

SUBJECT: Application of the Permit-Required Confined Spaces (PRCS) Standard, 29 CFR 1910.146.

Purpose: This instruction establishes enforcement policy and provides explanation of the standard to ensure uniform enforcement.

Scope: This instruction applies OSHA-wide.

Cancellation: This instruction replaces CPL 2-2.100, dated April 15, 2009.

References:

1. OSHA Instruction CPL 2.103, September 26, 1994, Field Inspection Reference Manual (FIRM).
2. Federal Register, Vol.58, No.9, January 14, 1993, pages 4462-4563, Permit-Required Confined Spaces, Final Rule, 29 CFR 1910.146.
3. Federal Register, Vol.58, No.123, June 29, 1993, pages 34844-34851, Permit-required Confined Spaces, Corrections to Rule, 29 CFR 1910.146.
4. Federal Register, Vol.59, No. 213, November 4, 1994, page 55209, Permit-required Confined Spaces, Technical amendment to preamble, 29 CFR 1910.146.
5. Federal Register, Vol.59, No. 227, November 48, 1994, pages 60735-60739, Permit-required Confined Spaces, Notice of proposed rulemaking, 29 CFR 1910.146.
6. OSHA Instruction STP 2.22A, May 14, 1986, CH-2, January 29, 1990, and CH-3, February 27, 1990, the State Plan Policies and Procedures Manual.
7. OSHA Instruction ADM 1-1.12B, December 29, 1989, the Integrated Management Information System (IMIS) Forms Manual.
8. OSHA Instruction STP 2-1.170, March 22, 1993, Permit-Required Confined Spaces for General Industry.
9. Public Law 91-596, December 29, 1970, Occupational Safety and Health Act of 1970 (the Act).
10. STD 1-7.3 Control of Hazardous Energy (Lockout/Tagout) - Inspection Procedures and Interpretive Guidance.

Background: The Final Rule for Permit-Required Confined Spaces was published in the Federal Register on January 14, 1993, and became effective on April 15, 1993. Minnesota OSHA adopted the federal Permit-Required Confined Spaces standard (1910.146) for general industry on May 10, 1999. The standard is based on years of gathering information on confined space fatalities and on testimony about the hazards of confined spaces from all sectors of industry and labor. Because it applies to all of general industry, a performance-oriented standard was developed rather than a specification standard.

A. **Standard Overview.** This standard describes minimum safety and health program management practices for a permit-required confined space (permit space). It also recognizes the dynamic character of permit spaces as they occur in general industry. Thus, the standard and our enforcement focus on the employer's whole program as conceived, documented and implemented as a primary safeguard for employees and on the capacity of that program to detect confined space hazards and to respond to them appropriately. Inherent in the standard is the requirement (29 CFR 1910.146(c)(6)) for employers to be ever mindful that changes in non-permit confined spaces may create or introduce a hazard that would necessitate reevaluation and, in some cases, reclassification

of spaces.

NOTES: Appendix A to 1910.146 the Permit-required Confined Space Decision Flow Chart" of the Final Rule is an excellent aid in reviewing this instruction. (See Appendix A of this instruction.)

The references which appear after each paragraph are provided to identify other relevant sections in Appendix D of this instruction.

1. Paragraph (a) of the standard states that 1910.146 is a General Industry standard. Employment in agriculture (1928), construction (1926), or shipyard employment (1915) is not covered by 1910.146. [Appendix D, Section (a)]
 2. Paragraph (b) contains definitions of key terms used in the standard. [Appendix D, Section (b)]
 3. Paragraphs 1910.146(c)(1) through (c)(4), outline the employer's general obligations to identify permit spaces in the workplace, and to take protective action. Briefly, the employer shall:
 - a. Evaluate the workplace to identify spaces that meet the definition of a permit space because of existing or potential hazards [(c)(1)]; [Appendix D, Section (c)]
 - b. Inform exposed employees [(c)(2)] (by posting danger signs or by any other equally effective means) of the existence, location, and the danger posed by the permit spaces; [Appendix D, Section (c)]
 - c. Decide if its employees are going to enter the permit spaces. If the employer decides that employees will not enter a permit space [(c)(3)], the employer shall take measures to prevent entry and shall comply with paragraphs (c)(1), (c)(2), (c)(6) and (c)(8). If entry is allowed [(c)(4)], the employer shall comply with 1910.146(d), except as provided in paragraphs (c)(5) and (c)(7). [Appendix D, Section (c)]
 - d. Paragraph (c)(5) provides alternate procedures for entry of permit spaces where the employer establishes that the only hazard posed by a permit space is an actual or potential hazardous atmosphere and that continuous forced air ventilation alone is sufficient to maintain the permit space safe for entry. [Appendix D, Section (c)]
 4. Paragraphs (c)(6) and (c)(7) provide for reclassification of spaces when changes occur which either introduce or eliminate hazards. [Appendix D, Section (c)]
 5. Paragraphs (c)(8) and (c)(9) set responsibilities for host employers and contractor employers, respectively, when the host employers arrange to have contractors conduct permit space entry operations. [Appendix D, Section (c)]
 6. Paragraph (d) Sets the elements of a PRCS program. [Appendix D, Section (d)]
 7. Paragraphs (e), (f), (g), (h), (i), (j) describe the minimum requirements for a "Permit System," the "Entry Permit," "Training," and "Duties" of active participants involved in the permit space entry, respectively. [Appendix D, Sections (e), (f), (g), (h), (i), (j)]
 8. Paragraph (k) contains provisions relating to the rescue of entrants. [Appendix D, Section (k)]
- B. Compliance Officer Safety. Minnesota OSHA prohibits routine entry by an OSHI into permit spaces. If entry must take place, OSHI must consult their director or supervisor first before attempting any confined space entry.
- C. Inspection Procedures. The following guidelines are for determining when to evaluate an employer's PRCS program. Any OSHI who is familiar with the standard and with this inspection policy may

evaluate an employer's PRCS program.

NOTE: Appendix C of this instruction is intended only as an aid, and is not intended to be the sole basis on which an employer's PRCS program is evaluated.

1. **Unprogrammed Inspections.** A comprehensive PRCS program review is expected to include a review by the OSHI of all confined spaces. The review is to be a part of all unprogrammed inspections where the subject of the complaint, referral, or initiating event is permit space hazards. The employer's PRCS program is expected to be evaluated if the OSHI believes that permit space hazards exist even though they were not the subject of the complaint, referral, or event.
 2. **Programmed Inspections.** A PRCS program review normally shall be part of comprehensive general industry programmed inspections in any workplace where confined spaces may exist. Where a review is not done and permit spaces are found to exist in the workplace, the basis for the decision not to review shall be explained in the case file.
- D. **Documentation for Violations.** Because the standard focuses on the integrity of the employer's program and each of its components, OSHI's are expected to carefully review the employer's written permit space program and the documentation in support of that program, and note the extent of any discrepancy between the program as documented and as it is implemented. Deficiencies in either program content or implementation may be cited, but the basis for any citation must be explicitly substantiated in the case file.
- E. **Citation Guidance.** Citations for violations of the PRCS standard shall be issued in accordance with the FCM.
1. If the employer has not implemented a confined space program, **but** their employees do not enter the permit required confined spaces:
 - A. Cite 1910.146(c)(1) for any deficiencies in the employer's evaluation of the spaces. The evaluation does not need to be documented as long as the employer can explain how the evaluation was conducted and describe the results. The initial evaluation does not necessarily require a specific physical survey of each space if the determination can be made through existing records and knowledge of the spaces in the workplace, provided that this information is adequate. The outcome of the initial evaluation does not necessarily have to be one with which MNOSHA would agree.
 - B. Cite individually for any deficiencies of 1910.146(c)(2) – inform exposed employees of the identity and location of confined spaces, (c)(6) – re-evaluation of space, and/or (c)(8) – inform the contractor.
 2. If the employer has not implemented a confined space program, **and** their employees do enter permit required confined spaces; the OSHI should consider the following four citations:
 - A. Cite 1910.146(c)(1) for lack of an evaluation of the space. The employer is responsible for evaluating their workplace to determine if any spaces are permit-required confined spaces because of existing or potential hazards. (see discussion in E.1.A. above).
 - B. Cite 1910.146(c)(4) for lack of or deficiencies with the permit required confined space program unless the employer can prove through their evaluation that it is a non-permit confined space. The OSHI should document specifically what hazards or criteria make the space a permit space.
 - C. Cite 1910.146(g)(2) for deficiencies in training.
 - D. Cite 1910.146(k)(1) for deficiencies in selection and evaluation of designated rescue

