:
- (i) For each physical hazard that was identified using the procedures in Sec. 1926.1204(b), the employer must determine an isolation method or a method of protecting employees from the physical hazard that meets applicable OSHA requirements.
 - (ii) For each atmospheric hazard that was identified using the procedures in Sec. 1926.1205, the employer must determine an isolation method or a method for controlling the hazard at a safe level or protecting employees from the atmospheric hazard with personal protective equipment.

(b) Planned conditions.

- (1) Using the determinations made in paragraph (a)(2) of this section, the employer must define the conditions under which authorized entrants can work safely in the PRCS, including hazard levels and methods of employee protection (that is, "planned conditions").
- (2) The employer must determine that, in the event the ventilation system stops working, the monitoring procedures will detect an increase in atmospheric hazard levels in sufficient time for the entrants to safely exit the PRCS.

1926.1209 PRCS--initial tasks.

(a) Notification and posting danger signs.

- (1) The contractor must notify its employees that it anticipates will be in or near the PRCS and their authorized representative, and the controlling contractor, about the location of, and the hazards/dangers posed by, the PRCSs located at the job site.
- (2) The employer must post a danger sign to warn employees about the PRCS. Posting signs at or near the entrances to the PRCS that read, "Danger--Permit-Required Confined Space--Authorized Employees Only" or "Danger--Do Not Enter Without a Permit," or similar language, will meet this requirement. If the employer demonstrates that a sign is infeasible, then an equally effective means of warning employees must be used.

(b) Prohibiting entry. The employer must decide if employees will be authorized to enter the PRCS. Where no employees will be authorized to enter, the following steps must be taken:

- (1) Use barriers to permanently close the PRCS.
- (2) Post danger signs that comply with paragraph (a)(2) of this section.
- (3) Inform the employees and the controlling contractor of the location of that PRCS and the steps used to prevent entry.

(c) Limiting entry.

- (1) Where one or more employees will be authorized to enter the PRCS, the employer must prevent the non-authorized employees from entering the PRCS by taking the following steps:
 - (i) Across the entrances to the PRCS, use barriers or high-visibility physical restrictions, such as warning lines with flags.
 - (ii) Post danger signs that comply with paragraph (a)(2) of this section.
 - (iii) Inform the non-authorized employees and the controlling contractor of the location of, and hazards in, the PRCS, and the steps used to prevent unauthorized entry.

(2) Only employees who are "authorized entrants" are to be permitted to enter the PRCS.

(d) Training.

(1) The employer must ensure that employees the employer anticipates will be in or near a PRCS (i.e., employees who have duties specified by the applicable sections of this standard (entry supervisors, attendants, authorized entrants, and rescue-service employees)) acquire the knowledge and skills necessary for the safe performance of these duties. This training must result in an understanding of the hazards in the PRCS and the methods used to isolate, control or in other ways protect employees from these hazards.

(2) Hazards of rescue. The employer must train employees the employer anticipates will be in or near a PRCS who are not authorized to perform entry rescues about the dangers of attempting such rescues.

(3) When to train under paragraphs (d)(1) and (d)(2) of this section:

(i) Prior to initial entry into the PRCS.

(ii) If an employee the employer anticipates will be in or near a PRCS receives a change in assigned duties that relate to maintaining the planned conditions, any additional training necessitated by the change in duties must be completed before the employee re-enters the PRCS.

(iii) If a new hazard is introduced or occurs in the PRCS for which the employees the employer anticipates will be in or near a PRCS received no previous training, the authorized entrant must exit the space immediately and this training must be completed before resuming work in the space.

(4) The employer must ensure that the employees the employer anticipates will be in or near a PRCS can demonstrate proficiency in the duties required by this standard, including new and revised PRCS procedures.

(5) Training records. The employer must maintain training records for each employee. The training records must:

(i) Show that the employee accomplished the training requirements specified above in paragraphs (d)(1) through (d)(4) of this section.

(ii) Contain the employee's name, names of the trainers, and dates of the training.

(6) Retraining. Before employees continue with PRCS entry operations, the employer must train those employees it has reason to believe:

(i) Deviated from the PRCS entry procedures specified in Sec. Sec. 1926.1209 through 1926.1214 of this standard; or

(ii) Do not have adequate knowledge and skills of PRCS entry procedures.

(e) Rescue preparations. Before any authorized entrant enters the PRCS, the employer must complete arrangements for providing for the rescue of these employees in accordance with Sec. 1926.1213.

(f) Safe termination procedures. For each PRCS that authorized entrants will enter, the employer must develop procedures for safely terminating entry operations under both planned and emergency conditions.

