



## CONFINED SPACE RESCUE COMPLIANCE... WHAT'S YOUR COMFORT LEVEL? BY ROBERT N. AGUILUZ

What's your comfort level when it comes to compliance with OSHA's permit-required confined space rescue requirements? Sounds like a simple question, doesn't it? Unfortunately, many who are very comfortable with their confined space rescue program are actually far from compliance. There are many reasons for a false sense of security—not understanding the extent of the rescue requirements, being unaware of what OSHA will look for in a rescue program, reliance on contractors to provide rescue without a critical evaluation of their abilities, affirmative ignorance (not wanting to know), and more.

The purpose of this article is to address, in detail, the requirements of the standard with regard to rescue. Hopefully, what will follow is a critical self-analysis in which you will reassess whether you should be as comfortable as you are with your rescue program! Key to getting the most out of this critical self-analysis is three thoughts:

1. The permit-required confined space standard is "performance-based." That means that in addition to the minimum training requirements that are provided in the standard, additional steps must be taken to ensure that the team is capable in terms of equipment, training, and time of response to perform rescue in a safe and efficient manner; and
2. Although rescue is required in order to protect the entrant, the primary purpose of the sections of the standard dealing specifically with rescue is to protect the rescuers. These sections are intended to require that the employer provide proper training and equipment to the rescuers so that they can perform rescue in a safe and timely manner.
3. A critical component of compliance with all aspects of the Permit-Required Confined Space regulation is what you do ahead of time to prepare. This applies equally to the rescue provisions of the standard.

### **The Permit-Required Confined Spaces Regulation**

The starting point for compliance is the specific language of 29 CFR 1910.146, the Permit-Required Confined Spaces regulation. The most relevant portions of the standard are paragraphs (k) and (l). Each section of these paragraphs will be discussed in turn.

#### **(l) Employee participation**

**(i) Employers shall consult with affected employees and their authorized representatives on the development and implementation of all aspects of the permit space program required by paragraph (c) of this section.**

Notice that this analysis begins not with the specific rescue requirements of the standard, but with paragraph (l) dealing with employee participation. Although not a specific rescue requirement, it is absolutely the best starting point for determining what your comfort level should be.

Do you ask the rescue team what they feel they need for rescue? Input from the rescue team is essential to determine whether your rescue team is where it needs to be in terms of equipment, training, and ability to respond in a timely manner.

Prior to the addition of paragraph (l), which became effective February 1999, it would have been simply a good recommendation to obtain this input. However, now it is a *requirement*. Pursuant to paragraph (l), it is mandatory that the employer "consult with affected employees and their authorized representatives on the development and implementation of *all* aspects of the permit space program." (emphasis supplied). This necessarily includes rescue.

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For an employer with a rescue team made up of in-house employees, input from the rescue team can be the first “gut check” in determining what your comfort level should be. The rescue team members and rescue team leaders typically understand better than most (if not by actual knowledge, by survival instinct) that the purpose of the rescue requirements of the PRCS standard is primarily the protection of rescuers. Rescuers who do not feel that their training is sufficient to effectively and safely perform rescue in any circumstance they potentially will face will usually be quick to say so.

**(k)(1) Rescue and Emergency Services. An employer who designates rescue and emergency services, pursuant to paragraph (d)(9) of this section shall:**

Section (k)(1) applies to the employer who designates the rescue service. This can be the employer who uses his own employees to provide rescue, the employer who contracts with an outside service to provide response, the employer who designates a municipal agency as the responder, or a host employer who designates the rescue service that a contractor is to use in a facility.

