

Summary of Comments and Agency Decisions

Title: Confined Spaces OAR 437-002-0146, in General Industry and Construction

Administrative Order Number: 6-2012

Adopted: September 28, 2012

Effective: April 1, 2013

History:

In late November of 2007, federal OSHA published a proposed standard for confined spaces in the construction industry. After evaluating the proposed standard and discussing it with various stakeholders, Oregon OSHA convened a group of stakeholders, many of whom were from or represented the construction industry, in June of 2008 to discuss whether Oregon should adopt our own standard in lieu of the federal standard. The group consensus was to adopt our own standard. In the months that followed, the group carefully evaluated the proposed federal standard, the existing Oregon OSHA confined space standard, as well as the standard that was adopted by the Washington State Department of Labor and Industries.

Once the issues of the advantages and limitations of these standards were evaluated, Oregon OSHA began drafting our own standard to address these limitations and advantages. After completing the draft, we reconvened the stakeholder group to discuss the draft, and spent the following months discussing and modifying it to address identified issues, ensure employee safety, and improve readability.

During this time, the Oregon OSHA Administrator reiterated his position that any new rules encompass both the construction industry as well as general industry. After further modification of the draft, another group of stakeholders covered by the general industry rules was convened to evaluate and address the draft rule. The consensus of this second stakeholder group was to move forward with the draft, with some modifications. These modifications were shared both stakeholder groups, and the decision was made to move forward.

On September 1, 2011, Oregon OSHA filed the proposal for these changes. During the comment period, an internal review of the proposed rule noted several discrepancies between the proposed standard and the 1910.146 standard. After the comment period closed, a joint meeting was held with both stakeholder groups to discuss the discrepancies as well as the comments received during the comment period.

On March 21, 2012, Oregon OSHA re-proposed to adopt the revised confined space standard.

Summary and explanation:

(1) Purpose and application.

This rule applies to all activities in confined spaces, in both the construction industry as well as general industry, with certain exceptions.

Associated General Contractors (AGC) commented that having one rule to cover both general industry and construction would lead to confusion, stating,

There are enough differences in the construction industry applications to justify a separate standard. The standard currently proposed combines requirements for general industry and construction that is not anticipated to be as easily understood, let alone effectively implemented by the construction community.

Oregon OSHA does not agree. Our position is that the hazards of a confined space are specific to the space, not whether one is performing construction work or maintenance work within the space. Additionally, it is not uncommon for a construction worker to perform work in a confined space that falls within the scope of the construction standard one day and the general industry standard the next. If we were to adopt two standards, the construction community would need to ensure they are following the relevant standard, depending on the scope of the work performed within the space. We believe that this would be much more confusing to the construction community than having one rule that addresses the hazards of the space.

(2) Exceptions.

Our experience with the 1910.146 standard is that there continues to be a great deal of confusion regarding where the standard is applicable and where it is not. In the preamble to 1910.146, federal OSHA elected to not list exclusions because they felt it would be unnecessary and potentially confusing. Our experience is that the opposite is true, and have listed those areas where this rule is not applicable.

(a) Construction work regulated by OAR 437-003, Division 3/P Excavations, except for existing sanitary sewers and new sanitary sewers when connected to an existing sanitary sewer.

The proposed rule's language had all sewer work excepted from this exemption. Comments from the City of Portland and the Special Districts Association of Oregon (SDAO) questioned the inclusion of all sewers in this language. The original rationale for including this language was based on similar language in the proposed federal OSHA confined space for construction standard. However, a review of the language used indicated that "sewers" referred to sanitary sewers, not storm drains, and the language in the final rule was changed to reflect this.

The City of Portland also suggested that the justification for this language was lacking. Information that was previously provided to all members of the stakeholder groups, of which the City of Portland was a member, included two separate instances in 2011 alone, one in Texas (<http://ohsonline.com/articles/2011/12/28/osha-fines-utility-firm-118580-following-workers-death-in-manhole.aspx?admgarea=news>) and one in Michigan (http://www.mlive.com/news/flint/index.ssf/2011/08/miosha_to_investigate_into_dea.html) that involved worker fatalities where newly-constructed sewer lines were connected to existing lines. Oregon OSHA's position is that these incidents clearly demonstrate the need for these rules.

AGC questioned the purpose of paragraph (2)(h), which states,

Except for (a) through (g) above, when any other applicable standard addresses work in confined spaces or additional hazards that may be present, you must comply with the provisions of that standard and this standard. Where the requirements of one standard are more restrictive than the other, follow the more stringent requirements.

The purpose of this language is to make it clear that when any other rule has language regarding confined or enclosed spaces, other than those exempted in (2)(a) through (g), the requirements of that rule and this rule apply. If any provision of one rule is more restrictive than the other, the employer must follow the stricter provision.

(4) Evaluation.

(a) You must determine if there are confined spaces in your workplace. Ensure all confined spaces are part of this determination.

This language differs slightly from the proposed language, based on comments from AGC and SDAO. The expectation is that every employer needs to determine if their workplace includes confined spaces, with a few exceptions.

