DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration

21 CFR Part 558

New Animal Drugs for Use In Animal Feeds; Melengestrol Acetate and Lasalocid; Technical Amendment

AGENCY: Food and Drug Administration, HHS.

ACTION: Final rule; technical amendment.

SUMMARY: The Food and Drug Administration (FDA) is amending and clarifying the animal drug regulations concerning melengestrol acetate (MGA) and the special considerations related to making type B and C feeds and lasalocid type B liquid feed specifications used for making lasalocid/MGA type C heifer feed.

EFFECTIVE DATE: December 1, 1998.

FOR FURTHER INFORMATION CONTACT: Jack Caldwell, Center For Veterinary Medicine (HFV–126), Food and Drug Administration, 7500 Standish Pl., Rockville, MD 20855, 301–594–1638.

SUPPLEMENTARY INFORMATION: Pharmacia & Upjohn Co., 7000 Portage Rd., Kalamazoo, MI 49001–0199, is sponsor of NADA's 39–402 and 140–288 that provide for combining separately approved melengestrol acetate (MGA) (dry and liquid) and lasalocid (dry and liquid) type A medicated articles to make lasalocid/MGA (dry and liquid) type B feeds. The type B feeds are used to make dry type C feeds for heifers fed in confinement for slaughter for increased rate of weight gain, improved feed efficiency, and suppression of estrus (heat). The sponsor requested that § 558.342 (21 CFR 558.342) be amended to change the special considerations in paragraph (c)(1) to read ''type B or C medicated feeds'' and to change the limitations in paragraph (d)(3)(ii) by adding the specification ''The liquid medicated feeds are required to be manufactured in accordance with § 558.311(d).'' FDA concurs with the sponsor's request and extends the amendments to special considerations to include all type B or C feeds for clarity as originally intended. The regulations are amended in paragraph (c) of § 558.342 as requested.

FDA has determined under 21 CFR 25.33(a)(1) that this action is of a type that does not individually or cumulatively have a significant effect on the human environment. Therefore, neither an environmental assessment nor an environmental impact statement is required.

List of Subjects in 21 CFR Part 558

Animal drugs, Animal feeds.

Therefore, under the Federal Food, Drug, and Cosmetic Act and under authority delegated to the Commissioner of Food and Drugs and redelegated to the Center For Veterinary Medicine, 21 CFR part 558 is amended as follows:

PART 558—NEW ANIMAL DRUGS FOR USE IN ANIMAL FEEDS

1. The authority citation for 21 CFR part 558 continues to read as follows:

Authority: 21 U.S.C. 360b, 371.

§ 558.342 [Amended]

2. Section 558.342 *Melengestrol acetate* is amended in paragraph (c) after the phrase ''Type B'' each place it appears by adding the phrase ''or C'' and in paragraph (d)(3)(ii) by adding a sentence after the first sentence to read ''The liquid medicated feeds are required to be manufactured in accordance with § 558.311(d).''.

Dated: November 10, 1998.

Andrew J. Beaulieu,

Acting Director, Office of New Animal Drug Evaluation, Center for Veterinary Medicine.

[FR Doc. 98–31573 Filed 11–30–98; 8:45 am]

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DEPARTMENT OF LABOR

Occupational Safety and Health Administration

29 CFR Part 1910

[Docket No. S–019A]

RIN 1218–AA51

Permit-Required Confined Spaces

AGENCY: Occupational Safety and Health Administration (OSHA), Labor.

ACTION: Final rule.

SUMMARY: This final rule amends the Occupational Safety and Health Administration (OSHA) standard on Permit-Required Confined Spaces (permit spaces) (29 CFR 1910.146) to provide for enhanced employee participation in the employer's permit space program, to provide authorized permit space entrants or their authorized representatives with the opportunity to observe any testing or monitoring of permit spaces, and to strengthen and clarify the criteria employers must satisfy when preparing for the timely rescue of incapacitated permit space entrants. The revisions being made to the final rule will substantially enhance the protections being provided to permit space entrants and will additionally clarify a number of issues that have arisen since promulgation of the final Permit-Required Confined Spaces rule in 1993.

Specifically, OSHA is clarifying and strengthening the requirements in revised paragraphs (d), *Permit-required confined space program,* and (e), *Permit system,* to allow for greater employee participation in the permit-space program and for employee access to program information developed under the standard. The Agency is also revising paragraphs (c) and (d) to specify that employers must provide those employees who are authorized permit space entrants, or their authorized representatives, an opportunity to observe any testing of the space that is conducted prior to entry or subsequent to such entry. The Agency believes that these revisions are necessary to ensure that permit space entrants, whose work often requires entry into potentially life-threatening atmospheres, have the information necessary to protect themselves and their co-workers from confined space hazards. Allowing authorized entrants or their authorized representatives to observe the testing of the spaces they are required to enter will help to ensure that the testing has been done properly, that the respirators and other personal protective equipment being worn are appropriate, and that the entrants understand the nature of the hazards present in the space. In addition, paragraph (k) of the final rule, *Rescue and emergency services,* is being revised to clarify the criteria employers must satisfy when selecting a rescue team or service to rescue incapacitated permit space entrants, and a new paragraph (l), *Employee participation,* is being added to the final rule to ensure employee involvement in permit space program development and implementation. A non-mandatory appendix is also being added to the standard to assist employers in selecting appropriately trained and equipped rescuers.

EFFECTIVE DATE: This final rule will become effective February 1, 1999.

ADDRESSES: In compliance with 28 U.S.C. 2112(a), the Agency designates for receipt of petitions for review of the standard the Associate Solicitor for Occupational Safety and Health, Office of the Solicitor, Room S–4004, U.S. Department of Labor, 200 Constitution Avenue NW, Washington, D.C. 20210.