**(i) evaluate a prospective rescuer’s ability to respond to a rescue summons in a timely manner, considering the hazards identified;**

**(Note to paragraph (k)(1)(i): What will be considered timely will vary according to the specific hazards involved in each entry. For example, §1910.134, Respiratory Protection, requires that employers provide a standby person or persons capable of immediate action to rescue employee(s) wearing respiratory protection while in work areas defined as IDLH.)**

Are the types of entries and the work to be performed evaluated prior to the entry to determine whether the response will be timely, given the circumstances? For instance, if you make a decision to send an entrant into a permit-required confined space where there is an actual hazardous atmosphere (such as a nitrogen purge), have you made provisions so that the entrant can be rescued *immediately* if there is a problem with his/her air source? In such cases, rescuing someone in a “timely manner” would only be possible with a team standing by outside of the space ready to perform rescue. What about other not-so-obvious circumstances? If there is a potential hazardous atmosphere, how quick would rescue have to be performed in order to be effective?

**(ii) Evaluate a prospective rescue service’s ability, in terms of proficiency with rescue-related tasks and equipment, to function appropriately while rescuing entrants from the particular permit space or types of permit spaces identified;**

This subsection deals with the team’s ability to respond appropriately while rescuing entrants *from the particular permit spaces or types of permit spaces identified*. Note that this section assumes that you have identified the types of spaces into which entry is made. As a practical matter, you cannot have evaluated the rescue service’s ability to rescue entrants from the particular space or type of space if you have not identified the types of spaces present. OSHA’s non-mandatory Appendix F provides guidelines for determining the types of spaces present in a facility. (Reference: Roco’s Confined Space Types Chart.)

Assuming the types of spaces have been identified, the prospective service’s ability must be evaluated. Are you: 1) conducting an evaluation of the rescue service, or; 2) ensuring that the rescuers are certified to the NFPA Rescue Technician level?

OSHA does not provide any specific requirements for conducting a performance evaluation, but non-mandatory Appendix F provides some guidelines for assisting in an evaluation. Simply providing training with no evaluation (in the case of an in-house/employee team) or contracting a service without an evaluation in most cases is not sufficient.

Does your rescue service (or your contracted service) certify its rescuers to the NFPA National Consensus Standard Rescue Technician level? If so, this could simplify your evaluation process.

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Although certification is not required by the regulation, this is a good tool in demonstrating proficiency. OSHA does not have specific requirements for how to train rescuers, but NFPA does and OSHA has long looked to national consensus standards for assistance in interpreting questions of OSHA compliance where OSHA has no specific regulation.

If rescuers are certified to the NFPA Rescue Technician level, this simplifies the task of demonstrating the “prospective rescue service’s ability, in terms of proficiency with rescue related tasks and equipment, to function appropriately while rescuing entrants...”

**(iii) Select a rescue team or service from those evaluated that:**

**A. Has the capability to reach the victim(s) within a time frame that is appropriate for the permit space hazard(s) identified;**

Again, the issue of timely response under the specific circumstance of the entry applies. Have you evaluated the response time of your rescue service?

An additional note at this point is warranted: do not assume that you will have timely response simply because you have an in plant team, particularly if the team consists of production personnel. The realities of turning over a current task to another person before responding, gathering and transporting equipment to the entry site, staging equipment, and organizing the rescue can all conspire against a rescue team with regard to timely response.

**B. Is equipped for and proficient in performing the needed rescue services;**

Have you determined whether the rescue service has the proper equipment to perform the job? What about packaging equipment? Not only must the entrant be rescued, but the entrant must also be rescued *properly*. If, for instance, the entry is one with the potential for a neck or back injury, you can’t just ignore the injury and haul the victim out in only a harness. You need the proper equipment, *and* the proper training to rescue the victim properly.

**(iv) Inform each rescue team or service of the hazards they may confront when called on to perform rescue at the site; and**

The rescue service must be informed of the specific hazards they may face. As interpreted by OSHA, simply informing the rescue service that there are hazards is not enough. They must be aware of the specific hazards. This is one of the requirements that makes it difficult to rely on an off-site municipal response team and still be in compliance. The amount of coordination necessary to ensure that the outside municipal agency is aware of the specific hazards of each entry is usually impossible to maintain given other responsibilities of the agency.