1926.1210 PRCS -Preparing for Entry.

Before entry, the employer must ensure that the following requirements are met:

- (a) Entry permit. Prepare and post an entry permit where the authorized entrants enter the PRCS. Entry permit requirements are in Sec. 1926.1214.
- (b) Removing entrance covers. Prior to removing an entrance cover, eliminate any condition (for example, high pressure in the PRCS) that makes it unsafe to remove the cover.
- (c) Guarding holes and openings. Outside the space, when necessary to protect employees working in and around the space, promptly: use guardrails or covers as specified in 29 CFR 1926.502 (Fall protection systems criteria and practices) of subpart M (Fall Protection) to guard holes and openings into the space from falling individuals and objects and institute measures to control pedestrian and vehicle traffic in accordance with the requirements in 29 CFR part 1926 subpart G (Signs, Signals, and Barricades).
- (d) Safe access. Ensure that a safe method of entering and exiting a PRCS (such as stairways or ladders) is provided and used, and that it meets applicable OSHA requirements. If a hoisting system is used, it must be designed and manufactured for personnel hoisting; however, a job-made hoisting system is permissible if it is approved for personnel hoisting by a registered professional engineer prior to use.
- (e) Entry supervisor.
 - (1) Assign an entry supervisor to supervise PRCS entry operations.
 - (2) Entry supervisor requirements. Ensure that each entry supervisor:
 - (i) Knows the physical and atmospheric hazards in the PRCS.
 - (ii) Knows how these hazards enter the body (such as skin contact and inhalation), signs and symptoms, and characteristic effects (such as behavioral effects) of exposure to these hazards.
 - (iii) Verifies that the conditions in the PRCS are within the planned conditions as defined under Sec. 1926.1208(b) and specified in the entry permit by checking the appropriate entries in the entry permit, verifying completion of the atmospheric testing specified in the entry permit, and verifying that any other procedures and equipment specified in the entry permit are in place.
 - (iv) Verifies that the rescue service is available and that the means for summoning the rescue service works.
 - (v) Signs the entry permit to authorize entry into the PRCS.
 - (vi) Terminates PRCS entry operations in accordance with Sec. 1926.1212(b) (Supervisor requirements) of this standard.
- (f) Attendant.
 - (1) Assign an attendant to be stationed outside the PRCS for the duration of the entry operation.
 - (2) Hazard awareness. Ensure that each attendant knows:
 - (i) The physical and atmospheric hazards in the PRCS.

- (ii) How the hazards enter the body (such as skin contact and inhalation), signs and symptoms, and characteristic effects (including behavioral effects) of exposure to these hazards.
- (3) Attending multiple PRCSS. If a single attendant is assigned to monitor multiple PRCSSs, then ensure that:
 - (i) The attendant can fully perform the duties specified by Sec. 1926.1211(f) (Attendant duties).
 - (ii) The equipment and procedures are provided to enable an attendant to respond to an emergency affecting any of the PRCSSs the attendant is monitoring.
- (g) Authorized entrant.
 - (1) Designate which employee(s) are authorized entrants in the PRCSS.
 - (2) Hazard awareness. Ensure that each authorized entrant knows:
 - (i) The physical and atmospheric hazards in the PRCSS.
 - (ii) How the hazards enter the body (such as skin contact and inhalation), signs and symptoms, and characteristic effects (such as behavioral effects) of exposure to these hazards.
- (h) Criteria for assigning simultaneous roles.
 - (1) Employees are prohibited from serving as authorized entrants and attendants simultaneously.
 - (2) Authorized entrants may serve simultaneously as entry supervisors only if the employer ensures that they meet the requirements of both Sec. 1926.1210(e) (Entry supervisor) and 1926.1210(g) (Authorized entrant).
 - (3) Attendants may serve simultaneously as entry supervisors only if the employer ensures that they meet the requirements of both Sec. Sec. 1926.1210(e) (Entry supervisor) and 1926.1210(f) (Attendant).
 - (i) [Reserved]
- (j) Equipment. In addition to the equipment required in Sec. 1926.1218, the employer shall provide and ensure the use of the following equipment:
 - (1) Communication equipment for compliance with paragraphs (f)(5), (g)(2) (entrant-to-attendant communication requirements), and (h)(2) (Entry rescue--when to summon) of Sec. 1926.1211.
 - (2) Lighting equipment needed to comply with 29 CFR 1926.56 (Illumination).
 - (3) Railings, covers, or barriers as required in Sec. Sec. 1926.1209(b) (Prohibiting entry) and (c) (Limiting entry), and 1926.1210(c) (Guarding holes and openings).
 - (4) Equipment, such as ladders, needed for safe entry to and exit from a PRCSS.
 - (5) Rescue and emergency equipment required to comply with Sec. 1926.1213 (PRCSS--rescue criteria), unless a rescue service provides its own rescue and emergency equipment.
 - (6) Any other equipment necessary for safe rescue operations in or near PRCSSs.
- (k) Document the determinations made and the actions taken in paragraphs (b) through (j) of this section by entering the information in the entry permit as required in Sec. 1926.1214(a).

1926.1211 PRCS - During Entry.

While any authorized entrant is in a PRCS, the employer must ensure that the following requirements are met:

(a) The physical and atmospheric hazards remain isolated or controlled, or the employees remain protected from them, in accordance with the determinations made in Sec. 1926.1208 (Permit-required confined spaces).

(b) Monitoring. Atmospheric hazards are monitored as specified in Sec. 1926.1205 (Atmospheric testing and monitoring). Monitoring must be continuous unless the employer can demonstrate that the equipment for continuously monitoring a hazard is not commercially available or that periodic monitoring is of sufficient frequency to ensure that the atmospheric hazard is being controlled at safe levels.

(c) The procedures and monitoring results in paragraphs (a) and (b) are documented by entering the information in the entry permit as stated in Sec. 1926.1214(a).

(d) Entry supervisor duties. Each entry supervisor:

(1) Ensures that entry conditions are being properly monitored and that these conditions remain consistent with the planned conditions specified in the entry permit.