- services; or 1910.146(k)(2) for deficiencies in employee rescue procedures; or 1910.146(k)(3) for deficiencies in non-entry rescue procedures.
3. If the employer has implemented a confined space program, **and** their employees do enter the permit required confined spaces; the OSHI should consider the following citations for any deficiencies noted:
 - A. Cite 1910.146(c)(1) if the employer's evaluation of the spaces is not adequate. (see discussion in E.1.A. above). The employer is responsible for evaluating their workplace to determine if any spaces are permit-required confined spaces because of existing or potential hazards.
 - B. The OSHI should cite as a permit required confined space unless the employer can prove through their evaluation that it is a non-permit confined space. The OSHI should document specifically what hazards or criteria make the space a permit space. If there is more than one violation of paragraphs (c)-(f), (h)-(j), and (l), cite 1910.146(c)(4) only and list all deficiencies.
 - C. Cite 1910.146(g)(2) for deficiencies in training.
 - D. Cite 1910.146(k)(1) for deficiencies in selection and evaluation of designated rescue services; or 1910.146(k)(2) for deficiencies in employee rescue procedures; or 1910.146(k)(3) for deficiencies in non-entry rescue procedures.
 4. If the employer has reclassified a permit space as a non-permit space for the entry, the OSHI shall review the employer's written certification. The certification shall document the basis for determining that all hazards have been eliminated from the space, the location of the space, the date and shall be signed by the person making the determination. The written certification is valid only as long as the hazards remain eliminated.
 - A. If the employer has reclassified a space with a potential or actual hazardous atmosphere, or if the employer has not eliminated all recognized safety hazards, cite 1910.146(c)(7)(i) The OSHI must specifically state the hazards that were not eliminated. **The employer must be made to understand that if hazards in the space have not been eliminated that they are entering a permit space and that reclassification is not appropriate until all hazards have been eliminated.**
 - B. If the employer has eliminated all the hazards of a permit space but has not documented the reclassification of the permit space properly cite 1910.146(c)(7)(iii).
 5. Any single confined space deficiency (such as air monitoring, ventilation, etc.) should be cited by the specific paragraph that applies.
 6. Confined spaces in construction are addressed in STD 5-3.1 Application of the Confined Spaces Standard for Construction.
 - F. Special Enforcement Situations. Appendix B of this instruction contains a list of particular standards which apply in specified situations. When there is a question as to the appropriate standard (vertical or horizontal), the vertical standard shall be cited.

James Krueger, Director MNOSHA Compliance
For the MNOSHA Management Team

Distribution: OSHA Compliance and WSC Director

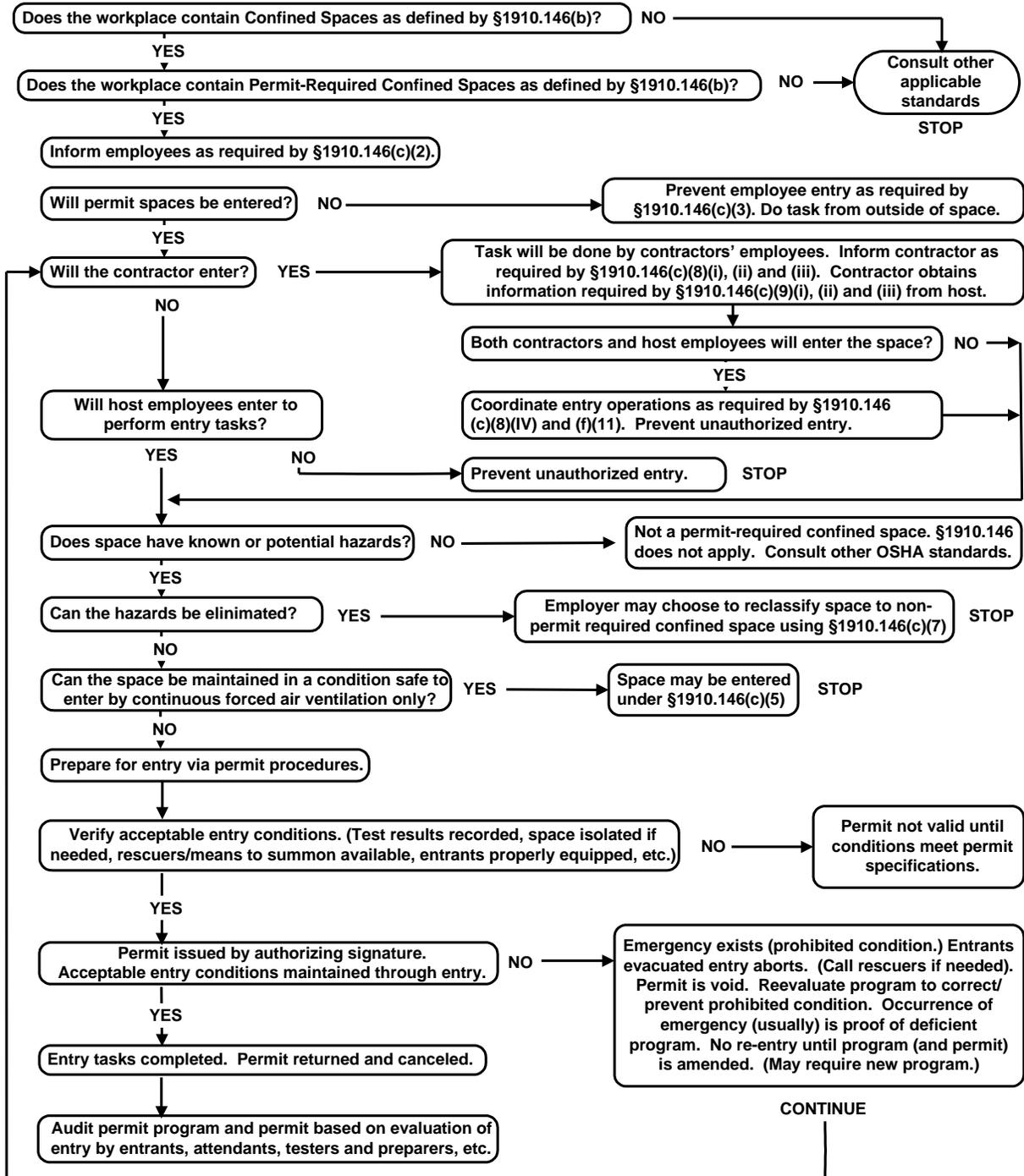
- Attachments: Appendix A - **Permit-Required Confined Space Decision Flow Chart**
Appendix B - **Specific Vertical Standards Taking Precedence**
- Appendix C - **PRCS Program Evaluation Considerations**
Appendix D - **Questions and Answers for PRCS Standard Clarification**
Appendix E - Settlement Agreement Letter
Appendix F - Guidance on the reclassification of permit spaces 1910.146(c)(7)
Appendix G - Guidance on entry into ready mix concrete truck drums
Appendix H - Relationship between the *Control of hazardous energy* (LOTO) standard (1910.147) and the *Permit-required confined spaces*(PRCS) standard (1910.146)

NOTICE: Minnesota OSHA Directives are used exclusively by MNOSHA personnel to assist in the administration of the OSHA program and in the proper interpretation and application of occupational safety and health statutes, regulations, and standards. They are not legally binding declarations and they are subject to revision or deletion at any time without notice.

Appendix A

Permit-Required Confined Space Decision Flow Chart

Note: Appendices A through F serve to provide information and non-mandatory guidelines to assist employers and employees in complying with the appropriate requirements of this section.



Spaces may have to be evacuated and re-evaluated if hazards arise during entry.

Appendix B

Specific Vertical Standards Taking Precedence

These particular vertical standards take precedence over the Permit-required Confined Space standard for the hazards they address. Clarification note: The term "confined space(s)" as used in standards promulgated before the PRCS standard are to be considered equivalent to a "permit space(s)" in 29 CFR 1910.146.

Standard Working in Confined Spaces

1910.252(a)(4)(i) Removal of arc welding electrodes during suspension of work in confined spaces.

1910.252(b)(4)(i) to (vii) Protection of personnel welding in confined spaces (ventilation, securing welding equipment, lifelines, attendants, electrode removal, gas cylinder shutoff, warnings).

1910.252(c)(4) Health protection and ventilation for welder and outside helper during welding operations in confined spaces.

1910.252(c)(9) Specifies ventilation and respiratory protection requirements for welding in confined spaces using cadmium-bearing filler metal.

1910.252(c)(10) Specifies local exhaust ventilation or respiratory protection for welding and cutting mercury-coated or-bearing materials, including paint, in confined spaces.

1910.261(b)(5) Specifies safe practices (lifeline, safety harness, attendant, atmospheric testing, availability of SCBA, and lock out) for entering a vessel in pulp, paper, and paperboard mills

1910.268(o) Addresses certain hazards involving manhole and unvented vault entry by telecommunication employees.

1910.269(e) Applies to routine entry into enclosed spaces by qualified employees performing operations or maintenance work within the scope and application of 1910.269.

1910.269(t) Provides additional requirements for work in underground electrical installations.

1910.272(g) Specifies entry procedures for bins, silos, and flat storage buildings and tanks with a diameter less than the height, and for all top entries of these structures in grain facilities.

1926.21(b)(6)(i) Requires instructions to employees who enter confined or enclosed spaces.

1926.21(b)(6)(ii) Defines the confined and enclosed spaces which require instruction.

1926.352(g) Fire prevention measures associated with the use of fuel gas and oxygen in enclosed spaces.

