

CFR1910.146
Permit-Required Confined Space Entry—
from an Expert Witness' Perspective
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Whether the arena is athletic competition, military confrontation, industrial espionage, investing into the stock market, or regulatory compliance, one tenet remains undeniably paramount—"Fore-Warning is Fore-Armed"! Thus, the purpose of this discussion is to alert employers conducting confined space entry operations of the more frequently cited aspects of such activities by State and Federal OSHA that have led to contested cases requiring expert witness participation.

Many articles have been written on the topic of confined space entry since Federal OSHA issued the final rule in early 1993. However, very few have ever focused on the ugly "back story" of this topic—what alleged violations are cited when major disaster strikes, serious injuries and/or fatalities occur, citations are issued, fines are levied, and the matter heads for the courtroom. Welcome to the world of OSHA solicitors, plaintiff and defendant lawyers, administrative law judges, expert witnesses, and (sometimes) criminal charges from grand jury indictments!

The purpose of this discussion will be to assist employers in identifying those critical aspects of their maintenance operations which may need special emphasis in order that their OSHA compliant Permit-Required Confined Space entry program be free from incident and possible citations. The comments and advice from the author represent precepts gleaned from his participation in over 25 expert witness cases since 1976 in the confined space area.

Since the Permit-Required Confined Space topic is so varied in its dimensions and compliance requirements, it is first necessary to restrict the scope of this discussion to only a few of the key issues that could possibly lead to contested cases such as:

- Application of General Industry vs. Construction Safety Standards
- Classification of Spaces (Permit/Non-Permit/etc.)
- Air Quality Testing
- Ventilation
- Permit System/Permit Content
- Rescue Requirements
- Training and Duties of Key Personnel

Since the promulgation of the final rule in 1993, General Industry vs. Construction, Classification of Spaces, and Rescue Requirements have been the three most frequently cited, fined, and contested areas of the author's expert witness activity in this field.

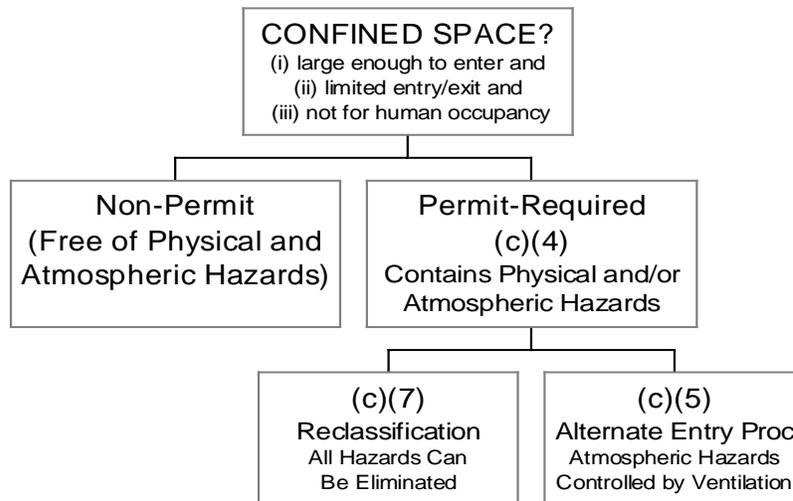
Let's briefly review some aspects of the key contested issues inherent to these topics.

- A. General Industry vs. Construction: Paragraph (a) of 1910.146 specifically exempts "agriculture construction and shipyard employment" from compliance with the Permit-Required Confined Space rule. For years, the moment a backhoe, "bobcat," or crane was at the job site (or even if the word "construction" was painted on the door of a pick-up truck) employers have often claimed exemption from 1910.146 and at best, followed bare minimal compliance with CFR1926(b)(6), the confined space rule for construction from the 1970's. Some salient points should be noted here: OSHA has clearly distinguished and classified maintenance, rehabilitation, re-lining, etc as general industry tasks while only true building of the space (or major reconstruction) should fall under construction regulation. The CFR1926 construction regulation is weak, limited, and fails to cover rescue, air monitoring, multi-employer worksites, and classification of spaces among other deficiencies. In the absence of a current rigorous confined space rule for true construction work, many large host employers and mega-project managers have required all sub-contractors to follow 1910.146 even though the site was really a bona fide construction site. [The Boston, Mass "Big Dig" project was a good example of this practice]. As a result of some combination of the above circumstances, certain employers failed to follow 1910.146 practices at sewer relining projects,

tank entry, and wet well pump maintenance operations, with disastrous consequences. None of the author's expert witness assignments in the area of General Industry vs. Construction was ever adjudicated in favor of the employers' contention that 1926.21(b)(6) was the appropriate standard for compliance when basic maintenance of an existing confined space was the task being performed. [Author's Note: Contested cases in this area have expanded considerably in the last few years, so it should not be a surprise that Federal OSHA has announced its intention to put forth for comment in early 2006 its CFR1926.1200 subpart AA, a true new "Confined Spaces in Construction" Regulation.]¹

- B. **Classification of Spaces:** CFR1910.146 states in its General Requirement Section (c) (a) that an employer must evaluate work spaces at their facilities for the possible presence of "Permit-Required Confined Spaces" as given in the Definition Section (b) of the regulations. The evaluation of the workspace and the resultant proper classification of the space are best described by logic path diagram given in Figure #1.