(2) Removes individuals who are not authorized entrants who enter, or who attempt to enter, a PRCS.

(3) Evacuation. Orders authorized entrants to exit the PRCS as quickly as possible if required under either paragraph (d)(3)(i) or (d)(3)(ii) of this section, as follows:

(i) The entry supervisor detects or learns of any of the following:

(A) An unplanned condition.

(B) Any sign, symptom, unusual behavior or other effect of a hazard in an authorized entrant.

(C) An evacuation alarm.

(D) A situation outside the PRCS that could endanger the authorized entrants.

(ii) The entry supervisor cannot effectively and safely perform all the duties required by Sec. 1926.1210(e)(2) (Entry supervisor requirements) and cannot be immediately replaced.

(4) Entry permit cancellation. Cancels the entry permit upon the occurrence of any of the following:

(i) An evacuation is required under this section.

(ii) Any of the indications that require a reassessment under Sec. 1926.1207(b).

(iii) The entry operations covered by the entry permit have been completed.

(e) Transfer of supervisory responsibilities. If responsibility for the entry operation is transferred to another entry supervisor, then the new entry supervisor must:

(1) Meet the requirements specified above in Sec. 1926.1210(e)(2) (Entry supervisor requirements).

(2) Review the entry permit and verify that entry conditions are consistent with the planned conditions specified in the entry permit.

(3) Sign the entry permit.

(f) Attendant duties. Each attendant:

- (1) Continuously maintains an accurate count of authorized entrants who are in the PRCS.
- (2) Has a means to accurately identify authorized entrants who are in the PRCS (Sec. 1926.1214(a)(2)(ii)(A) specifies the means for doing so).
- (3) Remains at a location outside the PRCS that allows the attendant to fully perform the duties and responsibilities specified in this section and does so until properly relieved by another attendant.
- (4) Monitors entry conditions to determine if they are consistent with the entry permit.
- (5) Communicates with authorized entrants as necessary to monitor entrant status and to alert entrants of the need to evacuate the PRCS as specified below in paragraph (g)(2) of this section.
- (6) Monitors activities inside and outside the PRCS to determine if the PRCS remains safe for authorized entrants and informs the rescue service whenever a non-entry or entry rescue is required.
- (7) Informs the employer if a non-entry or entry rescue begins or an authorized entrant may need medical aid or assistance in escaping from the PRCS.
- (8) Performs non-entry rescue as required in paragraph (h)(1) of this section and in accordance with Sec. 1926.1213(a) (Non-entry rescue criteria).
- (9) Does not enter a PRCS for rescue purposes unless the employer: provides the attendant with the appropriate training and equipment specified below in Sec. 1926.1213(c) (Protecting and training rescue- service employees), and ensures that another attendant properly relieves the attendant prior to performing the entry rescue.
- (10) Performs no duties that could interfere with the primary duty to monitor and protect the authorized entrants.
- (11) Warns any individual who is not an authorized entrant, and who approaches a PRCS during entry operations, to stay away from the PRCS. If the individual enters the PRCS, the attendant must tell the individual to exit immediately, and inform the authorized entrants and entry supervisor of the unauthorized entry.
- (12) Evacuation. Orders authorized entrants to exit the PRCS as quickly as possible if required under either paragraph (f)(12)(i) or (f)(12)(ii) of this section, as follows:
 - (i) The attendant detects or learns of any of the following:
 - (A) An unplanned condition.
 - (B) Any sign, symptom, unusual behavior or other effect of a hazard in an authorized entrant.
 - (C) An evacuation alarm.
 - (D) A situation outside the PRCS that could endanger the authorized entrants.
 - (ii) The attendant cannot effectively and safely perform all the duties required by this section and cannot immediately be replaced.

(g) Authorized entrant duties. During PRCS entry operations, each authorized entrant:

- (1) Properly uses the retrieval equipment required below in paragraphs (a)(2) through (a)(4) of Sec. 1926.1213 (requirements for non-entry retrieval systems).
- (2) Communicates with the attendant as necessary so that the attendant can monitor the authorized entrant's status and alert the entrant of the need to evacuate the PRCS, as required

above in paragraph (f)(5) of this section (requirements for attendant-to- authorized entrant communications).

(3) Informs the attendant of any sign, symptom, unusual behavior or other effect of a hazard.

(4) Evacuation. Exits from the PRCS as quickly as possible if either:

(i) The entry supervisor or the attendant orders the authorized entrant to evacuate the PRCS; or

(ii) The authorized entrant detects or learns of any of the following:

(A) An unplanned condition (for example, a new hazard) in or near the PRCS.

(B) Any sign, symptom, unusual behavior or other effect of a hazard.

(C) An evacuation alarm.

(h) Rescue. Non-entry rescue and entry rescue is provided as follows:

(1) Non-entry rescue.

(i) Provide non-entry rescue capability during the period that authorized entrants are in the PRCS that meets the requirements of Sec. 1926.1213(a).

(ii) Except where the conditions specified in paragraph (h)(1)(iii) of this section are present, non-entry rescue must be initiated if required under paragraphs (h)(1)(ii)(A) or (h)(1)(ii)(B) of this section, as follows:

(A) There is a need to evacuate pursuant to paragraphs (d)(3), (f)(12), or (g)(4) of Sec. 1926.1211 and the employee is unable to evacuate without assistance; or

(B) There is a reasonable probability that an employee may need immediate medical aid and is unable to exit the PRCS without assistance.