1926.353(b)(1) Requirement for exhaust ventilation when welding, cutting, or heating is performed in confined spaces.

1926.353(b)(2) Requires air line respirators and standby person whenever the means of access is blocked by ventilation equipment.

Appendix C

PRCS Program Evaluation Considerations

This appendix has been included for general guidance only. It is not intended to direct the CSHO's investigation or restrict the manner in which an employer's program is evaluated.

I. INITIAL INFORMATION

- A. To what degree is the employer familiar with the standard and its contents? (Does the employer understand the key terms defined in the standard?)
- B. Request identification of those confined spaces evaluated and determined to require a permit, their locations, along with any documentation as to the permit space determination (memos, contract, report, etc.) and when the determination was made.
 - 1. How does the employer meet the standard's requirement of paragraph (c)(6) for review of existing non-permit confined spaces for hazards which would convert them to a permit space?

- C. Evaluate the process by which the employer identified any permit spaces, as follows:

NOTE: If an employer elects not to have its employees enter the permit space, a thorough evaluation of each space is not required.

- 1. Analyze the evaluation method and equipment used.
 - a. Was the determination made based upon historical data? If so, how reliable is that data?
 - b. Were the substance's hazards appropriately identified and evaluated to comply with paragraph (d)(2) of the standard? All the hazards that can affect the safety and health of entrants must be determined; e.g., gasoline is flammable but also contains benzene which can be a health hazard.
 - c. Were the sampling methods and/or testing equipment appropriate for each substance?
 - d. Are mechanical and other non-atmospheric hazards, for the space or for the work to be performed in the space, addressed in the employer's evaluation method?
- 2. If the employer has arranged to have some other party (consultant or insurance carrier) evaluate the workplace, request a copy of the report presented to the employer in order to assess the adequacy of the evaluation.
- 3. Where are the permit spaces.
- D. Are contractors performing permit space entries? If so, determine who they are and their work location.
 - 1. Are these spaces multi-employer worksites?
 - 2. Did the contractor develop the permit space program in use? If not, whose program is being used or followed by the contractor? If so, how was their program coordinated with the host employer's PRCS program?
 - 3. What measures have the employers taken to facilitate coordination and safety for multi-

employer worksites? Examples of these measures might be communications systems, postings, assignments of liaison personnel, or contractual agreements.

II. TRAINING

A. Employees:

1. What is the employer's policy with regard to employee entry referenced in paragraph (c)(2), and how are the employees informed of the policy?
2. How are the affected employees referenced in paragraph (g)(2) identified? Who are they?
3. How are affected employees informed of the employer's policies on permit space entry?
4. How and when are new or reassigned employees informed of the existence and locations of permit spaces?
5. Is the employer's PRCS program used in employee training?

B. The trainer:

1. Who are the individuals conducting the training, and what training are they providing?
2. For the training being presented, is the trainer knowledgeable about the subject matter in general and with the particular permit space situations at the workplace?

C. The employer:

1. How does the employer verify that the training has been provided?
2. How does the employer evaluate employee proficiency in the duties required by the permit space program?
3. What criteria does the employer use to decide if retraining is necessary?

III. PRCS PROGRAM.

A. Review a copy of the employer's written policies and procedures.

1. Where is the written program normally kept?
2. Who is in charge of the PRCS program?
3. Does the written program provide for compliance with the applicable elements listed in paragraph (d) of the standard?

B. Does the program provide appropriately for employee input regarding the classification of spaces, the identification of hazards, training, the adequacy of entry procedures and precautions, and other areas where employee knowledge and experience would be pertinent?

IV. ENTRY PROCEDURES

- ### **A. Obtain a list of entrants or identify the employees who have been assigned the duties of "authorized entrant," "attendant," "entry supervisor," and determine who is authorizing entry. During the inspection, interview a sufficient number of employees in each category to evaluate the training provided and the permit space program's effectiveness.**

- B. Determine the name, position, and training of the person(s) responsible for authorizing or in charge of entry under the permit system [entry supervisor(s)].
- C. Are the alternate procedures referenced in paragraph (c)(5) being employed for permit space entry?
 - 1. Review all data relating to each (c)(5) entry undertaken. The following are some examples of questions the CSHO may consider useful:
 - a. What is the size (volume) and configuration of the permit space?
 - b. How have the physical properties (molecular weight, vapor pressure, etc.) of the atmospheric hazards been considered in the design of the ventilation plan?
 - c. What is the capacity of each piece of ventilation equipment being used? Does capacity match requirements of the space(s)?
 - d. What is the air exchange rate required to maintain acceptable entry conditions under a worst case scenario?
 - e. What are the procedures the employer uses to determine acceptable entry conditions?
 - f. Where and how is the data maintained?
 - g. Do the entrants know what are the "safe for entry" conditions and where the supporting data is maintained?
 - h. How does the employer demonstrate that the only hazards in the permit space are atmospheric?
 - i. How did the employer demonstrate that continuous forced air ventilation would maintain the permit space safe for entry?
 - j. How did the employer collect and document the monitoring and inspection data used to support application of paragraph (c)(5)?
 - k. How does the employer make the documentation of determinations and supporting data available to permit space entrants?
 - l. How does the employer determine that the operations or activities being performed within the permit space (for example: mucking, cleaning, etc.) do not contribute to the atmospheric hazard?
 - m. If employees needed to enter the permit space to obtain the data required by paragraph (c)(5)(i)(C), what procedures and equipment were used to comply with paragraphs (d)-(f) and (h)-(k)?
 - 2. Ask to see any documentation from previous entries using the alternate procedures.
 - 3. Identify the equipment to be used for sampling and monitoring the permit space to comply with paragraph (c)(5).
 - a. Determine if the equipment is being maintained and calibrated in accordance with the manufacturer's recommendations.

- b. Have air sampling, monitoring plans and procedures been developed which take into consideration any sampling equipment limitations?
- c. Do sampling plans include measuring exposure at the employee locations as well as other locations in the space?
- 4. Who has the employer authorized to certify that the pre-entry measures required under paragraph (c)(5) have been taken?
 - a. What does the certifier know about the permit space being entered?
 - b. How is the certification made available to each employee entering the space?
 - c. Are there any entry procedures used beyond those required by paragraph (f)(1), to inform entrants of entry conditions and how they relate to the acceptable entry conditions that have been determined?
 - d. How does the employer notify entrants of the need to exit the space when a hazardous atmosphere is detected?

V. RESCUE.

Review the employer's policy to determine which rescue procedures are being employed. If non-entry rescue has been ruled out, ascertain which of the entry rescue options has been implemented.

- A. Non-entry rescue:
 - 1. If non-entry rescue is being practiced, what equipment is used?
 - 2. If non-entry rescue is not being practiced, what are the employer's reasons for not using it?
 - 3. Does the employer review each space to be entered to determine whether to employ or not to employ non-entry rescue?
- B. On-site rescue services: (A host employer's own employees)
 - 1. Determine the number of employees assigned to perform rescue, verify training for each member of the rescue service, and find out which of them have a current first-aid and cardiopulmonary resuscitation (CPR) certification.
 - 2. Review the rescue procedures as they compare with the written PRCS program, and with the requirements of paragraph (k)(1).
 - 3. Note the work shifts of the rescuers and compare them to the permit entry times.
- C. Non-host employer rescue employees (off-site):
 - 1. Who provides the off-site rescue service and where is the service located?
 - 2. How is the arrangement between the employer and the off-site rescue service documented (contract, letter of agreement, verbal agreement)?
 - 3. How does the employer decide, given the identified permit-space hazards, that the off-site rescue service's response time, experience, and training are adequate?
 - 4. Have the rescue service training requirements in paragraph (k)(1) been met?

5. What method is used to summon rescuers?
6. Are rescue services on-call or on-site when permit space entry is underway?
7. What is the response time for rescue service?
8. How does the employer verify that the rescue service will be available during the time of employee entry?

D. Combinations:

1. If combination of on-site and off-site rescue services is employed:
 - a. Obtain a copy of the rescue plan which describes the roles of each party, and
 - b. Verify that the on-site and off-site rescue services employees have trained together as a team.
 - c. Determine if, the combined rescue services enable the employer to comply with the requirements for rescue services.

Appendix D

Questions and Answers for PRCS Standard Clarification

SECTION (a) - Scope and Application

1. Are only those employers engaged in manufacturing operations covered by the PRCS standard?

No. The standard applies to all general industry places of employment. Among them are Agricultural services, Manufacturing, Transportation and Utilities, Wholesale Trade, Food Stores, Hotels and Other Lodging, Health Services, Museums, Botanical Gardens and Zoos but to name a few.

2. What Agricultural Standard Industrial Classification codes (SIC) fall under the scope exemption of the standard?

SIC Codes in Major Groups 01 and 02 which are directly related to crop and livestock production are exempt. All other major groups within agriculture will have to be determined on a case-by-case basis.

