



Safety and Risk Management

Confined Space Entry

Virginia Occupational Safety and Health (VOSH) requires compliance with 1910.Subpart-J of the OSHA standards for any confined space entry. VCU and the VCU Health System **does not allow employees to enter permit-required confined spaces** in violation of that standard.

Definitions:

Confined space means a space that:

- (1) Is large enough and so configured that an employee can bodily enter and perform assigned work; and
- (2) Has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry.); and
- (3) Is not designed for continuous employee occupancy.

Entry means the action by which a person passes through an opening into a permit-required confined space. Entry includes ensuing work activities in that space and is considered to have occurred as soon as any part of the entrant's body breaks the plane of an opening into the space.

Permit-required confined space (permit space) means a confined space that has one or more of the following characteristics:

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

Permit-required confined space program (permit space program) means the employer's overall program for controlling, and, where appropriate, for protecting employees from permit space hazards and for regulating employee entry into permit spaces. NOTE: VCU and VCU Health System departments do not currently have a program in place that would allow their employees to enter such spaces.

Permit system means the employer's written procedure for preparing and issuing permits for entry and for returning the permit space to service following termination of entry.

Entry permit (permit) means the written or printed document that is provided by the employer to allow and control entry into a permit space.



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Non-permit confined space means a confined space that does not contain or, with respect to atmospheric hazards, have the potential to contain any hazard capable of causing death or serious physical harm.

Hazardous atmosphere means an atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self-rescue (that is, escape unaided from a permit space), injury, or acute illness from one or more of the following causes:

- (1) Flammable gas, vapor, or mist in excess of 10 percent of its lower flammable limit (LFL);
- (2) Airborne combustible dust at a concentration that meets or exceeds its LFL;
(NOTE: This concentration may be approximated as a condition in which the dust obscures vision at a distance of 5 feet (1.52 m) or less.)
- (3) Atmospheric oxygen concentration below 19.5 percent or above 23.5 percent;
- (4) Atmospheric concentration of any substance for which a dose or a permissible exposure limit is published in Subpart G, Occupational Health and Environmental Control, or in Subpart Z, Toxic and Hazardous Substances, of this Part and which could result in employee exposure in excess of its dose or permissible exposure limit;
(NOTE: An atmospheric concentration of any substance that is not capable of causing death, incapacitation, impairment of ability to self-rescue, injury, or acute illness due to its health effects is not covered by this provision.)
- (5) Any other atmospheric condition that is immediately dangerous to life or health.
(NOTE: For air contaminants for which OSHA has not determined a dose or permissible exposure limit, other sources of information, such as Safety Data Sheets that comply with the Hazard Communication Standard, section 1910.1200 of this Part, published information, and internal documents can provide guidance in establishing acceptable atmospheric conditions.)

Immediately dangerous to life or health (IDLH) means any condition that poses an immediate or delayed threat to life or that would cause irreversible adverse health.

Oxygen deficient atmosphere means an atmosphere containing less than 19.5 percent oxygen by volume.

Oxygen enriched atmosphere means an atmosphere containing more than 23.5 percent oxygen by volume.

Testing means the process by which the hazards that may confront entrants of a permit space are identified and evaluated. Testing includes specifying the tests that are to be performed in the permit space.

(NOTE: Testing enables employers both to devise and implement adequate control measures for the protection of authorized entrants and to determine if acceptable entry conditions are present immediately prior to, and during, entry.)



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General requirements:

Work areas will be evaluated to determine if any spaces are permit-required confined spaces. Known areas include: storage tanks, pits, boilers, vats, ventilation and exhaust ducts, sewers, tunnels, underground utility vaults, excavations, elevator pits, large pipes and pipe-lines.

When identified, departments shall inform exposed employees, by posting danger signs or by any other equally effective means, of the existence and location of and the danger posed by the permit spaces.