**(v) Provide the rescue team or service selected with access to all permit spaces from which rescue may be necessary so that the rescue service can develop appropriate rescue plans and practice rescue operations.**

This is a fairly straightforward subsection. The rescue team must have access to develop preplans and to practice rescue operations. This section can, however, create some difficulty with regard to relying on a municipal service that is expected to respond on an emergency basis. Providing access to outside municipal responders according to their terms and when they see fit is sometimes beyond the access that is typically allowed by industrial facilities. The same problems are not typically faced by in-house responders or contract responders that are brought in for particular entries.

**(k)(2) An employer whose employees have been designated to provide permit space rescue and emergency services shall take the following measures:**

This section applies to the employer whose employees will provide the rescue service for the confined space entry.

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**(i) Provide affected employees with the personal protective equipment (PPE) needed to conduct permit space rescues safely and train affected employees so they are proficient in the use of that PPE, at no cost to those employees;**

Does your rescue team have all of the PPE (including appropriate supplied air respirators) required to perform rescues safely? Have the members of the rescue team been trained and are they proficient in the use of the equipment? Again, have you asked the rescue team if they have all of the necessary equipment and training?

**(ii) Train affected employees to perform assigned rescue duties. The employer must ensure that such employees successfully complete the training required to establish proficiency as an authorized entrant, as provided by paragraphs (g) and (h) of this section;**

Are you absolutely sure that the members of the rescue team have received all of the training necessary to perform the assigned duties? If you have spaces that are elevated, or may have scaffolding erected inside for work to be performed, does the team have high angle rescue training? Remember, if you successfully extract an entrant from an elevated space, or if they are hanging from fall protection inside of a vessel, you cannot successfully perform rescue without these techniques. Are your rescuers trained to perform proper patient packaging techniques for performing confined space rescue? Have the rescuers received all of the training required of an authorized entrant? Have they been trained in proper atmospheric monitoring and ventilation techniques? All of these skills are required for rescue, and the person(s) assigned these duties must be properly trained.

**(iii) Train affected employees in basic first-aid and cardiopulmonary resuscitation (CPR). The employer shall ensure that at least one member of the rescue team or service holding a current certification in first aid and CPR is available; and**

Have all employees been trained, at a minimum, in first aid and CPR? If so, is there at least one with a current certification available at all times when entries are in progress? Also, remember that this is a *minimum* requirement. If the rescue team member is assigned a duty that requires more training, is the additional training provided? As discussed in the previous section, if a rescuer is assigned as an entry rescuer and must package an entrant in order to properly perform the rescue, has the additional medical packaging training been provided?

**(iv) Ensure that affected employees practice making permit space rescues at least once every 12 months, by means of simulated rescue operations in which they remove dummies, manikins, or actual persons from the actual permit spaces or from representative permit spaces. Representative spaces shall, with respect to opening size, configuration, and accessibility simulate the types of permit spaces from which rescue is to be performed.**

Too often a period is subconsciously placed after the phrase “at least once every 12 months” while the requirement is once every 12 months *from representative spaces*. This is where the “typing” of spaces comes in, as discussed above with reference to (k)(1)(ii). Training in one type of space does not necessarily prepare you for training in another type of space.

For example, if the worst case scenario in your facility is a space with an 18” portal that is extremely congested, you might be tempted to become proficient in that space and assume that you are then prepared to perform rescue in any type of space. Don’t fall into that trap! Practicing in a small space where you are required to “bend” medical protocol because the space is too small to perform packaging does not prepare you to perform rescue where space permits you to properly package the patient. In short, what rescue techniques are proper is driven in part by the size, configuration and accessibility of the space. Again, you must identify the types of spaces you have, and practice in the actual spaces, or in each “representative” type, at least once every 12 months.

Keep in mind that the standard is performance based and the “once every 12 months” is a minimum requirement. The rescue service must also be capable. In most cases, practicing once every 12 months is not sufficient. Rescue skills are perishable, and those that only practice once a year are most likely not going to be capable for the whole 12 month period between training sessions.