3. When is work in the Telecommunication Industry covered by the generic 1910.146 standard?

Telecommunications employers do have obligations under PRCS standard. Like all other General Industry employers, 1910.146(c)(1) requires them to evaluate the workplace to determine if there are any permit spaces. It is expected that these spaces have been known for years and there is most likely a history of any manholes that present hazards not already addressed by 1910.268. Those manholes which are suspected of posing "other" hazards must be evaluated under 1910.146(d)(2). The detailed evaluation does not have to be completed prior to the effective date of the standard, but does have to be completed prior to entry.

Many hazards encountered in telecommunications work in manholes and unvented vaults are addressed by 1910.268(o). The telecommunications standard will continue to be applied to those hazards, and the provisions of 1910.146 would not apply where the provisions of 1910.268(o) already apply. However, the agency can envision manholes and work situations that will be covered by 1910.146. For example, although it is rare, manholes can become overwhelmingly contaminated with toxins or other hazardous chemicals. If the work area cannot be made safe before entry, through compliance with 1910.268(o)(2)(i)(B), any entry would be performed under the provisions of 1910.146.

Confined space hazards in General Industry that are not addressed by an industry-specific standard will be covered by 1910.146.

OSHA also considers entry operations or activities which produce toxins or create other hazards, which are not controlled through compliance with 1910.268(o), to be covered by 1910.146.

4. How will OSHA enforce the PRCS standard in Electrical Power facilities?

Basically the alternate entry procedures of 29 CFR 1910.269 for "enclosed spaces" and "underground installations" apply to "qualified employees" performing maintenance or operations work. 29 CFR 1910.146 will continue to apply in all other PRCS situations.

5. How will OSHA address confined space hazards confronted by shipyard employees?

Confined spaces in shipyard employment are not subject to the 1910.146 standard. The revised 29 CFR 1915 (F.R./ Vol. 59, No. 141 dated July 25, 1994) addresses Confined and Enclosed Spaces and Other Dangerous Atmospheres in Shipyard Employment. However, if there are hazards present that the 1915 standard does not address, 1910.5 provides for the application of the general standard, in this case 1910.146.

6. How will the 1910.146 standard apply to Marine Terminals and Longshoring?

The 1910.146 standard does not apply to Marine Terminals (29 CFR 1917) or to Longshoring (29 CFR 1918).

7. Must an employer covered by an industry-specific standard perform the initial workplace evaluation required by 1910.146(c)(1)?

Yes. Employers with spaces covered by a specific industry standard must still determine if they have spaces which would qualify as a permit space not covered by the industry specific standard. Therefore, all employers must do an initial evaluation under 1910.146(c)(1).

8. A facility, falling within the scope of the General Industry standards, is undertaking physical changes involving work in permit spaces. These changes will also employ construction practices either by in-house or contractual employees. Which standard, 1910.146 or 1926.21(b)(6), will be enforced for the work involved in the permit-required confined spaces?

Generally speaking, refurbishing of existing equipment and space is maintenance; reconfiguration of space or installation of substantially new equipment (as for a process change) is usually construction. Those spaces identified under 1910.146(c)(1) as permit spaces that are undergoing maintenance or modifications, which do not involve construction, would be subject to the General Industry standards.

A confined space created during or as a result of construction activity or entered to perform construction activity would usually fall within the scope of the Minnesota Rule 5207.0300 until the space is turned over for General Industry operations.

Some examples:

- The lining in a tank is in need of restoration either to prevent the structural part of the tank from deteriorating or to prevent the product from being contaminated by the material making up the tank structure. In either case, the partial patching or total removal of existing lining and replacement is maintenance. The installation of a new lining for the above reasons is also maintenance.
- The relining of a furnace with new refractory is maintenance.
- Tuck pointing and individual brick replacement in a manhole is maintenance.
- The relining of a sewer line using a sleeve which is pushed through a section of the existing system is maintenance.
- Repainting, which is part of a scheduled program to maintain a system or prevent its deterioration

is maintenance.

9. Can a utility, other than telecommunication or electrical distribution, apply the 1910.268(o) or the 1910.269 rules for their street manhole entries?

No, the procedures for manhole entry with regard to telecommunication and electrical distribution were developed specifically to address certain anticipated hazards for those industries.

The rulemaking process for the General Industry standard for confined spaces specifically reviewed, addressed, and incorporated into the final rule the hazards of manholes used in conjunction with the distribution of other utility services, and thus 1910.146 is the appropriate standard to be followed.

SECTION (b) Definitions

1. Under what circumstances will stairs or ladders constitute a limited or restricted means of egress under the standard?

Ladders, and temporary, movable, spiral, or articulated stairs will usually be considered a limited or restricted means of egress. Fixed industrial stairs that meet OSHA standards will be considered a limited or restricted means of egress when the conditions or physical characteristics of the space, in light of the hazards present in it, would interfere with the entrant's ability to exit or be rescued in a hazardous situation.

2. Does the fact that a space has a door mean that the space does not have limited or restricted means of entry or exit and, therefore, is not a "confined space"?

A space has limited or restricted means of entry or exit if an entrant's ability to escape in an emergency would be hindered. The dimensions of a door and its location are factors in determining whether an entrant can easily escape; however, the presence of a door does not in and of itself mean that the space is not a confined space. For example, a space such as a bag house or crawl space that has a door leading into it, but also has pipes, conduits, ducts, or equipment or materials that an employee would be required to crawl over or under or squeeze around in order to escape, has limited or restricted means of exit. A piece of equipment with an access door, such as a conveyor feed, a drying oven, or a paint spray enclosure, will also be considered to have restricted means of entry or exit if an employee has to crawl to gain access to his or her intended work location. Similarly, an access door or portal which is too small to allow an employee to walk upright and unimpeded through it will be considered to restrict an employee's ability to escape. OSHA published a technical amendment to the preamble in Federal Register / Vol. 59, No. 213 / Friday, November 4, 1994, page 55208.

3. Can the distance an employee must travel in a space such as a tunnel, to reach a point of safety be a determinant for classifying a space as a confined space?

Yes. The determination would most likely be a function of the time of travel to the point of safety.

4. How will OSHA assess a space which is entirely open on one plane, such as a pit, in determining whether a space has limited or restricted means for entry or exit?

In determining whether a space has limited or restricted means for entry or exit, OSHA will evaluate its overall characteristics to determine if an entrant's ability to escape in an emergency would be hindered. Thus, a pit, shaft or tank that is entirely open on one plane can be considered a confined space if the means for entering the space (stairway, ladderway, etc.) are narrow or twisted, or otherwise configured in such a way as to hinder an entrant's ability to quickly escape (See question No. 1 of this section). Similarly, the pit, shaft, or tank itself may be confining because of the presence of pipes, ducts, baffles, equipment or other factors which would hinder an entrant's ability to escape.

5. How will compliance officers interpret a "condition in which the dust obscures vision" with reference to the definition of a hazardous atmosphere?

The phrase appears in a note and is meant to be an informational aid to employers and employees in approximating the lower flammable limits. It should be noted that combustible dusts have differing lower flammable limits which are dependent on the composition of the dusts, the particle size, distribution and other factors. Since the airborne concentration may vary considerably within the space, and the settled dust may also pose hazards, it is important that the employer recognize the potential hazards when entering confined spaces containing such dust and that the employer take appropriate precautions for protection of entrants.

Regarding flammable dusts in confined space, it will be OSHA policy to sample and to analyze such dusts for combustibility, prior to issuing citations, whenever there is doubt as to the nature and extent of the dust hazard. Note that existing permissible exposure limits for nuisance dusts and other standards continue to apply.

6. How will OSHA address a space that does not satisfy the criteria for a confined space but that potentially contains a hazardous atmosphere?

Employers must comply with the permissible exposure limits and other requirements contained in standards addressing specific toxic substances and air contaminants, to the extent applicable, in all spaces in which employees may be present. In addition, the respiratory protection standard, 29 C.F.R. 1910.134, applies where an employee must enter a space in which a hazardous atmosphere may be present and no other specific standard applies. The respiratory protection standard contains special precautions for working in atmospheres that are oxygen deficient or immediately dangerous to life or health.

7. Are the hazards posed by a confined space to be considered in determining whether a space meets the definition of a confined space?

The determination whether a space has "limited or restricted means for entry or exit" within the meaning of the standard's definition of "confined space" should include consideration of whether, in light of the hazards posed by the particular space at issue, the configuration or other characteristics of the space would interfere with an entrant's ability to escape or be rescued in an emergency situation.

8. Can a space that is initially designed for continuous human occupancy become a "confined space" because of changes in its use?

If the changes alter the character of the space or if new or more serious hazards are introduced, those changes require reevaluation of whether the space is fit for continuous employee occupancy. If the space is not fit for continuous employee occupancy and the other criteria of the confined space definition are met, the space should be reclassified as a confined space.

9. Does the characteristic "contains or has a potential to contain a hazardous atmosphere" in the definition of "permit-required confined space" refer only to those atmospheres which pose an acute hazard?

Where employees are exposed to atmospheric or toxic hazards which do not present an immediate danger of death or disability that would render the employee unable to escape from the confined space e.g., air contaminants such as arsenic or asbestos) OSHA's health standards for those hazards apply rather than 1910.146, and employees must be appropriately protected in accordance with those health standards. The PRCS standard is intended to protect entrants against short-term, acute hazards (not exposures at or below the permissible exposure limits); other standards address a broader range of health and safety concerns.