(A) Exceptions.

(i) Employers of mobile workers where the employer or controlling contractor is not the property owner are not required to perform this determination, but must follow the requirements of (4)(c) through (4)(e).

AGC questioned why mobile employers would not be responsible for this initial determination. This language is designed to make it clear that when workers are mobile, such as contractors, plumbers, electricians, etc, they are not required to evaluate the entire site they may be working at to determine if confined spaces are present. However, under (4)(c), they still must make this determination for the areas they are responsible for or where their employees will be working.

(ii) On sites where confined spaces are being built, the host employer or controlling contractor is not responsible for performing this evaluation unless:

- (I) Any of their employees enter that space.
- (II) An agent of the employer enters that space.
- (III) Employees of an employer responsible to that controlling contractor or host employer enter that space.
- (IV) They assume control over that space.

The Oregon Self-Insurers Association (OSIA) questioned what “assume control” under (IV) means. Typically, when a contractor is building a confined space (such as a vault), the contractor has control of that area for the duration of the job. When the job is completed, control is passed back to the entity that hired that contractor, and (IV) was written to reflect that. Absent the condition of (IV), a host employer who hires a contractor to build a confined space is not responsible for that space unless one of the conditions in (I) through (III) occur.

The condition listed in (I) is straightforward. When an entity hires a contractor to build a confined space, they are not responsible for that space unless they intend to send their own employees into that space. Similarly, if they send someone else, such as an agent responsible to that entity under (II) or hire another contractor to perform work in that space, they assume responsibility for that space.

(B) Before employees of another employer enter a confined space under your control, and you have information related to paragraph (4)(b), you must provide it to that employer.

Several commenters suggested that the original language in this section was confusing. We revised it to clarify this section. While a host employer or controlling contractor may not have information regarding the actual or potential hazards of a confined space, any information that they do have must be provided to any other entity whose employees will enter that space.

(b) You must evaluate all of your confined spaces to determine if they are permit-required confined spaces. This evaluation must include:

- (A) Any known or anticipated hazard.
- (B) The determination from any previous evaluation of that space.
- (C) Any precautions and procedures previously implemented for entering the space.

Once identified, all confined spaces must be evaluated for any reasonably anticipated actual or potential hazards associated with that space. Hazards can be atmospheric or physical. The definitions of physical and atmospheric hazards are written to explain that the types of hazards must be serious enough that they can cause serious harm or death. Physical hazards such as tripping and slipping hazards do not typically rise to the level of designating a space as permit-required, although there can be exceptions, which is part of why every space needs to be evaluated for hazards. A fall hazard, in and of itself, also does not typically make a confined space a permit-required confined space, as the rules for fall protection already address fall hazards. However, any space that is designated as a permit-required confined space for other hazards must still address the fall hazard on the permit.

(c) When your employees are mobile, you must determine if they will be exposed to confined spaces at their assigned work locations, and if those spaces are subject to any hazards. This determination must include information, if any, from the host employer or controlling contractor.

- (A) Determine if the space meets the definition of a confined space.
- (B) Identify any physical and atmospheric hazards that make the space a permit-required confined space.

This section was clarified based on comments from ODOT and OSIA to make it clear that the employer of mobile workers, such as contractors, electricians, plumbers, etc., is responsible for identifying and evaluating any confined space that their employees work around or in. While a host employer or controlling contractor must provide any information they have, they are not required to obtain this information if they don't already have it, unless their employees will be working around or in those spaces as well.

(d) When a space has hazards that make it a permit space:

(A) Develop and implement a means so employees can identify that space. Signs, labels, or tags are methods that can be used to accomplish this.

1910.146 requires that all permit spaces have signs or an equally-effective means of identification. For the final rule, the test is not whether or not signs have been placed, but rather that employees know how to recognize confined spaces, and signs or labels can be used for this purpose. This also ties into the training requirements in paragraph (11).

(B) Allow employees or their representatives to observe the evaluation or re-evaluation of the space.

(C) When conditions within a confined space or a permit space change, re-evaluate it.

(D) Take all necessary measures to prevent unauthorized employees from entering permit spaces.

These requirements are essentially unchanged from the 1910.146 standard.

(e) Ensure employees do not enter any unevaluated confined space until it is fully evaluated.

This is modified from the proposed standard, based on comments from AGC and OSIA.

(5) Permit-Required Confined Space Entry Program and Permits.

(a) When employees must enter a permit space, develop and implement a written program that describes the means, practices, and procedures to safely identify and enter permit spaces.

This paragraph was modified from the proposed language to clarify that this program only needs to be developed if an employer intends their employees to enter a permit space.

SDAO asked what precautions would be necessary for entering a confined space. Unless a confined space has the potential for hazards that would make it a permit space, or hazards are introduced as part of the entry, no further action is necessary.

(b) Ensure this program includes:

(A) Documentation of entry permit procedures.

(B) Measures taken to prohibit unauthorized persons from entering permit spaces.

(C) Designation of employee roles, such as entrants, attendants, entry supervisors, rescuers, or those who test or monitor the atmosphere in a permit space.