Options for Entry



It should be noted from Figure #1 that upon determining that a workspace meets the three concurrent confinement requirements given in OSHA's definition of "confined space", then the competent person making the evaluation has only two options in their classification logic—"Non-Permit Confined Space" or "Permit-Required Confined Space". A truly "Non-Permit Space" must be free of all hazards, requires no signage, eliminates rescue requirements, and suspends the bulk of any costly and

time-consuming requirements for entry. [A hazard review form should be kept on file to support the employers' contention of "hazard free" status of such a space.]

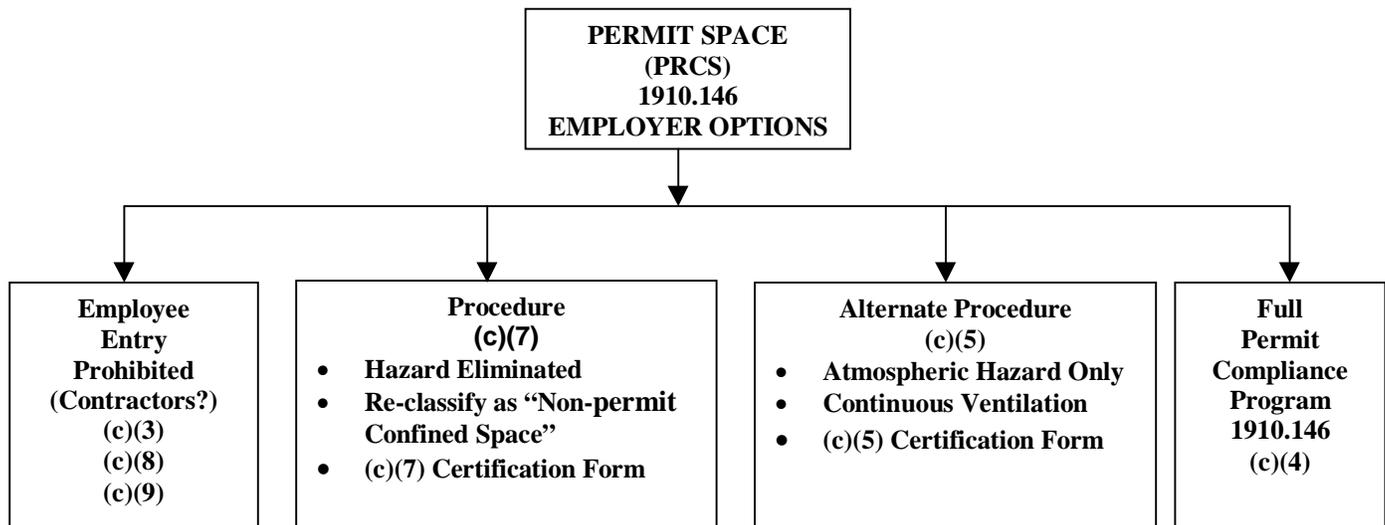
When the confined space under review fails the test of "hazard free" status, it must be designated as "permit-required". But in-depth review of the history of the space, accident/incident reports, nature of tasks performed may allow the competent person to elect one of the three options listed below:

1. Permit in Perpetuity (Always entered under full permit conditions)

¹ [Author's Note: Cases involving application of General Industry vs. Construction confined space regulations usually involve an employer selecting the very weak content of CFR1926.21 (b)(6) from construction regulations in order to avoid the more stringent 1910.146 from General Industry Regulations. OSHA interpretation letters have exempted true (new) construction sites from the general industry permit standard (as well as major reconstruction and altering the use of the space) – but repairing, relining, rehabilitation, sealing, coating, painting, etc. have been determined to be "maintenance tasks" thus not true construction and the general industry rule should apply.]

2. "Reclassification to Non-Permit" status through elimination of all hazards
3. "Alternate Procedure" using adequate ventilation when only atmospheric hazards are present
[Full discussions of these options are found in sections (c)(4), (c)(7), and (c)(5) respectively of CFR1910.146.]