As noted in the definition of "hazardous atmosphere" relating to atmospheric concentration of any

substance for which a **dose** or **permissible exposure limit** is published in Subparts "G" and "Z", any substance that is not capable of causing death, incapacitation, impairment of ability to self-rescue, injury, or acute illness due to health effects is not covered by the PRCS standard.

- 10. The definition of permit-required confined space contains the phrase "any other recognized serious safety and health hazard" as one of its hazard characteristics which would result in a confined space being classified as a permit space. The "Types of Hazards" listing in the Confined Space Hazards section of OSHA's Confined Space Entry Course No. 226 identifies hazards. Does the mere presence of a non-specified hazards such as physical hazards (e.g. grinding, agitators, steam, mulching, falling/tripping, other moving parts); corrosive chemical hazards; biological hazards; and other hazards (i.e. electrical, rodents, snakes, spiders, poor visibility, wind, weather, or insecure footing), which do not pose an immediate danger to life or health or impairment of an employee's ability to escape from the space constitute a hazard which would invoke this characteristic?**

When a hazard in a confined space is immediately dangerous to life or health, the "permit space" classification is triggered. The list referenced above is only illustrative of the general range of confined space hazards which could, but not necessarily always, constitute a hazard which would present an immediate danger to life or health, such that "permit space" protection would be required. **The determination of whether the resulting exposure to a hazard in a confined space will impair the employee's ability to perform self-rescue is the aspect that must be addressed by the employer.**

In order for "**serious safety and health hazard**" to be **recognized** as being an impairment to escape, its severity potential for resulting physical harm to an employee must be considered.

- 11. Does the mere presence of water in a confined space such as a manhole trigger the application of the PRCS standard in order to work in that space?**

No.

- 12. If the presence of water alone is not considered a hazard characteristic which would trigger the classification of a PRCS, what would?**

As previously stated, the mere presence of water alone would not be a basis for applying the PRCS standard; there must be a quantity sufficient either to endanger the life of the entrant or to interfere with escape from the space. Water in combination with other hazards conditions could trigger the application of the permit space provisions of the PRCS standard. For example, a small quantity of water (perhaps as much as 2 to 3 inches deep) in the confined space may not trigger the PRCS classification; however, if the water conceals trip and fall hazards such as abandoned machine pads or floor holes and openings, the combination of these conditions may very well cause the confined space to be classified as a permit space.

SECTION (c) - General Requirements

- 1. Are employers covered by the PRCS standard in violation of paragraph (c)(1) of the standard if they have not evaluated their workplace to determine if any permit-required confined spaces?**

The final rule makes this clear - the basic identification of permit spaces required by paragraph (c)(1) of the final rule must be performed by the effective date of the final rule; the evaluation of the specific hazards posed by permit spaces identified under paragraph (d)(2) is required "before" entry.

- 2. Can OSHA cite an employer for not documenting the initial evaluation of the workplace required by paragraph 1910.146(c)(1)?**

The evaluation need not be documented. The employer, however, must be able to explain how the evaluation was conducted and describe the results. Thus, OSHA's citation will be for failure to evaluate as required by the standard, rather than for failure to create a record of the evaluation.

3. Does the initial survey for determining if a confined space is a permit space, required by paragraph (c)(1), mandate a specific physical survey of each space?

Not necessarily; the survey requirement may be met through existing records and knowledge of the space, provided this information is adequate to make the determination required by the standard. For example, a telecommunications company may have records which show that the hazards of all manholes in one section of the region can be addressed by the 1910.268(o) procedures and that the manholes in another section of the region may contain toxins due to ground water contamination. Only manholes in the latter section would need to be surveyed. This same approach can be used for any industry which has a number of identical spaces and records to support its determination(s).

4. How will OSHA interpret the language in paragraph 1910.146(c)(2) requiring employers to inform employees of permit spaces by posting signs or "by any other equally effective means?"

Ordinarily, information about permit spaces is most effectively and economically communicated through the use of signs. Consequently, signs would be the principal method of warning under the standard. Alternative methods, such as additional training, may be used where they are truly effective in warning all employees who could reasonably be expected to enter the space. It is the employer's obligation to assure that an alternative method is at least as effective as a sign. In some cases, employers may have to provide training in addition to signs, to protect employees who do not speak English or who would have difficulty understanding or interpreting signs. (One method by which OSHA can gauge an employer's effectiveness is through random interviews of affected employees.)

If a space has locked entry cover or panel, or an access door that can only be opened with special tools, the use of signs may be unnecessary if the employer ensures that all affected employees are informed about such spaces and know that they are not to be opened without taking proper precautions, including temporary signs, to restrict unexpected or unknowing entry.

5. Upon deciding that no employee will enter a permit space, 1910.146(c)(3) requires that ".... the employer shall take effective measures to prevent its employees from entering the permit spaces ..." What does OSHA consider "effective measures"?

These measures could include permanently closing the space and physical barriers, as well as bolting and locking the space, supplemented by training employees and posting danger signs. The steps taken by the employer must be capable of preventing employees from entering permit spaces.

6. How will an employer determine a "safe for entry" level for contaminants under the provisions of paragraph (c)(5)?

OSHA is willing to accept as the minimal "safe for entry" level, that which is 50% of the flammable or toxic substance that would constitute a hazardous atmosphere. The two examples footnoted on page 4488 of the preamble to the final rule are:

(1) The LFL for methane is a concentration of 5 percent by volume. Ten percent of this value is 0.5 percent, a concentration which would be considered hazardous by definition. Under the guideline the measured concentration of methane cannot exceed 0.25 percent after ventilation in order for the procedures specified in paragraph (c)(5)(ii) of the final rule to be acceptable.

(2) The 8-hour time weighted average PEL for chlorine, under Table Z-1, is 1.0 parts per million. This concentration of chlorine would be considered hazardous by the definition of "hazardous atmosphere". Under the guideline, the measured concentration of chlorine cannot exceed 0.5 parts

per million after ventilation in order for the procedures specified in paragraph (c)(5)(ii) of the final rule to be acceptable.

Entry under (c)(5) would not be acceptable if hazards in the space quickly increased if the ventilation were to stop. Sufficient time must be available for an entrant to safely exit the space if the ventilation stops.

7. What type of documentation will OSHA look for if an employer uses the alternate procedure of paragraph (c)(5)?

The data must demonstrate that there are no non-atmospheric hazards and that the ventilation will keep the air inside the permit space safe for entry. This should include initial data in the form of:

- Volume of the space to be entered;
- Capacity and configuration of the ventilation equipment to be used;
- Identified atmospheric hazards and potential hazards;
- The sampling results from routine testing of the space from the time ventilating has begun through final determination of acceptable entry conditions; and
- Atmospheric hazards created by work in the space.

8. What is meant by the phrase "immediate area where an employee is or will be present within the space" as used in paragraph (c)(5)(ii)(E)(2)?

The forced clean air ventilation must be directed to where the employee is working or will be working. If the space is so configured or so large that directed air cannot be delivered by local ventilation (such as fans and blowers), ducting the "clean" air is required.

NOTE: The exhaust discharge of contaminants from the permit space to areas adjacent to the permit space must not endanger the employees of the other work areas. Also, the supplied air ventilation for the permit space must not cause ventilation imbalances which would create hazards in the work area from which it is taken.

9. How much periodic testing is required?

The frequency of testing depends on the nature of the permit space and the results of the initial testing performed under paragraph (c)(5)(ii)(c).

The requirement in paragraph (c)(5)(ii)(F) for periodic testing as necessary to ensure the space is maintained within the limits of the acceptable entry conditions is critical. OSHA believes that all permit space atmospheres are dynamic due to variables such as temperature, pressure, physical characteristics of the material posing the atmospheric hazard, variable efficiency of ventilation equipment and air delivery system, etc.

The employer will have to determine and document on an individual permit space basis what the frequency of testing will be and under what conditions the verification testing will be done.

10. What are the minimal credentials for the person authorized to certify the space safe for entry referred to in paragraph (c)(5)(ii)(H)?

OSHA would consider as acceptable any employer representative who possesses a level of knowledge, training, and understanding of the specific permit space equal to that of an Entry Supervisor.

11. What does OSHA consider to be examples of changes in "use and configuration" which might increase the hazard to entrants and require reevaluation and reclassifying non-permit confined spaces under paragraph 1910.146(c)(6)?

Changes in "configuration" address physical changes in the space such as shape (adding or removal of inwardly converging floor), volume, equipment or components (addition or removal of a blender), means of access or egress.

Changes in "use" include changes in the function of the space, the contents or atmosphere created within it, the temperature and humidity, and the work practices being performed or anticipated in the space.