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**(k)(3) To facilitate non-entry rescue, retrieval systems or methods shall be used whenever an authorized entrant enters a permit space, unless the retrieval equipment would increase the overall risk of entry or would not contribute to the rescue of the entrant. Retrieval systems shall meet the following requirements.**

Is the space and entry evaluated to determine whether retrieval can be performed? When retrieval may be possible at any time during the entry, is retrieval equipment in place for the entry? Or, are you relying on the fact that you have a rescue team and not assessing the entry for retrieval possibilities and providing retrieval equipment?

Note the mandatory “shall” in this subsection. Having a entry rescue team does not substitute for the retrieval requirements of (k)(3). In order to minimize exposure of personnel to permit-space hazards, particularly where something has already gone wrong, OSHA expects that retrieval will be performed wherever possible and appropriate.

The exceptions to providing this equipment are when the equipment creates a greater hazard, or where it will not contribute to the rescue. Remember to consider all of the independent pieces of equipment before deciding not to use it. For example, in a situation where a retrieval line won't work due to entanglement hazards, wearing a harness will still contribute to the rescue, as the rescuers would not be required to put a harness on the entrant for extraction.

Also remember to consider all phases of the entry. Retrieval may be possible during part but not all of the entry. Retrieval equipment must be in place whenever retrieval is possible.

**(i) Each authorized entrant shall use a chest or full body harness, with a retrieval line attached at the center of the entrant’s back near shoulder level, above the entrant’s head, or at another point which the employer can establish presents a profile small enough for the successful removal of the entrant. Wristlets may be used in lieu of the chest or full body harness if the employer can demonstrate that the use of a chest or full body harness is infeasible or creates a greater hazard and that the use of wristlets is the safest and most effective alternative.**

The same considerations discussed in the previous paragraph are applicable here. Note that this section additionally addresses wristlets. Be aware that the Occupational Safety and Health Review commission has upheld OSHA’s position that when wristlets are necessary, if possible they must be used in conjunction with the full body harness. Using wristlets alone is only acceptable where using a harness in conjunction is not possible. This is due to the potential injury that might be caused by lifting with wristlets alone.

**(ii) The other end of the retrieval line shall be attached to a mechanical device for retrieval or fixed point outside the permit space in such a manner that rescue can begin as soon as the rescuer becomes aware that rescue is necessary. A mechanical device shall be available to retrieve personnel from vertical type permit spaces more that 5 feet (1.52m) deep.**

Do you supply a mechanical device for retrieval? OSHA has interpreted “mechanical device for retrieval” to mean a system that creates a mechanical advantage, whether a manufactured winch or individual components such as a hauling system constructed by the rescuers.

**(k)(4) If an injured entrant is exposed to a substance for which a Material Safety Data Sheet (MSDS) or other similar written information is required to be kept at a worksite, that MSDS or written information shall be made available to the medical facility treating the exposed entrant.**

Are relevant MSDS’ available with the permit at the space? These must go with the entrant during transport to the medical facility.

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## NON-MANDATORY APPENDIX F

Do you ignore Appendix F because it is non-mandatory? Keep in mind, the only thing non-mandatory is that you don't have to follow that exact procedure delineated in the appendix. You still have to get to the same result. You are required to ensure the rescue team is capable, and appendix F provides guidelines for determining whether the rescue team is capable in terms of equipment, training, and timely response. You are free to re-invent the wheel by coming up with your own method of evaluating the capability of the service, *but it is mandatory to ensure the capability nonetheless!* In short, Appendix F is a non-mandatory method of meeting a mandatory requirement.

## PERMIT-REQUIRED CONFINED SPACES COMPLIANCE DIRECTIVE

In addition to the referencing the language of the standard, look at OSHA's compliance directive for purposes of assessing your comfort level. The compliance directive is a guidance document for OSHA compliance personnel conducting a review of a permit-required confined space program. Some of the questions that the compliance officer may ask are:

- 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.

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Do you feel confident that you can answer all of these questions satisfactorily and back-up your answers to OSHA's satisfaction? Your rescue program may be in good shape, but if you don't ask the questions, you may not know until it is too late.