(D) Identification of designated employee duties.

(E) Training on the written program and entry permits.

(F) Training employees on their designated roles.

(G) Instructions to identify and evaluate hazards.

(H) Methods to eliminate and/or control hazards.

(I) Instructions on equipment use and maintenance.

- (J) Instructions to coordinate entry with another employer.
- (K) Procedures necessary for concluding the entry and canceling the permit after entry operations have been completed.

These elements are essentially unchanged from the 1910.146 requirements.

(c) On fixed sites, ensure this program also includes:

- (A) The location of all permit spaces.
- (B) The reason for the classification of each permit space or each type of permit space.

Note: Where there are multiple permit spaces of the same type that have the same hazards, such as sewers, water vaults, or valve pits, the exact location of each space does not need to be identified so long as there is enough information so that employees can readily identify each type of space and its hazards at each location.

While the 1910.146 standard does not require identifying all permit spaces as well as the rationale for that designation, doing so was seen as a good tool to both help ensure that all permit spaces were evaluated, as well as providing vital information to whomever may need to enter those spaces. There was discussion during the stakeholder meetings regarding situations where an employer may have many spaces that are essentially identical, and the note was added to make it clear that we do not expect employers to identify each separate space when the type of space and hazards are the same, so long as they provide enough information so that employees can readily identify those spaces from the information in the written program.

(C) Exception: The location of permit spaces at remote unmanned locations do not need to be added to the program until the first time employees go to that location after the effective date of this rule.

This was written with the understanding that some employers maintain remote facilities that are normally unattended. We do not expect employers to evaluate these sites until an employee has to go to that site, even if that employee will not enter confined spaces on that site. The employer can designate that employee to identify and evaluate the confined spaces at that site, but that person would need to understand how to recognize, identify, and evaluate confined spaces. The employer is ultimately responsible for the accuracy of the identification and evaluation, and any deficiencies in the identification and evaluation are the responsibility of the employer.

(d) Ensure employees and their representatives have access to the written program.

This is fundamentally unchanged from the 1910.146 requirement.

(e) Ensure procedures are developed and implemented for issuing permits. Ensure these procedures include how to:

- (A) Evaluate the hazards of the space.
- (B) Evaluate hazards of the work to be performed.
- (C) Identify safe entry conditions.

This section captures and combines requirements found in several places in the 1910.146 standard, and is intended to clearly identify the basic requirement that a process must be in place for how permits are issued. While the initial evaluation is necessary to determine if a space is a permit space or not, the process for issuing a permit is based not only on the hazards identified in that initial evaluation but on the actual and/or potential hazards at the time before entry is authorized. Other considerations must be made for hazards that can be introduced by external processes, such as the exhaust from gasoline-powered equipment or vehicles, as well as hazards that can be introduced by employees, equipment, and/or the nature of the work to be performed.

It is also important for this process to identify the conditions that must be maintained for safe entry, so that the attendant clearly understands the conditions that must be maintained during the entry and when to order an evacuation.

(f) Ensure entry permits include the following information:

- (A) The space to be entered.
- (B) The purpose of the entry.
- (C) The date, start, and stop times of the permit.
- (D) The hazards of the space.
- (E) Acceptable entry conditions.
- (F) Results of initial tests and periodic monitoring performed to evaluate and identify the hazards and conditions of the space, or the period for continuous monitoring, accompanied by the names or initials of the testers and by an indication of when the tests were performed.
- (G) Appropriate measures used before entry to isolate the space and eliminate or control hazards.

Examples of appropriate measures include the de-energizing and lockout or tagging of equipment, and procedures for purging, inerting, ventilating, and flushing permit spaces.

- (H) Names of entrants and current attendants.
- (I) The signature of the original supervisor authorizing entry.
- (J) The current entry supervisor.
- (K) Communication procedures for entrants and attendants to maintain contact during the entry.
- (L) Equipment provided for safe entry, such as:
 - (i) Personal protective equipment (PPE)
 - (ii) Testing and monitoring equipment
 - (iii) Communications equipment
 - (iv) Alarm systems
 - (v) Rescue equipment

- (M) Rescue services available, and how to contact them.
- (N) Other information needed for safety in the particular permit space
- (O) Additional permits issued for work in the space, such as for hot work.
- (P) Any problems, if any, encountered during the entry.

The information that must be included on the permit, other than some wording, is fundamentally unchanged from the requirements of the 1910.146 rule.

(g) Ensure entrants or their authorized representatives have access to the completed permit before entry so they can confirm that pre-entry preparations have been completed.

This requirement mirrors the 1910.146 text.

(h) Review the permit program when there is any reason to believe that employees are not adequately protected, and revise it as necessary.

(A) Situations that require this review include:

- (i) Unauthorized entry of a permit space.
- (ii) A previously unrecognized hazard is discovered.
- (iii) A condition prohibited by the permit or permit program exists.
- (iv) An injury or near-miss occurs during entry.
- (v) An employee reports concerns about the effectiveness of the program.
- (vi) Any other condition that affects employee safety or health.