12. What does the phrase "made available" mean in paragraphs (c)(5)(ii)(H) and (c)(7)(iii)?

The certificate must be made available to employees entering the space so they can have the means to evaluate the measures taken for their protection. This requirement can be satisfied either by providing each affected employee with a copy of the certificate or by posting the certificate so that each affected employee is able to inspect it. In addition, the individual who prepared the certificate must be available to explain the measures taken to eliminate the hazards if any of the affected employees are reading-impaired or cannot understand the language in which the permit is written.

This can be accomplished by using the permit system. If all hazards are eliminated, the permit could be used as the document to reclassify the space as NPRCS.

13. What are the employer's responsibilities in multi-employer permit space entries?

Coordination between employers who have employees entering a particular permit space is required by 1910.146(c)(8)(iv), (c)(9)(ii) and (d)(11). The host employer who arranges for a permit space entry by contractor employees has a duty to instruct the contractor on the hazards or potential hazards and other factors that make the space a permit space. The contractor who will have employees enter the permit space is responsible for obtaining that information prior to entry. All employers who will have employees in the permit space are responsible for developing and implementing procedures to coordinate entry operations (for example, determining operational control over the space, affected employee training, rescue, emergency services, and all other aspects of the standard requiring coordination). Any one of the employers having employees enter the permit space could have operational control over the permit space during dual entry. All parties (host employer and contractors) retain responsibility for the protection of their own employees even though all the employers have agreed to a specific permit space controlling employer. There should be absolutely no doubt, by any permit space entrant, attendant, and entry supervisor regarding who the controlling employer is and whose policy and permit space practices are to be followed.

14. Does an employer who has permit spaces at their work site and had initially met its obligation under paragraph (c)(3), have to take additional measures when a contractor begins to alter a permit space?

Yes, the host employer has a continuing obligation under the standard to prevent affected employees from entering permit spaces. Paragraphs (c)(8) and (c)(9) require coordination when both the host and contractor employees are in or near a permit space during entry operations. Only affected employees (those working in or who routinely pass through the work area) are required to be informed.

15. What information about the present or previous contents of the permit space must be provided to the contractor before its employees enter?

At a minimum, the applicable Material Safety Data Sheet (MSDS) or hazard information on the

contents, coatings or liners, potential hazardous atmospheres, sampling data base, and residue(s) found or anticipated in the permit space. All information generated in the original evaluation of the permit space must also be provided.

16. Are simple alarm devices considered to be the "direct reading instruments" referenced in paragraph (c)(5)?

No, simple "alarm only" devices which do not provide readings, are not considered acceptable direct reading instruments, for either initial (pre-entry) or periodic (assurance) testing of a "(c)(5)" space since they do not provide enough information relative to the established acceptable entry conditions which is essential to the entrants knowledge. Combination units which have a meter or display which reflect the actual concentrations and a preset alarm feature would be acceptable and possibly desirable because they provide "real time" information on actual concentrations as well as the benefit of automatic (unattended) alarming at a predetermined value.

17. What does OSHA accept as a "calibrated" direct reading instrument required by paragraph (c)(5)(ii)(C) for entrants to test the atmosphere for permit space entry?

A testing instrument calibrated in accordance with the manufacturer's recommendations meets this requirement. The best way for an employer to verify calibration is through documentation.

18. Are the examples explaining physical hazards and their relationship to paragraph (c)(7) in the preamble at 58 Fed. Reg. 4490-4491 and note 15 of instances in which hazards will be deemed eliminated from permit-required confined spaces by compliance with 29 CFR 1910.147 and 1910.303 exclusive?

No. The principle embodied in the preamble that hazards will be deemed removed from permit-required confined spaces by compliance with existing standards, applies to any standard that eliminates the hazard.

If ER properly uses LOTO and eliminates the hazard, then only a citation for not reclassifying the PRCS to NPRCS should be issued.

19. How long can a space reclassified using the procedures of paragraph (c)(7) remain a non-permit confined space?

Once a space has been reclassified as a non-PRCS, it remains reclassified as long as all hazards remain eliminated. The basis for determining that all the hazards have been eliminated and thus can be reclassified must be documented. The documentation required must be kept until entry operations have been completed.

SECTION (d)- Permit Space Entry Program

1. Continuous monitoring is required by 1910.146(d)(5)(i) in the areas where the authorized entrants will be working when the employer allows entry without pre-entry determination of acceptable entry conditions for spaces and where isolation is infeasible because the space is large or part of a continuous system such as a sewer system. Does each entrant have to be monitored individually or can an area monitor be used?

An area monitor could be used where small groups (two or three employees) work together in close proximity as long as the monitor can measure hazards encountered by the employees. However, all the entrants must remain together as a group for the entire entry procedure.

2. What does testing or monitoring "as necessary" mean as required by 1910.146(d)(5)(ii) to decide if the acceptable entry conditions are being maintained?

The standard does not have specific frequency rates because of the performance oriented nature of the standard and the unique hazards of each permit space. However, there will always be, to some degree, testing or monitoring during entry operations which is reflective of the atmospheric hazard. The employer must determine the degree and the frequency of testing or monitoring. Some of the factors that affect frequency are:

- Results of test allowing entry.
- The regularity of entry (daily, weekly, or monthly).
- The uniformity of the permit space (the extent to which the configuration, use, and contents vary).
- The documented history of previous monitoring activities.
- Knowledge of the hazards which affect the permit space as well as the historical experience gained from monitoring results of previous entries.

Knowledge and recorded data gained from successive entries (such as ventilation required to maintain acceptable entry conditions) may be used to document changes in the frequency of monitoring.

3. Are the results of the air sampling and exposure monitoring required by this standard considered exposure records for purposes of 29 C.F.R. 1910.20 (c)(5) OSHA's Record Access rule?

Those results which show the composition of an atmosphere to which an employee is actually exposed (even if the employee is using a respirator) are exposure records under 29 C.F.R. 1910.20(c)(5). Conversely, if the employer determines as the result of initial air sampling not to allow entry into a confined space until additional ventilation and purging of the atmosphere has occurred, the sample would not be considered as exposure record because no employee would ever have been exposed to the atmosphere sampled. Once the employer takes corrective action so that an employee can enter, however, the results of subsequent air sampling that show the atmosphere the employee actually entered would be considered exposure records.

SECTION (h) Duties of Authorized Entrants

1. Can an employee be both an Entry Supervisor and Authorized Entrant for an entry?

The standard allows an employee to be both an entry supervisor and entrant as long as the employee has had the appropriate training and the duties of one activity do not conflict with the duties of the other.

SECTION (i) Duties of Attendants

1. When a single attendant is monitoring more than one permit space, is there a limit on how far the attendant can be from any of the spaces monitored?

The bench mark for monitoring multiple permit spaces by a single attendant is his/her ability to perform all their (attendant) duties without compromising the safety of any entrants in all the permit spaces being monitored by the attendant. There is no minimum proximity requirement.

SECTION (j) - Duties of Entry Supervisor(s)

1. Does an employer have to verify the availability of the off-site rescue service each time a permit space entry is scheduled or attempted?

Yes, the employer has overall responsibility for employee safety. If the off-site rescue service indicates, for any reason, that it would be unable to respond to a rescue summons, entry shall not be authorized unless an adequate alternative rescue service is arranged.

SECTION (k)- Rescue Service

1. Does an off-site rescue service have to have a permit space program?

No, a complete program is not necessary; however, rescue plans and procedures are necessary. Rescue services (on-site and off-site) are required by paragraph (k) to have members who are trained, equipped, and practiced for safe entry into the particular permit spaces from which they will be expected to rescue entrants.

2. What is OSHA policy on "horizontal" non-entry rescue?

When practical, non-entry rescue is required by paragraph (k)(3) of the standard and is the preferred method of rescue, even for horizontal entries. OSHA recognizes that the danger of entanglement due to lifelines or lanyards snagging or obstructions within a permit space may be greater for horizontal permit spaces than for vertical spaces.

3. Would a rescuer entering an Immediately Dangerous to Life and Health (IDLH) atmosphere using a supplied-air respirator in combination with SCBA (escape bottle), be in violation of OSHA regulations?

Yes, however, under the conditions addressed below, the violation can be considered as **de minimis**.

The PRCS standard because of its performance nature does not specify the personal protective or rescue equipment necessary for rescue. The OSHA standard for respiratory protection is 1910.134. Currently paragraph 1910.134(e)(3)(iii) requires, when an IDLH atmosphere exists, A standby man or men with suitable self-contained breathing apparatus shall be at the nearest fresh air base for emergency rescue.

The 1910.134 standard published in the June 27, 1974 issue of the **Federal Register** was derived from a now out-of-date voluntary standard (ANSI consensus standard Z88.2-1969). The most recent (1992) version of this same ANSI standard for respiratory protection for working in IDLH conditions has been changed. The new change specifies either a SCBA or a combination supplied-air respirator with SCBA for IDLH conditions.

It is OSHA policy to accept compliance with a provision in a current national consensus standard (ANSI) which provides an equivalent or greater level of protection from the hazards.