Although the language of 1910.146 may not be eminently clear to all, it is a simple fact that the discussion above and the content of the rule allows 4 options for entry whenever an employer requires that a task be done in a permit-required confined space under their ownership or control. This is best summarized by the diagram in Figure #2.



Cases involving improper classification of space have frequently centered on:

- Reclassified space to non-permit status as found in paragraph (c)(7)
- "Alternate procedure" entry by continuous ventilation of atmospheric hazards to safe levels as found in section (c)(5)(ii)

Some common classification errors are listed below:

1. The employer often makes a determination of non-permit status even when ALL HAZARDS have not been eliminated. [Example: A space has been emptied of contents, isolated (including lockout), washed and cleaned but shows several %LEL of residual flammable substances and an oxygen level of 19.9% by volume--it clearly is not free of all atmospheric hazards!]
2. The employer introduces a blower of 1200 cfm effective blower capacity to a 1500 ft³ pit with 6" of standing liquid of unknown origin at the bottom of the pit. In this instance, the blower is of adequate capacity to effectively ventilate the space, but standing liquids of unknown origin cannot be present during "(c)(5)/Alternate Procedure" entries.
3. The employer decides to combine (c)(5) and (c)(7) procedures to reclassify a space not being aware that a FED OSHA opinion letter of the mid 1990's does not allow combining the two procedures (since ventilation never eliminates air contaminants, it possibly could only control them to safe levels.)
4. An employer puts workers in protective suits to clean out sludge-like residue at the bottom of a chemical tank after bringing a gasoline powered blower into the tank producing carbon monoxide. The contention of a (c)(5) "Alternate Procedure" due to continuous ventilation was firmly over ruled by an administrative law judge due to CO exposure and chemical hazards still in the confined space.
5. An employer incorrectly designated furnace shut down, cool down, isolation (with lock out) as "Alternate Procedure" simply because a blower was required after all other hazard removal steps were complete. Only atmospheric hazards (actual or potential) can be present in Alternate Procedure entries, thus the above furnace preparation was essentially a (c)(7) "Hazard Eliminated" entry not "Alternate Entry".

- C. Rescue: It should be emphasized here that Federal OSHA's only substantive change of 1910.146 since its introduction was in 1998 when it expanded rescue section (k), added employee participation paragraph (l), and introduced Appendix (F) for Evaluation Criteria for Rescue Services. Many employers failed to have the resources in budget and personnel to develop their own rescue trained and equipped service, and sought help from outside the workplace through the use of fire departments or private contract rescue service. Several salient points have developed in recent years regarding compliance with the enhanced rescue section (k) and Appendix (F):
1. Employers often (incorrectly) classified the space as a non-permit space at the outset in order to avoid the costly requirements of rescue section (k)
 2. The employer sometimes argued reclassification of this permit space to non-permit (to avoid the costly rescue section requirements) when in truth they had not truly eliminated all hazards through isolation of the space.
 3. Some employers have argued that an attendant activating a non-entry rescue retrieval device (attached by lifeline and harness to the entrant) while summoning an EMS unit via cell phone, is full compliance with rescue section (k) and guidelines of Appendix (F). To my knowledge none of these strategies have even been accepted by OSHA during informal conferences, before an Administrative Law Judge, or before the OSHA Review Commission.
 4. The employer named a local fire department as the off-premises rescue service, but had no written contract or on-site practice drills to support their contention.

Rescue section (k) has been a frequent and costly violated paragraph of the standard and in some instances authorities have levied higher monetary fines for violations of this section, as compared to violations of other paragraphs of 1910.146.

Contested cases involving violation of rescue section (k) have frequently been based on the following:

1. Failure of the employer to develop an effective rescue plan, which designates the rescue service and means to contact that service.
2. Failure of the employer to have the designated rescue service perform (at a minimum) an annual practice rescue drill from a typical permit space using a dummy, mannequin, or human volunteer.
3. Employer contention that an attendant activating a non-entry rescue device (winch, tripod, hoist, davit arm, etc. from outside the space) constitutes full compliance with the regulation.
4. Failure of the employer to evaluate the training, response time, and equipment available, etc. for the designated rescue service in order to be assured that rescue can be achieved based on location, width, depth, height, etc. of the permit space.

My expert witness service in recent years has had a strong focus on three key areas of the regulation:

1. General Industry vs. Construction
2. Absence of, or Improper Classification of, Spaces
3. Deficiencies of Compliance with Rescue Section (k)

- D. Conclusions: All sections of OSHA Permit-Required Confined Space Regulation are important and can lead to a citation and monetary fine when violations occur. This discussion highlights the three areas of the rule, which in recent years have most frequently, in the author's experience, brought lawyers, solicitors, administrative law judges, employers, and their expert witnesses into conflict in the courtroom.

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