The proposed text included a situation where a change occurs within the space. AGC and OSIA questioned the inclusion of that requirement as overly broad and vague. Oregon OSHA decided to remove that language, as the concept has already been captured within the other conditions.

(B) When revising the permit program to correct hazard-related deficiencies, do not allow entries into affected permit spaces to be made until the revisions are complete.

(C) Ensure employees and their representatives have access to the revised permit program.

These requirements mirror the 1910.146 text.

(i) Review permits within one year of their cancellation to evaluate:

- (A) The permit program.
- (B) The protection provided to employees entering permit spaces.

The text in the proposed rule referred to expired permits, and the language was changed to refer to cancelled permits. At the conclusion of any permit entry, the permit is cancelled by the entry supervisor, and the written program requires that there is a process for cancelling permits.

(6) Permit Entry.

This section was added at the recommendation of AGC. The text was taken from paragraphs (5)(e) through (5)(j) of the proposed text. Several language suggestions proposed by AGC were made as well.

- (a) Perform initial testing for atmospheric hazards, where necessary, before entry is made.
- (b) Provide each entrant or their authorized representative with the results of any initial testing before they enter the space.
- (c) Ensure safe entry conditions are maintained for the duration of the entry.

(A) When the space is too large to isolate, or is part of a continuous system, such as a sewer, ensure continuous monitoring where entrants are working for the duration of the entry.

There was some discussion with the stakeholders about where the monitoring would be appropriate for entrants in a large space. The initial testing occurs as normal, but continuous monitoring must occur in the area where employees are working. A typical monitoring situation for other types of entries involve the attendant performing the monitoring, but that may be insufficient where the entrant(s) is in another part of the space.

(B) When an entrant or their authorized representative has reason to believe that the testing or monitoring was inadequate, re-test the space.

- (d) Ensure all actions and precautions identified on the permit are followed.
- (e) When conditions require the space to be evacuated, do not allow re-entry unless you:

- (A) Re-assess the conditions of the space to ensure it is safe for re-entry and ensure the permit reflects the evacuation and subsequent re-assessment; or
- (B) Issue a new permit.

The language in these sections was modified at the suggestion of AGC.

- (f) Allow entrants or their authorized representatives the opportunity to observe monitoring, testing, and all other actions taken to eliminate or control the hazards of the space.

This requirement mirrors the 1910.146 text.

(7) Equipment.

- (a) When employees enter permit spaces, provide the following equipment as necessary:

This language was modified at the suggestion of AGC.

- (A) Testing and monitoring equipment.
- (B) Ventilating equipment, when needed, used to obtain and maintain acceptable entry conditions.
- (C) Communication equipment, such as a two-way radio, for effective communication between the attendant and all entrants, and to initiate rescue when necessary.
- (D) Lighting equipment needed to ensure employees can see well enough to work safely and exit the space quickly in the event of an emergency.
- (E) Barriers or shields to protect entrants from external hazards, such as pedestrians and vehicles.

- (F) Ladders or other equipment to safely enter and exit the space.
- (G) Rescue and emergency equipment necessary to safely and effectively rescue entrants.
- (H) Any other equipment necessary to safely enter and exit the space.
- (I) Personal protective equipment as mandated by any applicable Oregon OSHA standard.

This requirement mirrors the 1910.146 text.

- (b) Provide all necessary equipment at no cost to employees.
- (c) Ensure all equipment is maintained and used in accordance with the instructions from the manufacturer.
- (d) Ensure all employees who use equipment are trained in the use of that equipment.

The requirement to ensure equipment is used and maintained in accordance with the manufacturer's instructions is designed to clarify the 1910.146 requirement that equipment be used and maintained "properly." There was discussion with the initial stakeholder group about who sets the parameters of what "proper" means, and determined that it is the manufacturer who sets these parameters. There are occasions when employers receive used equipment from a third party without any use or maintenance instructions, and this clearly delineates their responsibility to contact the manufacturer for that information.

(8) Personnel.

- (a) Before employees enter permit spaces, designate entrants, attendants, and entry supervisors.

Note: The entry supervisor can also be either the attendant or entrant.

This note was added to clarify the position that a permit entry does not necessarily require three individuals to fulfill three positions.

(b) Entrants must:

- (A) Know the hazards that may be faced during entry, including information on the type of hazard, as well as signs, symptoms, and consequences of exposure to those hazards.

This language was modified from the proposed language, as the proposed language was less clear. However, the requirements of paragraph (8) mirror the 1910.146 requirements.

- (B) Communicate with the attendant as necessary so the attendant can monitor the entrant's status and to enable the attendant to alert entrants of the need to evacuate the space.
- (C) Alert the attendant whenever the entrant detects a dangerous or hazardous condition or warning sign or symptom of exposure to a dangerous situation.
- (D) Exit from the permit space as quickly as possible whenever:

- (i) An order to evacuate is given by the attendant or the entry supervisor,
or

- (ii) The entrant recognizes any warning sign or symptom of exposure to a dangerous situation, or
- (iii) The entrant detects a dangerous or hazardous condition, or
- (iv) An evacuation alarm is activated.