(iii) Non-entry rescue shall not be initiated if doing so would present a greater hazard to the employee than sole reliance on entry rescue (for example, where the configuration of the space would cause the retrieval lines to not work or result in greater injury to the employee than injury from waiting for entry rescue).

(2) Entry rescue--when to summon. Ensure that an entry rescue service has been summoned immediately if any of the following occurs:

(i) A non-entry rescue is initiated.

(ii) There is a need to evacuate pursuant to paragraphs (d)(3), (f)(12), or (g)(4) of Sec. 1926.1211 and the employee is unable to evacuate without assistance.

(iii) There is a reasonable probability that an employee may need immediate medical aid and is unable to exit the PRCS without assistance.

(iv) Non-entry rescue is prohibited under conditions specified in Sec. 1926.1211(h)(1)(iii).

1926.1212 PRCS -Terminating Entry.

- (a) The employer must implement procedures for safely terminating PRCS entry operations under both planned conditions and in an emergency.
- (b) Entry supervisor requirements. The employer must ensure that an entry supervisor terminates entry and cancels the entry permit upon expiration of the entry permit, completion of the entry operations covered by the permit, any of the indications that require reassessment under Sec. 1926.1207(b), or an evacuation required under Sec. 1926.1211(d)(3), whichever occurs first.

Note to Sec. 1926.1212(b): After entry is terminated, no employees can reenter the space until the employer: Identifies the physical and atmospheric hazards in accordance with Sec. 1926.1204(b); follows the classification procedures specified by Sec. 1926.1206 (Classification and precautions); and meets the accident-prevention and -protection requirements applicable to the space classification selected by the employer.

1926.1213 PRCS - Rescue Criteria.

- (a) Non-entry rescue criteria. For non-entry rescue, the employer must meet the following requirements:
- (1) Ensure that attendants and employees designated to perform non- entry rescue acquire the knowledge and skills necessary for the safe performance of non-entry rescue.
 - (2) Use a retrieval system that:
 - (i) Is available as soon as needed by the attendant or other rescue service.
 - (ii) Is designed and manufactured for personnel retrieval; however, a job-made hoisting system is permissible if it is approved for personnel hoisting by a registered professional engineer prior to use.
 - (iii) The attendant or other rescue service can operate effectively.
 - (iv) Has a chest or full-body harness and a retrieval line. The retrieval line must have:
 - (A) One end attached in a manner that allows the attendant or other rescue service to remove the entrant from the PRCS without causing further injury.
 - (B) The other end attached to a mechanical retrieval device or fixed anchor point outside the PRCS in a manner that allows rescue to begin as soon as the attendant or other rescue service detects or learns of the need for rescue. Movable equipment (for example, earth- moving equipment), that is sufficiently heavy to serve as an anchor point, may be used for this purpose only if effectively locked out or tagged out.
 - (3) For retrievals involving vertical distances over 5 feet (1.52 m), a mechanical retrieval device must be provided and used. This device must not be used for entry into the PRCS unless it is designed for that purpose.
 - (4) Equipment that is unsuitable for retrieval, including the following equipment, must not be used:
 - (i) Equipment that increases the overall risk of entry or impedes rescue of an authorized entrant.
 - (ii) Retrieval lines that have a reasonable probability of becoming entangled with the retrieval lines used by other authorized entrants, or will not work due to the internal configuration of the PRCS (see Sec. 1926.1211(h)(1)(iii)).

(iii) Wristlets or ankle straps used as attachment points for retrieval lines, unless the employer can demonstrate that: Use of a harness is infeasible or creates a greater hazard for safe rescue than wristlets or ankle straps; and wristlets or ankle straps are the safest alternative available.

(5) Prior to beginning entry operations, ensure that the employees designated to perform non-entry rescue (including attendants, if applicable) have access to the PRCS the authorized entrant will enter or to a Simulated PRCS, so it can develop appropriate rescue plans and practice rescue operations.

(b) Entry rescue: Preparing rescue-service employees.

(1) The employer must ensure that the entry rescue service can effectively perform entry-rescue tasks in the PRCSs the authorized entrant(s) will enter. Accordingly, the employer must ensure that the entry rescue service:

(i) Can respond to a rescue summons in a timely manner. Timeliness depends on how quickly serious physical harm may result from the physical or atmospheric hazards in the PRCS.

(ii) Prior to beginning entry operations, has access to the PRCS the authorized entrants will enter or to a Simulated PRCS so the entry rescue service can develop appropriate rescue plans and practice rescue operations.

(2) Prior to the entry rescue service entering a PRCS for any purpose, the employer must inform them of the physical and atmospheric hazards they are likely to encounter when performing rescue operations in the PRCS, and other relevant information actually known by the employer.

(c) Protecting and training entry rescue-service employees.

Employers of entry rescue-service employees must:

(1) Provide them with the personal protective equipment (PPE) and rescue equipment (including retrieval lines if necessary) required to make safe rescues.

(2) Train them in the proper use of the PPE and rescue equipment.

(3) Train them to perform assigned rescue duties.

(4) Train them in basic first aid and in cardiopulmonary resuscitation (CPR).

(5) Ensure that at least one member of the entry rescue service who participates in the onsite rescue operations holds current certification in first aid (including CPR).