NOTES:

- 1. A sign reading DANGER -- PERMIT-REQUIRED CONFINED SPACE, DO NOT ENTER or using other similar language would satisfy the requirement for a sign. Signs can be obtained from Occupational Safety.*
- 2. Departments who wish to undertake developing the intensive training, equipment purchases, and permit process to permit entry into confined spaces must contact Occupational Safety in order to assure the department will be able to meet all applicable OSHA standards for such entry.*

Non-permit confined space that does not contain or, with respect to atmospheric hazards, have the potential to contain any hazard capable of causing death or serious physical harm may be entered provided departments (with Occupational Safety assistance):

- Can demonstrate that the only hazard posed by the permit space is an actual or potential hazardous atmosphere;
- Can demonstrate that continuous forced air ventilation alone is sufficient to maintain that permit space safe for entry;
- Develop monitoring and inspection data that supports the demonstrations required by paragraphs above.
- If an initial entry of the permit space is necessary to obtain the data required by this section, the entry is performed in compliance with OSHA permit required confined space regulations (most likely by use of a contractor).
- The determinations and supporting data required by this section are documented by and are made available to each employee who enters the space under the terms of this section or to that employee's authorized representative.
- Any conditions making it unsafe to remove an entrance cover shall be eliminated before the cover is removed.
- When entrance covers are removed, the opening shall be promptly guarded by a railing, temporary cover, or other temporary barrier that will prevent an accidental fall through the opening and that will protect each employee working in the space from foreign objects entering the space.
- Before an employee enters the space, the internal atmosphere shall be tested, with a calibrated direct-reading instrument, for oxygen content, for flammable gases and vapors, and for potential



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toxic air contaminants, in that order. Any employee who enters the space, or that employee's authorized representative, shall be provided an opportunity to observe the pre-entry testing required by this paragraph.

- There may be no hazardous atmosphere within the space whenever any employee is inside the space.
- Continuous forced air ventilation shall be used, as follows:
 - An employee may not enter the space until the forced air ventilation has eliminated any hazardous atmosphere;
 - The forced air ventilation shall be so directed as to ventilate the immediate areas where an employee is or will be present within the space and shall continue until all employees have left the space;
 - The air supply for the forced air ventilation shall be from a clean source and may not increase the hazards in the space.
- The atmosphere within the space shall be periodically tested as necessary to ensure that the continuous forced air ventilation is preventing the accumulation of a hazardous atmosphere. Any employee who enters the space, or that employee's authorized representative, shall be provided with an opportunity to observe the periodic testing required by this paragraph.

If a hazardous atmosphere is detected during entry:

- Each employee shall leave the space immediately.
- The space shall be evaluated to determine how the hazardous atmosphere developed.
- Measures shall be implemented to protect employees from the hazardous atmosphere before any subsequent entry takes place.

The employer shall verify that the space is safe for entry and that the pre-entry measures required by this section have been taken, through a written certification that contains the date, the location of the space, and the signature of the person providing the certification. The certification shall be made before entry and shall be made available to each employee entering the space or to that employee's authorized representative.

When there are changes in the use or configuration of a non-permit confined space that might increase the hazards to entrants, the employer shall reevaluate that space and, if necessary, reclassify it as a permit-required confined space.

When contractors perform work that involves permit space entry, the department and Occupational Safety will:

- Inform the contractor that the workplace contains permit spaces and that permit space entry is allowed only through compliance with a permit space program meeting the VOSH requirements.
- Inform the contractor of the elements, including the hazards identified by experience with the space that make the space in question a permit space.
- Inform the contractor of any precautions or procedures that the host employer has implemented for the protection of employees in or near permit spaces where contractor personnel will be working;



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- Coordinate entry operations with the contractor, when both host employer personnel and contractor personnel will be working in or near permit spaces;
NOTE: VCU and VCU Health System employees will not enter confined spaces with contractors unless a full confined space entry procedure for that employee's department has been developed in conjunction with Occupational Safety.
- Debrief the contractor at the conclusion of the entry operations regarding the permit space program followed and regarding any hazards confronted or created in permit spaces during entry operations.

In addition to complying with the permit space requirements that apply to all employers, each contractor who is retained to perform permit space entry operations shall:

- Obtain any available information regarding permit space hazards and entry operations from the host employer;
- Coordinate entry operations with the host employer, when both host employer personnel and contractor personnel will be working in or near permit spaces.
- Inform the host employer of the permit space program that the contractor will follow and of any hazards confronted or created in permit spaces, either through a debriefing or during the entry operation.

Direct any questions to Occupational Safety Manager at 827-0357.