(c) Attendants must:

(A) Know the hazards that may be faced during entry, including information on the type of hazard, as well as signs, symptoms, and consequences of exposure to those hazards.

As with (b)(A) above, this language was modified from the proposed language, as the proposed language was less clear.

(B) Be aware of possible behavioral effects of hazard exposure in authorized entrants.

(C) Continuously maintain an accurate count of authorized entrants in the permit space and ensure that the means used to identify authorized entrants accurately identifies who is in the permit space.

(D) Remain outside the permit space during entry operations until relieved by another attendant.

(E) Communicate with authorized entrants as necessary to monitor entrant status and to alert entrants of the need to evacuate the space.

(F) Monitor activities inside and outside the space to determine if it is safe for entrants to remain in the space and order the authorized entrants to evacuate the permit space immediately under any of the following conditions:

- (i) If the attendant detects a dangerous or hazardous condition;
- (ii) If the attendant detects the behavioral effects of hazard exposure in an authorized entrant;
- (iii) If the attendant detects a situation outside the space that could endanger the authorized entrants; or
- (iv) If the attendant cannot effectively and safely perform all the duties required of the attendant

(G) Summon rescue and other emergency services as soon as the attendant determines that authorized entrants may need assistance to escape from permit space hazards;

(H) Take the following actions when unauthorized persons approach or enter a permit space while entry is underway:

- (i) Warn the unauthorized persons that they must stay away from the permit space;
- (ii) Advise the unauthorized persons that they must exit immediately if they have entered the permit space; and
- (iii) Inform the authorized entrants and the entry supervisor if unauthorized persons have entered the permit space;

Note: The employer can give the attendant the authority to remove unauthorized individuals who enter or who attempt to enter the permit space during entry operations, so long as the attendant does not enter the space.

This note was modified from the proposed language at the recommendation of several commenters that we did not want to give the impression that an attendant may enter a space to remove an unauthorized person.

- (I) Perform non-entry rescues as specified by the employer's rescue procedure; and
- (J) Perform no duties that might interfere with the attendant's primary duty to monitor and protect any authorized entrant.

NOTE: An attendant may monitor more than one space at a time, but the duties in relation to one space may not interfere with the duties for any other spaces. If an attendants' attention is focused on one space, such as to initiate the rescue procedures, all other spaces that the attendant is monitoring must be evacuated or another attendant must take over those duties first.

This note was added to the existing language from 1910.146 to clarify the idea that an attendant can monitor entries into several spaces, but their attention cannot be focused on only one space without summoning another attendant first or ensuring that the other spaces are evacuated.

(d) Entry supervisors must:

- (A) Know the hazards that may be faced during entry, including information on the type of hazard, as well as signs, symptoms, and consequences of exposure to those hazards
- (B) Understand the means and methods to control and/or eliminate the hazards of the permit space
- (C) Verify, by checking that the appropriate entries have been made on the permit, that all tests specified by the permit have been conducted and that all procedures and equipment specified by the permit are in place before endorsing the permit and allowing entry to begin
- (D) Inform entrants and attendants of the hazards and conditions associated with the space and the methods used to eliminate and/or control those hazards
- (E) Terminate the entry and cancel the permit as required by the permit entry program
- (F) Verify that rescue services are available and that the means for summoning them are operable
- (G) Remove unauthorized individuals who enter or who attempt to enter the permit space during entry operations.
- (H) Reevaluate the conditions within the space whenever responsibility for a permit space entry operation is transferred and at intervals dictated by the hazards and operations performed within the space.

These duties and responsibilities are the same as the 1910.146 requirements. While the entry supervisor can also be the attendant or entrant, they can also be a third person. If so, they still have responsibilities for that entry. There have been occasions where an entry supervisor left the site after signing the permit. While this is not absolutely forbidden, they must still be able to fulfill their responsibilities as the entry supervisor, or transfer control of the space to another entry supervisor.

The definition of entry supervisor makes it clear that an entry supervisor does not explicitly have to be a person with supervisory responsibilities. Rather, the entry supervisor is simply the designated person who is ultimately responsible for a permit entry.

(9) Rescue.

- (a) Before employees enter a permit space, develop and implement procedures to remove entrants in the event of an emergency or when they are unable to self-rescue. These procedures must include:

David Olson commented that this should be rescue plans instead of rescue procedures, as he felt that the term procedures was vague. However, in this context, the procedures for removing an entrant can differ on many levels, beginning with whether or not an entrant can be removed without rescuers needing to enter the space. "Procedures" is more appropriate as it includes all of the requirements that follow.

AGC asked if these procedures must be part of the written permit space program. The rescue procedures are not explicitly required to be part of the written program, although there are situations where doing so would be beneficial. These procedures are not required to be written, although, again, there are situations where doing so would also be beneficial.

- (A) The process for summoning rescue services.

- (B) The process for summoning emergency medical services or transporting injured entrants to a medical facility.