(6) Ensure that the entry rescue-service employees practice rescue operations at least once prior to beginning entry operations and at least once every 12 months thereafter. This practice must involve:

(i) Removing dummies/mannequins or individuals from the PRCS the authorized entrants will enter, or from a Simulated PRCS. In doing so, comply with the requirements of this standard that apply to the confined space used for this purpose.

(ii) Using the same PPE, retrieval, and rescue equipment they would use to perform retrieval or rescue operations in the PRCS.

(d) Exemption from practice. An employer is exempt from the requirement to practice rescue operations if the entry rescue-service employees properly performed a rescue operation during the last 12 months in the same PRCS the authorized entrant will enter, or in a similar PRCS.

1926.1214 PRCS--entry permits.

- (a) Contents. Employers must ensure that the entry permits for PRCSs include the following:
- (1) General information
 - (i) An identification of the PRCS to be entered.
 - (ii) The purpose (including the tasks/job) of entering the PRCS.
 - (iii) The effective date and the authorized duration of the entry permit. The duration of the permit is prohibited from exceeding the time required to complete the tasks/job identified in paragraph (a)(1)(ii) of this section.
 - (2) Planned conditions for entry
 - (i) Hazard information.
 - (A) Identify the physical and atmospheric hazards the PRCS is subject to (that is, all physical and atmospheric hazards, regardless of how they have been isolated or controlled, or how authorized entrants are protected from them) consistent with the requirements of Sec. Sec. 1926.1206 (Classifications and precautions) and 1926.1208(a) (Permit-required confined space (PRCS) classification requirements).
 - (B) State the methods used to isolate or control hazards, or used to protect authorized entrants from hazards in the PRCS. This information must be consistent with the requirements specified in Sec. Sec. 1926.1208(a) (Permit-required confined space (PRCS) classification requirements) and 1926.1210 (PRCS--preparing for entry), and must include, as applicable, the methods used to isolate or control the hazards, the type of personal protective equipment provided, the methods used to monitor each hazard (including the use of early-warning systems, if required by Sec. 1926.1215), and how frequently each hazard is to be monitored.
 - (C) State the atmospheric-testing and -monitoring results obtained in Sec. Sec. 1926.1204(b) (requirements for determining confined-space hazards), 1926.1211 (PRCS--during entry), and 1926.1215(a)(1) (requirements for continuous atmospheric monitoring of CS-PRCSs). Include the type and brand of the equipment used, the names and signature/initials of the individuals who performed these functions, as well as the date and time (or time period, for continuous monitoring) they performed them.
 - (D) List the conditions under which authorized entrants can work safely in the PRCS, including hazard levels and methods of employee protection, consistent with the requirements specified in Sec. 1926.1208(b) (Planned conditions). In addition, when applicable, the determinations made in paragraph (b)(2) of Sec. 1926.1208.
 - (ii) Personnel, equipment, and procedures.
 - (A) Identify by name (or other effective identifier) each authorized entrant who is currently in the PRCS. This requirement can be met by referring in the entry permit to a system, such as a roster or tracking system, used to keep track of who is currently in the PRCS.
 - (B) List the names of the current attendants.
 - (C) Clearly indicate the name of the current entry supervisor and the entry supervisor who originally authorized entry into the PRCS. In addition, include the signatures or initials of both of these individuals.
 - (D) Identify the methods used during entry operations to maintain contact between authorized entrants and attendants.

- (E) Identify the rescue service that will rescue workers during emergencies, and the methods for summoning this service, including the communication equipment to use and the telephone numbers to call.
- (F) Identify the equipment needed (see Sec. Sec. 1926.1210(j) (Equipment) and 1926.1218 (Equipment), and, for CS-PRCSs, Sec. 1926.1215(b)).
- (3) Other information--(i) Identify additional permits issued to perform authorized work in the PRCS (for example, hot-work permits).
 - (ii) Provide any other information necessary to ensure employee safety in or near the PRCS, including notations of any problems encountered.

Note to Sec. 1926.1214(a): Appendix B to this subpart provides an example of an entry permit.

(b) Annual PRCS review.

The employer must review, at least annually, PRCS entries made during the previous 12 months to determine if there are deficiencies in the employer's entry operation procedures.

For this review, the employer must use:

- (1) Canceled entry permits retained as required by Sec. 1926.1219(b) (Retaining entry permits).
- (2) Any other information retained regarding entry operations.

(c) Retaining entry permits. Entry permits must be kept in accordance with the requirements of Sec. 1926.1219(b).

(d) Canceling entry permits. Entry permits must be cancelled in accordance with Sec. 1926.1211(d)(4).

1926.1215 Continuous System--PRCS.

(a) For a Continuous System-PRCS (CS-PRCS), the employer must complete all requirements in Sec. Sec. 1926.1208 through 1926.1214, as well as:

- (1) Monitor continuously for atmospheric hazards; employers may use periodic monitoring for monitoring an atmospheric hazard if they can demonstrate that equipment for continuously monitoring that hazard is not commercially available.
- (2) Monitor continuously for non-isolated engulfment hazards using an early-warning system. The system must alert authorized entrants and attendants in sufficient time for the authorized entrants to safely exit the CS-PRCS.