A rescue service can employ the use of supplied-air respirators in combination with self-contained breathing apparatus (SCBA) when conducting rescue operations. If a rescue service employer chooses to use combination supplied-air respirator with SCBA over the SCBA specified in the respiratory protection standard 1910.134(e)(3)(iii), for permit-required confined space rescue, the violation will be considered as **de minimis** as long as the following minimum conditions are also employed:

1. An evaluation of the permit space to be entered has been done to determine which appropriate respiratory protection (SCBA or Supplied-air with SCBA) is best suited for the rescue.
2. The rescuer's respirators and air source meet the requirements of the 1910.134 standard.
3. The air source for the rescuer's respiratory protection is independent from that which is being used by the authorized entrants.

We also would recommend the following policies and work practices for the rescue services which choose the supplied-air respirators with SCBA option:

- a. Establish a policy requiring immediate withdrawal from the space whenever a respiratory protection problem develops.
- b. Establish a policy for use and training on emergency air line sharing "buddy breathing".
- c. Ensure that the rescuers wear full body harness and use life lines whenever practical.
- d. Establish a policy requiring a minimum capacity of the source air to be twice (2X) the volume of the total needs of all rescuers connected to it for the anticipated duration of the rescuer's entry.
- e. Establish a policy which mandates a minimum team of two rescuers for all permit space rescue entries.

Appendix E

OSHA's settlement agreement with the Edison Electrical Institute, Tampa Electric Company, Consolidated Edison Co. of New York Inc., Florida Power and Light Company and Florida Power Corporation, agreed to include the March 12, 1993 letter to Mr. Stephen C. Yohay into this instruction.

This appendix is the vehicle by which this letter is included. The terms of the settlement agreement also amended the last sentence of paragraph D.2. of this letter to read as follows:

The survey requirements can be met through existing records and knowledge of the spaces, provided this information is adequate to make the determinations required by the Standard.

Please Note:

1. The original letter has not been modified and that pen and ink changes with regard to the amended sentence in paragraph D.2. will have to be accomplished by the reader.
2. This letter deals specifically with the proposed rule and not the final. Some of the comments and policy positions may change as a result of the publication of the final rule on power generation, transmission and distribution facilities.

March 12, 1993

Mr. Stephen C. Yohay McDermott, Will and Emery 1850 K Street, N.W. Washington, D.C. 20006-2296

Dear Mr. Yohay:

This is in response to your letter of February 18 regarding concerns of the members of the Edison Electric Institute about OSHA's Permit Required Confined Space standard, 29 CFR 1910.146 (confined spaces or PRCS standard). It also summarizes the extended discussion between you and your clients and OSHA and Solicitor of Labor staff on February 22, at which occasion your letter served as an agenda.

First, I will summarize the major, general points made at the meeting, and then will address the specific questions in your letter.

1. The Permit Required Confined Space standard covers electric power generation, transmission and distribution facilities and will continue to do so with respect to those spaces and situations which are not explicitly addressed in the forthcoming specific standard for the power generation industry, 29 CFR 1910.269 Electric Power Generation, Transmission and Distribution (the "power generation standard").
2. The power generation standard was published as a proposal in 1989. It was, as your colleague, Mr. Platt, notes in correspondence to the Secretary, based on electric utility industry and union inputs, among other sources. When it becomes a final standard, it will resolve many of the significant problems the industry has in complying with the general industry confined space standard.
3. OSHA accepts compliance with the proposed power generation standard, in the spaces and situations where it will apply, as equivalent to compliance with the confined space standard. That is to say, OSHA will neither issue citations nor propose penalties where the employer has appropriately carried out the requirements of the proposed power generation standard. This policy is consistent with long-standing agency practice; specific procedures are spelled out in the OSHA Field Operations Manual (CPL 2.45B et seq.) whereby compliance with proposed standards in lieu of existing applicable standards is treated as a de minimis violation of the Occupational Safety and Health Act, carrying no penalties and resulting in no citations, as long as this practice affords equivalent protection to employees.

EEI's Questions and Concerns

- A. "General Concerns". As indicated above, OSHA recognizes that the proposed power generation standard represents significant consensus by the electric utility industry and unions, and that it reflects practices already being implemented in that industry. We agree that the final standard, which we expect to be substantially similar to the proposal, will eliminate many of the specific problems raised in your letter.
- B. Regarding the Need for a "Vertical Standard for Electric Utilities." As indicated above, OSHA agrees that a standard is necessary for electric power generation, transmission, and distribution work and is moving toward its promulgation as rapidly as resources and good workmanship allow. The Agency recognizes that there are problems associated with performing similar types of work under differing construction and general industry standards. Should ambiguities remain, they will be addressed through interpretation of existing standards and through guidance to OSHA's enforcement staff through compliance directives. It is presently the intention of the Agency to propose a revision of Subpart V of the Construction Standards after final 1910.269 is published.
- C. Urging that "Electric Utilities...be excluded from the PRCS for the same reasons that shipyards were excluded." As noted in the general comments above, promulgation of an electric power generation, transmission, and distribution standard will address the electric utilities concerns and will treat them "equally" with shipyards. Note that, like the shipyards, they will not be required to implement the PRCS standard only to have to comply with a new and vastly different vertical standard after a short time. For all practical purposes, the electric utilities industry is protected from any "whip-saw effect" by simply complying with the proposed power generation standard where it applies and with the PRCS standard where the proposal does not apply.
- D. Regarding the Effect of PRCS on Operations and Customer Service.

1. Definition of permit required confined space. As indicated in our discussion, energized equipment will not trigger permit entry requirements if it is insulated, or enclosed. Where electric equipment is insulated or enclosed and where there are no atmospheric or other hazards which, in their own right, would trigger PRCS requirements, no permit is required.

Additionally, where employees are exposed to atmospheric or other toxic hazards which do not present an immediate danger of death or disability that would render the employee unable to escape from the confined space (e.g., air contaminants such as arsenic or asbestos), OSHA's health standards for those hazards apply rather than 1910.146, and employees must be appropriately protected in accordance with those health standards. The PRCS standard is intended to protect employees against specific short-term, acute hazards (not exposures at or below the permissible exposure limits); other standards address a broader range of health and safety concerns.

2. Initial Survey of Facilities. We agreed that the tens of thousands of manholes owned by the utilities need not be physically surveyed to determine whether they are permit required confined spaces. The survey requirement can be met through existing records and knowledge of the spaces.
3. Definition of Entry. While the standard defines the process of "entry" into a confined space as beginning with the insertion of any part of the body into that space, it defines as confined spaces only those areas that can contain the whole body, and not cabinets or control panels which are accessed by simply reaching in to turn a valve or a switch. This is stated explicitly in the preamble to the final rule (page 4477 column 2 of the final 1910.146 standard).
4. Definition of Hazardous Atmosphere. We agreed that the term "lower flammable limit" is synonymous with the older term "lower explosive limit". The utilities are free to use either term in their PRCS programs. Regarding flammable dusts in confined space, it will be OSHA policy to

sample and to analyze such dusts for combustibility, prior to issuing citations, whenever there is doubt as to the nature and extent of the dust hazard. Note that existing permissible exposure limits for nuisance dusts and other standards continue to apply. The note in the final standard (at the definition of "hazardous atmosphere") provides additional guidance on this topic.

5. "Declassification" of permit required spaces. As discussed on February 22, the standard provides simple criteria for classifying and re-classifying spaces. Once a space has been reclassified as a non-PRCS, it remains reclassified as long as all hazards remain eliminated. The basis for classification must be documented. With regard to the documentation required by paragraph (c)(5), it must be kept until the job is completed and there will be no further entry of the space in question. (Refer to 29 CFR 1910.146, paragraphs (c)(5) and (c)(7))
 6. Attendants. Attendants may conduct rescue from outside the confined space, using (for example) harnesses and lanyards. The attendant, for obvious reasons, may not enter the space to perform a rescue unless he or she is properly relieved by another employee who is properly qualified to assume attendant responsibilities. This precaution, with other safeguards, will prevent the possible injury or death of the rescuer. The proposed power generation standard under 1910.269(e)(5) requires stationing of an attendant trained in basic first aid at an enclosed space, under certain circumstances, to provide emergency assistance. This proposed language reflects OSHA's intent to have attendants help enclosed space entrants outside the spaces (i.e., providing first aid), rather than to have attendants enter spaces to rescue entrants. In addition, 1910.269(t)(3)(ii), cited in your letter, provides that an attendant may enter a manhole for inspection, housekeeping, taking readings, or similar work, if such work can be performed safely. A third person to act as relief for the attendant is not required. An attendant who is properly trained and equipped may conduct non-entry rescue. Neither the PRCS standard nor proposed 1910.269(e)(5) permits attendants to enter permit spaces to rescue entrants, unless the "attendant" has been properly trained, equipped, and relieved. (An attendant required under 1910.269(t)(3) would be permitted to enter the space for rescue purposes, as long as it is safe to do so.)
 7. Rescue. The confined space standard and the proposed power generation standard differ as to their requirements for retrieval lines, harnesses, etc. Compliance with the proposed power generation standard when working in manholes and other covered locations will avoid the problems enumerated in your letter. Note that retrieval lines are not required in all cases -- if the employer can demonstrate that retrieval lines are not feasible (are a greater hazard or would not contribute to rescue of an entrant), they are not required. If retrieval lines are not required, then tripods or other mechanical retrieval devices are also not required.
 8. Administrative Burdens and Paperwork. The documentation requirements of the confined space standard were carefully reviewed during the promulgation process, including a thorough regulatory analysis of paperwork burdens and other costs. We found that the burdens imposed by the standard were justified and cost-effective.
- E. Coverage of Electric Utilities in 1910.146. The proposed power generation standard does cover manhole entry and other similar industry-specific tasks; until it is promulgated, electric utility employers have the option of complying with the more general 1910.146 standard, or with the industry-specific 1910.269 proposed standard, as long as the serious hazards are addressed by compliance with the chosen standard.