- (C) If an injured entrant is exposed to a substance for which a Material Safety Data Sheet (MSDS) or other similar written information is required to be kept at the worksite, that MSDS or written information must be made available to the medical facility treating the exposed entrant.

- (b) Where feasible, use non-entry retrieval systems or methods whenever an authorized entrant enters a permit space, unless it would increase the overall risk to the entrant or would not contribute to the rescue of the entrant.

This language was modified from the proposed rule at the suggestion of AGC and OSIA. The basic concept is unchanged from the 1910.146 rule, in that if an entrant can be removed safely and expeditiously using non-entry means, such as a tripod, the expectation is that the non-entry retrieval method will be used. When such methods are not feasible, the provisions for entry rescue must be followed.

(A) Non-entry Rescue.

(i) Use a retrieval system that meets the following requirements.

(I) Each authorized entrant must use a chest or full body harness, with a retrieval line attached at the center of the entrant's back near shoulder level, above the entrant's head, or at another point which you can establish presents a profile small enough for the successful removal of the entrant. Wristlets or ankle straps or other equally effective means may be used in lieu of the chest or full body harness if you can demonstrate that the use of a chest or full body harness is infeasible or creates a greater hazard and that the use of other methods are the safest and most effective alternative.

(II) Attach the other end of the retrieval line to a mechanical device or fixed point outside the permit space so that rescue can begin as soon as the attendant becomes aware that rescue is necessary. Ensure a mechanical device is available to retrieve personnel from vertical type permit spaces more than 5 feet (1.52 m) deep.

(ii) Designate a rescue person or team to perform rescues in a timely manner.

Note: The response time is based on the hazards of the space. For example, IDLH hazards require an immediate response, and responders would need to be available on-site during the duration of the entry.

(iii) Ensure all rescuers are trained in basic first aid and cardiopulmonary resuscitation (CPR). At least one member must be certified in first aid and CPR.

AGC and SDAO commented that the first aid and CPR requirement should be removed for non-entry rescuers. However, the 1910.146 standard does not distinguish between entry rescue personnel and non-entry rescue personnel, and requires this training for all rescue personnel. SDAO's rationale was also that any aid rendered would occur before the entrant is removed, but any first aid and/or CPR would rarely, if ever, occur within a permit space, and would be minimal in nature to assure that the entrant can be safely removed. Any necessary aid is typically rendered after removing the entrant. Clearly, the need to render aid primarily occurs after an entrant has been removed from a permit space, and the rescuers still need to be able to provide that aid when necessary.

(iv) Rescuers must practice performing permit space rescues at least once every 12 months.

(I) The practice rescue must include every type of space in which the rescue team may perform rescues.

(II) The practice rescue must include removing persons, dummies, or manikins from the actual permit spaces or representative spaces that have similar opening size, configuration, and accessibility issues as the actual permit spaces where rescue may be performed.

This language was modified from the proposal, based on comments from AGC and SDAO. In order for a space to be considered a representative space, the similarities must be in the internal configuration, elevation, portal size, and space access. If any one of these pieces is different, then it is not a representative space.

(III) Exception: Rescuers do not need to perform annual practice rescues when mobile workers enter a permit space when, prior to beginning entry operations, the employees designated to perform non-entry rescue (including attendants, if applicable):

(A-i) Have access to the permit space to be entered or to a simulated permit space; and

(A-ii) Develop appropriate rescue plans; and

(A-iii) Conduct practice rescue operations in accordance with (8)(b)(A)(iv)(II).

(B) Entry Rescue.

(i) Where non-entry rescue is not feasible or would increase the overall risk to the entrant, designate a rescue team before employees enter any permit space.

(ii) Ensure the rescue team:

(I) Can respond to a rescue call in a timely manner. Timeliness is based on the identified hazards of the space. Rescuers must be able to reach potential victims within an appropriate time frame based on the identified hazards of the permit space.

This section caused discussion with the stakeholder group. Timeliness of any response can only be related to the nature of the hazards of the space. When the hazards of the space include an oxygen deficiency, the response time must be immediate because death can occur within minutes. The time factor must include not only travel time to the space, but preparation time to evaluate the hazards before entering, the same as any other entrant. If the rescue team is not on-site and ready to perform a rescue when the entrant is in an oxygen-deficient environment, the entrant is most likely to already be deceased by the time the rescue team arrives and removes the entrant.

(II) Can efficiently rescue employees from permit spaces.

(III) Has the appropriate equipment to rescue employees from all permit spaces employees enter.

- (iii) Inform each rescue team or service about the hazards they may confront when called to perform rescue.
- (iv) Provide the rescue team or service with access to all permit spaces from which rescue may be necessary.
- (v) Provide rescue team members with personal protective equipment (PPE) needed for safe entry and any other equipment required to safely conduct rescues.
- (vi) Use and maintain all equipment according to the instructions from the manufacturer.
- (vii) Rescue teams must practice performing permit space rescues at least once every 12 months.
 - (I) The practice rescue must include the different kinds of spaces in which the rescue team may perform rescues.
 - (II) The practice rescue must include removing persons, dummies, or manikins from the actual permit spaces or representative spaces that have similar opening size, configuration, and accessibility issues as the actual permit spaces where rescue may be performed.