(b) Equipment. In addition to the equipment required in Sec. Sec. 1926.1210(j) and 1926.1218, the employer shall also provide:

- (1) Equipment necessary for monitoring of atmospheric hazards.
- (2) An early-warning system for continuous monitoring of non- isolated engulfment hazards. The system must alert authorized entrants and attendants in sufficient time for the authorized entrants to safely exit the CS-PRCS.

1926.1216 Controlled-atmosphere confined spaces—requirements for classification and accident prevention and protection.

- (a) The requirements for classifying a Controlled-Atmosphere Confined Space (CACS) are:
- (1) For each physical hazard that was identified using the procedures specified in Sec. 1926.1204(b), determine and implement an isolation method.
 - (2) Ventilation.
 - (i) Test the atmosphere while using ventilation equipment to verify that ventilation alone is sufficient to control these atmospheric hazards at safe levels. Ventilation must consist of continuous forced- air mechanical systems that meet the requirements of 29 CFR 1926.57 (Ventilation).
 - (ii) Determine that, in the event the ventilation system stops working, the monitoring procedures will detect an increase in atmospheric hazard levels in sufficient time for the entrants to safely exit the CACS.

Note to Sec. 1926.1216(a)(2)(ii): The following paragraph requires documentation of this determination.

(3) Document that all physical hazards have been isolated and that ventilation alone is sufficient to control the atmospheric hazards. The documentation must contain: The location of the CACS, identity of the physical hazards, methods for isolating the physical hazards, date and time the physical hazards were isolated and name and signature/initials of the individual who completed the isolation work, the identity and safe levels of the atmospheric hazards, methods for controlling the atmospheric hazards, atmospheric-testing results, date and time of atmospheric testing and the name and signature/initials of the individual who completed the atmospheric testing, the determinations made under paragraph (a)(2)(ii) of this section, name and signature/ initials of the person who completed this document, and the date and time the document was completed. The documentation shall be made available by posting or other methods to each employee entering the space and to that employee's authorized representative.

Note to Sec. 1926.1216(a)(3): Appendix B to this subpart provides an example of a verification document.

- (b) Accident-prevention and protection requirements. The employer must:
- (1) Notification and posting danger signs.
 - (i) Notify the employees that the employer anticipates will be in or near the CACS and their authorized representatives about the location of, and the dangers posed by, all CACSs located at the job site.
 - (ii) Post danger signs to notify employees about a CACS. Posting signs near the outside entrances to the CACS that read, "Danger-- Controlled-Atmosphere Confined Space-- Authorized Employees Only," or similar language, will meet this requirement. If the employer demonstrates that a sign is infeasible, then it must use an equally effective means of warning employees.

(2) Training.

- (i) Ensure that each of its employees who enter a CACS acquires the knowledge and skills necessary for the safe performance of CACS entry operations. This training must result in an understanding of the hazards in the CACS that the employee will enter, the methods used to isolate or control these hazards, and recognition of signs, symptoms, and characteristic effect (such as behavioral effects) of exposure to these hazards.
- (ii) Hazards of rescue. Train the employees that the employer anticipates will be in or near the CACS and not authorized to perform entry rescues about the dangers of such rescues.
- (iii) When to train under paragraphs (b)(2)(i) and (b)(2)(ii) of this section:
 - (A) Prior to the employee's initial entry.
 - (B) If an employee the employer anticipates will be in or near a CACS receives a change in assigned tasks and additional training is necessitated by the change in tasks, any additional training that relates to maintaining the conditions necessary to comply with the requirements of the CACS classification must be completed before the employee enters the CACS to perform these newly assigned tasks.
 - (C) If a new hazard is introduced or occurs in the CACS for which the employee received no previous training, the employee must exit the space and complete the training before resuming work in the space.
- (iv) Ensure that the employee can demonstrate proficiency in the duties required by this standard, including new and revised procedures.
- (v) Training records. Maintain training records for each employee.
 - The training records must:
 - (A) Show that the employee accomplished the training requirements specified in paragraph (b)(2) of this section before entering a CACS.
 - (B) Contain the employee's name, names of the trainers, and dates of the training.

(c) General preparations for entry. Before any employee enters a CACS, the employer must:

- (1) Prior to removing an entrance cover, eliminate any condition (for example, high pressure in the space) that makes it unsafe to remove the entrance cover.
- (2) Outside the space, when necessary to protect employees working in and around the space, promptly: Use guardrails or covers as specified in 29 CFR 1926.502 (Fall protection systems criteria and practices) of subpart M (Fall Protection) to guard holes and openings into the space from falling individuals and objects and institute measures to control pedestrian and vehicle traffic in accordance with the requirements in 29 CFR Part 1926 subpart G (Signs, Signals, and Barricades).
- (3) Ensure that a safe method of entering and exiting a CACS (such as stairways or ladders) is provided and used, and that it meets applicable OSHA requirements. If a hoisting system is used, it must be designed and manufactured for personnel hoisting; however, a job-made hoisting system is permissible if it is approved for personnel hoisting by a registered professional engineer prior to use.

(d) Before entry. Immediately before any employee enters a CACS, the employer must:

- (1) Ensure that the physical hazards identified in Sec. 1926.1204(b) remain isolated.