With respect to electric utility work in manholes and vaults, for example, OSHA would apply 1910.146 only in the event that procedures taken under proposed 1910.269(e) and (t) do not adequately protect employees. As an illustration, the Agency would apply 1910.146 to work in a manhole where a water hazard that could not be eliminated from outside the space and that would pose a life-threatening hazard to an entrant is present. The presence of water alone would not be a basis for applying the PRCS standard; there must be a quantity sufficient either to endanger the life of the entrant or to interfere with escape from the space. In such cases, the provisions proposed in 1910.269 would not

address the hazards involved.

When our meeting ended, we indicated that we would summarize our oral responses, in writing, as a reply to your letter of February 18; you indicated that you would send an additional letter, requesting further clarification on specific points. In a later conversation with Ray Donnelly (General Industry Compliance Assistance), you indicated that no additional letter would be sent at this time.

If you have questions or additional comments about any of the foregoing, we will welcome them.

Sincerely,

H. Berrien Zettler Deputy Director Compliance Programs

Appendix F Guidance on the Reclassification of Permit Required Confined Spaces

A permit required confined space (PRCS) may be reclassified as a non-permit space under the following conditions as outlined in 1910.146(c)(7):

1 - There is no actual or potential atmospheric hazard within the space.

This means that there are no atmospheric hazards in the space and none will develop during the entry period. Use of forced air ventilation to control atmospheric hazards is not considered the elimination of the hazard.

http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=INTERPRETATIONS&p_id=21970

When looking at atmospheric hazards in confined spaces OSHA is concerned about acute hazards that would impede the entrant's ability to escape the space. Chronic hazards such as silica, lead, asbestos, etc would not constitute an atmospheric hazard in a confined space.

http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=INTERPRETATIONS&p_id=22715

2 - All hazards of the space must be eliminated.

Typically this means that the employer can either remove hazards from the space, such as emptying bins, tanks, etc, or the employer can lock out mechanical or electrical hazards of the space. Lockout is considered to eliminate the hazard of electrical or mechanical hazards for the duration of the lockout. Flowable materials (fluids, finely divided solids, etc) must be "isolated"(see definition in standard) from the permit space in order to eliminate the hazard.

http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=INTERPRETATIONS&p_id=22041

The employer shall document the basis for determining that all hazards of the space have been eliminated through a certification that contains the following:

- 1 – The date
- 2 – The location of the space
- 3 – Signature of the person making the determination

MNOSHA should encourage the employer to use the entry permit to document the reclassification to NPRCS. The entry permit will document that hazards are not there or have been eliminated.

This certification is valid as long as the hazards remain eliminated. Once equipment is re-energized the space is again a PRCS. OSHI's should review these certifications to ensure that they are being conducted each time the hazards of the space are eliminated. The employer is also required to *document the basis* that all hazards have been eliminated. This could be in a written paragraph, permit, checklist or other form but should clearly explain the hazards of the space and how they have been eliminated.

Appendix G

Guidance on Entry into Ready Mix Cement Truck Drums

Ready mix plants have been included on the National Emphasis list for silica exposure and have been inspected by MNOSHA frequently in recent years. The following guidance is an attempt to create consistency in the enforcement of 1910.146.

The drum of a ready mix truck is large enough to enter, has limited means of access/egress and is not designed for continuous human occupancy. Therefore it meets the definition of a confined space. To determine if it is a permit required confined space the OSHI must ask several additional questions. If any of the following four conditions exist then the space is considered a permit required confined space.

1. Is there an actual or potential hazardous atmosphere.

In a mixer drum that is in use and has been filled and emptied recently there does not appear to be an actual or potential hazardous atmosphere. If the drum has been idle for a period of time there may be the potential to develop an oxygen deficient atmosphere due to the rusting of the drum. There may also be a potential for a hazardous atmosphere from materials introduced into the drum during the entry (i.e. cleaning chemicals, etc) or from nearby sources (i.e. vehicle exhaust, etc). If these potential sources are addressed by the employer to ensure that they don't exist (i.e. check for and prevent idling vehicles, prohibit chemicals in the drum, etc) it may be possible to say that there are no potential hazardous atmospheres during the entry. This needs to be evaluated on a case by case basis to determine that nothing will be introduced into the space.

Chronic exposure hazards such as silica do not create a hazardous atmosphere under the confined space standard.

If an OSHI proposes a citation due to the presence of a potential hazardous atmosphere, the OSHI must specifically identify what the hazardous atmosphere may be. It is not enough to state that they "feel" that there could be a potential at some time under some conditions.

2. Does the space contain a material with the potential for engulfing an entrant?

Typically there will not be enough material within the truck drum to engulf an entrant.

3. Does the space have an internal configuration such that an entrant could be trapped?

Typically the round bottom of the drum would not be considered to have the potential to entrap an entrant. If there is some non-typical configuration in place that could entrap an entrant this would be considered a permit required confined space.

4. Does the space contain any other recognized serious safety or health hazard?

This item will cause the employer to evaluate the space to determine what other recognized serious safety or health hazards might exist. To evaluate whether a safety or health hazard is serious enough to treat a space as a permit space the OSHI shall use the following guidance from Appendix D of this document.

The determination of whether the resulting exposure to a hazard in a confined space will impair the employee's ability to perform self-rescue is the aspect that must be addressed by the employer.

In order for a "**serious safety and health hazard**" to be **recognized** as being an impairment to escape, its severity potential for resulting physical harm to an employee must be considered.

Examples of safety hazards that shall be evaluated by the employer and the OSHI include movement of the truck or drum, heat or cold stress, internal configuration (mixing fins), falling debris, lighting or electrical hazards, slip/trip and fall hazards and others. If the resultant injury to entrant is likely to prevent the entrant from performing self rescue then the space must be considered a permit required confined space.

Mixer drums are permit required confined spaces, due to at a minimum, the movement potential of the truck or the drum. The employer must treat entry into a mixer drum as a permit required confined space or, attempt to satisfy the reclassification requirements of 1910.146(c)(7).

All reclassification documentation shall be reviewed to ensure that all serious safety and health hazards have been "eliminated" within the space prior to entry. If all hazards have not been eliminated the employer shall be cited for 1910.146(c)(4) grouped with 1910.146(c)(7)(i). If the employer has eliminated the hazards of the space but not documented the reclassification as required then cite 1910.146(c)(7)(iii).

Appendix H

Relationship between the *Control of hazardous energy (LOTO) standard* and the *Permit-required confined spaces (PRCS), 29 CFR §1910.146, standard.*

(Taken directly from [Federal OSHA CPL 02-00-147](#))

The PRCS and the LOTO standards are generic and interrelated standards, and both standards may, depending upon the circumstances, apply to the isolation of hazardous energy for a PRCS. The application of the LOTO standard, with respect to PRCS, is governed by §1910.147(a)(3)(ii), which provides that, when other standards require LOTO, the procedural and training provisions of the LOTO standard shall be used and supplemented to effectively control hazardous energy. Therefore, for any particular PRCS, the question will be whether the 1910.146 standard requires LOTO to isolate hazardous energy.

The answer to this question depends on the type(s) of hazardous energy that must be isolated, whether LOTO provides isolation (offering complete employee protection), and whether the §1910.146 standard requires the use of LOTO. Pursuant to the §1910.146 standard (including its final rule preamble), electromechanical types of hazards, associated with a PRCS, must be isolated in accordance with the LOTO standard (or guarded in accordance with *Machine guarding*, Subpart O, requirements). Failure to follow the procedural and training requirements of the LOTO standard should be cited as §1910.147 violations related to the isolation of electro-mechanical hazards.

The PRCS standard does not, however, allow LOTO for flowable material isolation. This is because compliance with §1910.147 does not, in all cases, adequately isolate hazards created by materials such as steam, flammable gases, flammable and combustible liquids. In a permit-required confined space, hazards associated with flowable materials will be considered isolated only by the use of the following techniques: blanking or blinding; misaligning or removing sections of lines, pipes or duct; and use of a double block and bleed system. A double block and bleed isolation system, for example, usually utilizes the closure of two valves, the opening of a bleeder valve, and the application of LOTO devices (offering complete employee protection); whereas an employer can comply with §§ 1910.147(d)(3) and 1910.147(d)(4) of the LOTO standard by simply closing and LOTO of a single valve (which could create atmospheric hazards due to the leakage of a single valve).