As above in the non-entry rescue section, this language was modified from the proposal, based on comments from AGC and SDAO. In order for a space to be considered a representative space, the similarities must be in the internal configuration, elevation, portal size, and space access. If any one of these pieces is different, then it is not a representative space.

- (III) Exception: The rescue team does not need to perform annual practice rescues when mobile workers enter a permit space when, prior to beginning entry operations, the employees designated to perform rescue:

This language was modified at the suggestion of AGC.

- (A-i) Have access to the permit space to be entered or to a simulated permit space; and
 - (A-ii) Develop appropriate rescue plans; and
 - (A-iii) Conduct practice rescue operations in accordance with (8)(b)(B)(vii)(II).
- (viii) Rescue team personnel must have the same training and proficiencies as a permit space entrant, attendant, and/or entry supervisor.
 - (ix) Ensure all rescue team members are trained in basic first aid and cardiopulmonary resuscitation (CPR). At least one member must be certified in first aid and CPR.

Note: Additional medical training, such as oxygen administration, the use of automated external defibrillators (AEDs), and personnel decontamination should be considered.

(x) When a third-party rescue service is used, ensure that the service is:

- (I) Aware that they are so designated and agree to it in writing prior to entry.
- (II) Capable of performing all required rescue operations.
- (III) Trained in first aid and CPR, and at least one member is certified in first aid and CPR.

A common issue with permit space programs is employers indicate that their rescue plan is to call 911 or other community emergency response providers. Typically, the entity identified in the program is not aware that they are the designated responders and are not set up to be the primary responder. While community response personnel can be the primary responder, it is not for the employer to dictate that they will be the responder. It is the community responder's decision if that is a role they want to accept. Nothing in these rules is intended to compel a community emergency response organization, such as the local fire department, to accept the responsibility of being the primary rescue responders for any organization, unless they choose to do so.

(C) Third-party entry rescue providers.

(i) In addition to the requirements of this rule, employers that provide entry rescue services must:

- (I) Obtain information required by paragraph (4) regarding every permit space in which entry rescue by your employees may be necessary.
- (II) Be familiar with the policies and procedures as described in paragraph (9)(a).

(ii) When activated to perform a rescue, without entering the space and using the entry permit, evaluate the space to:

AGC commented that "activated" was a confusing term. We disagree, as the requirement states, "activated to perform a rescue." Webster's New College Dictionary defines activate as, "To set in motion." In this context, it is clearly defined that these requirements apply when the rescue team is set in motion to perform a rescue.

- (I) Identify all physical and atmospheric hazards.
- (II) Determine the precautions and procedures to follow for entry into the space.

This language was modified at the suggestion of AGC.

(10) Alternate Entry.

For alternate entry, Oregon OSHA and the stakeholder groups went with an all-hazards approach, similar to the controlled atmosphere confined space concept in definitions of the federal OSHA proposed rule 1926.1202. While 1910.146 does not take an all-hazards approach to alternate entry, our experience is that there continues to be confusion among employers, employees, and safety and health professionals regarding the proper application of the exemptions in (c)(5) and (c)(7) of the 1910.146 standard. Our position is that this confusion can expose employees to hazardous conditions, and our approach eliminates that confusion.

(a) Permit spaces may be entered without a permit when:

(A) All hazards have been eliminated; or

(B) All physical hazards, if any, have been eliminated and all atmospheric hazards are controlled with continuous forced-air ventilation.

SDAO asked if continuous ventilation would be required if initial testing did not show the presence of atmospheric hazards. The answer to that depends on the particular situation. If the conditions which caused the potential for atmospheric hazards has been eliminated, then there is no need for ventilation unless the potential for an atmospheric hazard is introduced during the entry. If the hazard cannot be eliminated, constant ventilation is required, regardless of the results of the initial testing. In this case, the ventilation is to maintain safe entry conditions.

Note: For purposes of this rule, “hazard elimination” means that the conditions which caused the hazard no longer exist within the space.

Note: Continuous forced-air ventilation does not eliminate atmospheric hazards. It only controls the hazards.

(b) Exception: Alternate entry cannot be used to enter a continuous system unless you can positively isolate the area to be entered from the rest of the space or can demonstrate and document that the conditions which caused the hazard no longer exist within the system during the entry.

The intention of this exception is to clearly identify that alternate entry cannot be used in conditions where the section of the space to be entered can't be isolated from the rest of the space and the hazards of the entire space cannot be eliminated and/or controlled. The conditions in an active sanitary sewer can change very rapidly and ensuring that all hazards are eliminated and/or controlled within a sanitary sewer system is simply impractical. Similarly, storm drains can be subject to flooding from upstream activity, and any entry under this section would need to account for how a release cannot occur for the duration of entry.

(c) When employees enter permit spaces under alternate entry, you do not need to comply with the requirements of paragraphs (5), (6), (8), (9), and (12) of this rule for those entries.