- (2) Test for atmospheric hazards as specified in Sec. 1926.1205(a) to ensure that the ventilation is controlling the atmospheric hazards at safe levels.
- (3) Control the atmospheric hazards at safe levels using ventilation alone. Ventilation must consist of continuous forced-air mechanical systems that meet the requirements of 29 CFR 1926.57 (Ventilation).
- (4) Document that the physical hazards are isolated and the atmospheric hazards are being controlled. The documentation must contain: The location of the CACS, identity of the physical hazards, methods for isolating the physical hazards, date and time of determining that physical hazards remain isolated and the name and signature/initials of the individual who made this determination, identity and safe level of atmospheric hazards, methods for controlling the atmospheric hazards, atmospheric-testing results, date and time of atmospheric testing and the name and signature/initials of the individual who completed the atmospheric testing, name and signature/initials of the individual who completed this document, and the date and time the document was completed. The documentation shall be made available by posting or other methods to each employee entering the space and to that employee's authorized representative.
- (e) During entry. While any employee is in a CACS, the employer must:
- (1) Ensure that the physical hazards identified above in Sec. 1926.1204(b) remain isolated.
- (2) Ensure that ventilation alone is controlling atmospheric hazards at safe levels by monitoring for atmospheric hazards as specified above in Sec. 1926.1205(a) (requirements for atmospheric testing and monitoring). Monitoring must be continuous unless the employer can demonstrate that the equipment for continuously monitoring a hazard is not commercially available or periodic monitoring is sufficient. Where periodic monitoring is used, it must be of sufficient frequency to ensure that atmospheric hazards are being controlled at safe levels.
- (3) Document the determinations made above in paragraphs (e)(1) and (e)(2) of this section by completing a written verification that contains: The location of the CACS, identity of the physical hazards, methods for isolating the physical hazards, date and time of determining that physical hazards remain isolated and the name and signature/initials of the individual who made this determination, identity and safe level of atmospheric hazards, methods for controlling the atmospheric hazards, atmospheric-monitoring results, date and time of atmospheric monitoring and the name and signature/initials of the individual who completed the atmospheric monitoring, name and signature/initials of the individual who completed this document, and the date and time the document was completed. The documentation shall be made available by posting or other methods to each employee entering the space and to that employee's authorized representative.
- (f) Emergencies. In the event an emergency occurs during entry operations, including the presence of a non-isolated physical hazard or atmospheric hazard at unsafe levels, then the employer must:
- (1) Ensure that the employees exit the CACS immediately.
- (2) Identify the physical and atmospheric hazards in accordance with Sec. 1926.1204(b).
- (3) Using the information obtained in the preceding provision, follow the classification procedures specified by Sec. 1926.1206 (Classification and precautions), and meet the

accident-prevention and -protection requirements applicable to the space classification selected by the employer before any employee reenters the space.

1926.1217 Isolated hazard confined spaces--requirements for classification and accident prevention and protection.

(a) The requirements for classifying a confined space as an Isolated-Hazard Confined Space (IHCS) are:

- (1) For each physical hazard that was identified using the procedures in Sec. 1926.1204(b), determine and implement an isolation method.
- (2) For each atmospheric hazard that was identified using the procedures in Sec. 1926.1205(a), determine and implement an isolation method.
- (3) The employer must accomplish the isolation of the hazards in paragraphs (a)(1) and (a)(2) of this section without entering the IHCS, unless it can demonstrate that this is infeasible. If it is infeasible to do this work without entering the IHCS, then the employer must follow the requirements for a PRCS (Sec. Sec. 1926.1208 through 1926.1214) and, if applicable, for a CS-PRCS (Sec. 1926.1215) to protect employees entering the space to do this work.
- (4) Document that isolation of all hazards has been accomplished.

The documentation must contain: The location of the IHCS, identity of the physical hazards, methods for isolating the physical hazards, date and time the physical hazards were isolated and name and signature/ initials of the individual who completed the isolation work, the identity of atmospheric hazards, methods for isolating the atmospheric hazards, the date and time the atmospheric hazards were isolated and the name and signature/initials of the individual who completed the isolation work, name and signature/initials of the individual who completed this document, and the date and time the document was completed. The documentation shall be made available by posting or other methods to each employee entering the space and to that employee's authorized representative.

(b) Training. Before any employee enters an IHCS, the employer must:

- (1) Ensure that the employee acquires the knowledge and skills necessary to recognize signs, symptoms, and characteristic effects (such as behavioral effects) of exposure to these hazards. This training must also result in an understanding of the methods used to isolate these hazards.
- (2) Hazards of rescue. Train employees the employer anticipates will be in or near the IHCS and not authorized to perform entry rescues about the dangers of attempting such rescues.

Note to Sec. 1926.1217(b): No documentation is required for this training.

(c) General preparations for entry. Before any employee enters an IHCS, the employer must:

- (1) Prior to removing an entrance cover, eliminate any condition (for example, high pressure in the space) that makes it unsafe to remove the entrance cover.
- (2) Outside the space, when necessary to protect employees working in and around the space, promptly: Use guardrails or covers as specified in 29 CFR 1926.502 (Fall protection systems criteria and practices) of subpart M (Fall Protection) to guard holes and openings into the space from falling individuals and objects and institute measures to control pedestrian and

vehicle traffic in accordance with the requirements in 29 CFR part 1926 subpart G (Signs, Signals, and Barricades).

(3) Ensure that a safe method of entering and exiting an IHCS (such as stairways or ladders) is provided and used, and that it meets applicable OSHA requirements. If a hoisting system is used, it must be designed and manufactured for personnel hoisting; however, a job-made hoisting system is permissible if it is approved for personnel hoisting by a registered professional engineer prior to use.