(d) Develop and implement procedures for each space that can be entered with alternate entry procedures. These procedures must address:

- (A) The hazards of the space.
- (B) The methods used to eliminate hazards.
- (C) The methods used to ensure that the hazards have been eliminated.
- (D) The methods used to test the atmosphere within the space, where applicable, for all atmospheric hazards.
- (E) The methods used to determine if unsafe conditions arise before or during entry.
- (F) The criteria and conditions for evacuating the space during entry.
- (G) The methods for training employees in these procedures.
- (H) The methods for ensuring employees follow these procedures.

(e) When using ventilation to control atmospheric hazards:

- (A) Use only properly calibrated direct-reading meters to test the atmosphere.
- (B) Ensure direct-reading instruments are used and tested according to the instructions and recommendations from the instrument manufacturer.
- (C) Test the atmosphere for all identified atmospheric hazards before entering the space.
- (D) Ensure employees only enter after testing verifies that all atmospheric hazards are adequately controlled by the ventilation.
- (E) Perform continuous monitoring for all atmospheric hazards during the entry.
- (F) Immediately evacuate the space:

- (i) When monitoring indicates the return of atmospheric hazards
- (ii) Upon any failure with the direct-reading instrument.
- (iii) Upon any failure with the ventilation.
- (iv) When a new hazard is introduced or conditions within the space change.

(f) Ensure all employees or their representatives who will conduct the entry have the opportunity to observe all activities used to comply with this section.

(g) Ensure all employees who conduct entry have an effective means of communication, such as a two-way radio, cell phone, or voice if other employees are present, to summon help while within the space.

(h) When a space is evacuated, it cannot be re-entered as an alternate entry unless:

This language was modified at the suggestion of AGC.

- (A) The conditions that necessitated the evacuation are corrected; and
- (B) The re-entry is treated and documented as a new entry.

(i) Document each entry. This documentation must include:

- (A) The location of the space.
- (B) The hazards of the space.
- (C) The measures taken to eliminate the hazards.
- (D) When applicable, the measures used to control the atmospheric hazards

- (E) When applicable, the identity of the direct-reading instruments used to test the atmosphere, including the date of calibration.
- (F) When applicable, the results of the atmospheric testing.
- (G) The date of the entry.
- (H) The duration of the entry.
- (I) When applicable, any and all conditions that required the evacuation of the space.
- (J) The name, title, and signature of the person responsible for ensuring the safe entry conditions.

(j) Maintain this documentation for the duration of the entry at the location of the entry.

(11) Training.

(a) Train each employee involved in permit space activities so they acquire the understanding, knowledge, and skills necessary to safely perform their duties, according to their assigned responsibilities.

(A) Provide training:

- (i) For all new employees
- (ii) Before an employee is assigned permit space duties
- (iii) Before there is a change in an employee's assigned duties
- (iv) When there is a hazard for which the employee hasn't already been trained
- (v) When there are changes to the permit program
- (vi) When the permit audit shows deficiencies
- (vii) Whenever there is a deviation from the established procedures or employee knowledge of the procedures is inadequate

(b) Document employee training. Ensure the documentation:

- (A) Contains the employee's name, the name and signature of the trainer, and the date of training.
- (B) Contains the responsibilities for which they were trained.
- (C) Is available for inspection by employees and their authorized representative.

(c) Ensure each employee is proficient in their assigned duties.

(d) Awareness training:

(A) Provide awareness training to all employees whose work operations are or may be in an area where permit spaces are present to explain:

- (i) The permit space program
- (ii) The entry permit system
- (iii) The alternate entry procedures, if used
- (iv) How to recognize permit spaces in their work area

(B) Provide this training:

- (i) For all new affected employees
- (ii) For all employees whose duties change to include work in areas with permit spaces
- (iii) When inadequacies in an employee's knowledge indicate that the employee has not retained the requisite understanding
- (iv) When there is a change in the permit program
- (v) When there are new or previously unidentified permit spaces

(12) Multi-employer worksites.

(a) Unless you fall within an exemption under paragraph (4)(A)(a), before employees of another employer enter permit spaces under your control, you must:

This language was modified at the suggestion of AGC.

(A) Inform the employer and their employees:

- (i) That the workplace contains permit spaces and can be entered only when the applicable requirements of this rule are met
- (ii) Of the identified hazards and your experience with each permit space they will enter
- (iii) Of any precautions or procedures you require to protect employees in or near spaces where the work will be performed

This language was modified at the suggestion of AGC.

(B) Coordinate entry operations with the employer, when employees of different employers will be working in or near the same permit spaces.

(C) Discuss entry operations with the employer after they are complete. This discussion must include:

- (i) The program followed during permit space entry
and
- (ii) Any hazards confronted or created

(b) When your employees enter a permit space under the control of another entity, at the conclusion of entry operations, inform the controlling contractor and host employer about the precautions and procedures you followed and any hazards that were present or that developed during entry operations.

(13) Records. Keep cancelled permits for at least one year from the date the permit expires for review (see paragraph (5)(i)).

Note: Additional record retention requirements may apply under OAR 437-002-1910.1020. "Access to Employee Medical and Exposure Records."