(d) Before entry. Before any employee enters an IHCS, the following must be met:

(1) Ensure that the physical hazards identified above in Sec. 1926.1217(a)(1) (requirements for isolating physical hazards) are isolated.

(2) Ensure through testing that the atmospheric hazards identified above in paragraph (a)(2) of this section are isolated.

(3) Document the determinations made and the actions taken above in paragraphs (d)(1) and (d)(2) of this section by completing a written verification that contains: The location of the IHCS, identity of the physical hazards, methods for isolating the physical hazards, date and time the physical hazards were isolated, date and time of determining that physical hazards remain isolated and the name and signature/ initials of the individual who made this determination, identity of the atmospheric hazards, methods for isolating the atmospheric hazards, date and time the atmospheric hazards were isolated, date and time of determining that atmospheric hazards remain isolated and the name and signature/initials of the individual who made this determination, name and signature/initials of the individual who completed this document, and date and time the document was completed. The documentation shall be made available by posting or other methods to employees entering the space and to the employees' authorized representative.

(e) During entry

(1) Hazard isolation. Once any employee enters an IHCS, the employer must ensure that the physical and atmospheric hazards identified above in Sec. 1926.1217(a) (requirements for classifying IHCSs) remain isolated.

(2) Emergencies. In the event an emergency occurs during entry operations, including the presence of a non-isolated physical or atmospheric hazard, then the employer must:

(i) Ensure that the employees exit the IHCS immediately.

(ii) Identify the physical and atmospheric hazards in accordance with Sec. 1926.1204(b).

(iii) Using the information obtained in the preceding provision, follow the classification procedures specified by Sec. 1926.1206 (Classification and precautions), and meet the accident-prevention and -protection requirements applicable to the space classification selected by the employer before any employee reenters the space.

1926.1218 Equipment.

(a) The employer must provide and ensure the use of the following equipment:

(1) Atmospheric-testing and -monitoring equipment needed to comply with this standard.

(2) Forced-air mechanical ventilation equipment where needed to meet the requirements of this standard.

- (3) Personal protective equipment, including respirators, if needed to comply with this standard. If employees use respirators, then the respirator requirements in 29 CFR 1926.103 (Respiratory protection) must be met.
- (4) Any other equipment necessary for safe confined space operations.

Note to Sec. 1926.1218(a): There are additional equipment requirements for PRCs (Sec. 1926.1210(j)) and for C-PRCs (Sec. 1926.1215(b)).

- (b) Equipment maintenance, calibration, and use. The employer shall ensure that all equipment needed to comply with this standard is maintained, calibrated, and used as specified by:
 - (1) Applicable OSHA requirements.
 - (2) In the absence of applicable OSHA requirements, in accordance with:
 - (i) The manufacturer's instructions; or
 - (ii) If manufacturers' instructions are not available, the recommendations of a qualified individual as defined by 29 CFR 1926.32(m).

1926.1219 Records.

- (a) Copy of this standard. For sites where there is a confined space, the employer must maintain a copy of this standard at the site. Alternatively, the employer may maintain a copy of a written confined space program at the site that incorporates the requirements of this standard.
- (b) Retaining entry permits. The employer must retain entry permits for at least one year from the date the permit is cancelled.

Note to Sec. 1926.1219(b): With regard to retention and access to employee exposure records, the employer must comply with the requirements of 29 CFR 1910.1020 (Access to employee exposure and medical records), which are made applicable to construction by 29 CFR 1926.33.

- (c) The employer must maintain training records, as specified in Sec. 1926.1209(d)(5) (PRCs) and 1926.1216(b)(2)(v) (CACs), for the period of time the employee is employed by them.
- (d) The employer must maintain verification documents required in Sec. 1926.1216(a)(3), (d)(4), and (e)(3) (CACs) and 1926.1217(a)(4) and (c)(3) (IHCS) until the work in the confined space is completed.

Note to Sec. 1926.1219(d): With regard to retention and access to employee exposure records, the employer must comply with the requirements of 29 CFR 1910.1020 (Access to employee exposure and medical records), which are made applicable to construction by 29 CFR 1926.33.

- (e) The employer must make the documents required to be retained in this standard available on request to the Secretary of Labor or the Secretary's designee.

Appendix A to Subpart AA of Part 1926

List of Confined-Space Requirements in Other Construction Standards That Supplement the Requirements of Subpart AA (Mandatory)

The construction standards listed below have confined-space requirements for the performance of specific activities and equipment. Employers must comply with these provisions, as well as this subpart.

Subpart D--Occupational Health and Environmental Controls

Process safety management requirements: Sec. Sec. 1926.64(f)(4) and (j) HAZWOPER requirements: Sec. Sec. 1926.65(b)(4)(ii)(I), (c) through (p), and (j)(9).

Subpart J--Welding and Cutting

Sec. Sec. 1926.353(a), (b), (c), (d), and (e).

Subpart V--Power Distribution and Transmission

Sec. Sec. 1926.956(a) and (b).

Appendix B to subpart AA of part 1926

Sample Entry Permit for PRCs and CS-PRCs and Sample Verification Document for CACs and IHCSs (Non-Mandatory)

NOTE: Appendix B was not available at the time that this document was created. 9-16-2012
http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=FEDERAL_REGISTER&p_id=20174