FOR FURTHER INFORMATION CONTACT: Ms. Bonnie Friedman, U.S. Department of Labor, Occupational Safety and Health Administration, Office of Information and Consumer Affairs, Room N3647,

Washington, D.C. 20210, telephone (202) 693–1999.

SUPPLEMENTARY INFORMATION:

I. Background

On January 14, 1993, the Occupational Safety and Health Administration (OSHA) issued a general industry standard (29 CFR 1910.146) to require protection for employees who enter permit-required confined spaces (permit spaces). The permit space standard, which provides a comprehensive regulatory framework for the safe performance of entry operations in general industry workplaces, became effective on April 15, 1993.

The United Steelworkers of America (USWA), the American Gas Association, and the Edison Electric Institute sought judicial review of the standard. In particular, the USWA argued that paragraph (k)(2) of the standard, which addresses the use of off-site rescue services, was vague and ineffective. The USWA also stated that OSHA had inappropriately omitted from the final rule a provision allowing affected employees or their designated representatives to observe any required testing or monitoring of permit spaces and a provision granting affected employees access to permit space testing or monitoring results. All three petitions were subsequently withdrawn pursuant to settlement agreements.

Based on settlement discussions with the USWA, OSHA agreed to initiate further rulemaking, and a notice of proposed rulemaking (NPRM) was accordingly issued on November 28, 1994. In the notice, the Agency specifically asked for public input on the USWA's suggestion that OSHA add provisions to the rule providing employees the opportunity to observe permit space monitoring or testing as well as granting them access to the results of such testing or monitoring. The notice also proposed changes to paragraph (k)(2) to clarify that host employers must ensure that rescue teams or services selected to perform permit space rescues at the host employer's facility have the capability to provide rescue in a timely manner, depending on the hazard(s) present in the permit spaces at the host employer's facility. In addition, on the basis of information received after the 1993 final rule was published, OSHA proposed to make the requirement for the point of attachment of a retrieval line more performance oriented by permitting any point of attachment to be used that enables the entrant's body to present the smallest possible profile during removal.

The NPRM set a 90-day comment period, ending on February 27, 1995, to receive written comments on the proposed revisions and the issues raised. OSHA received 51 written comments (Exs. 161–1 through 161–51). Several commenters (Exs. 161–21, 161–22, 161–38, 161–40, 161–44) requested that OSHA convene an informal public hearing to address their concerns.

OSHA published a notice of informal public hearing on August 2, 1995, scheduling a hearing for September 27, 1995, in Washington, D.C. In the hearing notice, OSHA also announced the extension, until September 13, 1995, of the public comment period to receive comments relating to the issues raised in the hearing notice. Twenty-seven additional comments (Exs. 161–52 through 161–78) were received as a result of the reopening of the record.

Twelve participants introduced testimony and evidence at the September 27 and 28 public hearing, which was presided over by Administrative Law Judge Joel Williams. At the conclusion of the hearing, Judge Williams set a post-hearing period for the submission of additional briefs, arguments and summations (ending on December 20, 1995). A total of 12 submissions (Exs. 178 through 189) were received during the post-hearing period. On February 14, 1996, the record for the rulemaking was closed and certified to OSHA. The record for this phase of the rulemaking contains a total of 90 submissions and more than 470 pages of hearing transcript. OSHA has carefully considered all of the materials submitted as part of this rulemaking in the drafting of this final rule. The materials submitted are available for review and copying in the OSHA Docket Office, Docket S–019A.

A few commenters appeared to believe that this revision constitutes an entirely new rulemaking proceeding (Exs. 161–33, 167). OSHA emphasizes, however, that this proceeding is properly viewed as a continuation of the rulemaking leading to the 1993 standard. Therefore, the Agency is not required to demonstrate that the relatively minor changes it is making to the PRCS standard are independently justified or that they, by themselves, effect a substantial reduction in significant risk. OSHA made that finding for the PRCS standard as a whole in 1993. In this case, the changes OSHA is making to paragraphs (c), (d), (e), and (k) essentially clarify what was always the Agency's intent with regard to employee representatives' access to information and employers' evaluation and selection of rescue services and teams. Although it is OSHA's view that the employee participation revisions it is making to paragraphs (c) and (d), and the addition of paragraph (l), will in fact substantially reduce the risks faced by permit space entrants, the revisions are proper so long as they are rationally related to the purposes of the OSH Act and the standard as a whole, and are supported by the rulemaking record.

II. Summary and Explanation of the Final Rule

The revisions to the final rule make changes to several provisions of paragraphs (c), (d), (e), and (k) of OSHA's permit-space standard (29 CFR 1910.146), and add a new paragraph (l). These changes, and the Agency's rationale for making them, are described below. References to exhibits in the docket (Docket S–019A) are designated ''Ex.,'' followed by the exhibit number. References to the continuously paginated transcript of the public hearing held on September 27 and 28, 1995 (Exs. 192X, 193X), are designated Tr., followed by the page number.

Paragraphs (c), General Requirements, (d), Permit-required confined space program, and (e), Permit system

A. Clarification of the Need To Provide Authorized Representatives With Information Required by the Standard

Paragraphs (c)(5)(i)(E), (c)(5)(ii)(H), and (c)(7)(iii) have been revised to specify that OSHA intends authorized representative(s) of employees to have access to any information provided to employees under the standard. These wording changes are meant to clarify what has been longstanding OSHA policy and practice, i.e., to recognize the right of authorized representatives of employees to receive the same information as employees receive under the Agency's standards. In recognition of that policy, the Permit Space standard promulgated in 1993 specifically provides, in paragraph (c)(4), that the written program, which contains the employer's procedures and policies for implementing that program, be available for inspection and copying ''by employees and their authorized representatives.'' Thus, the changes being made to paragraphs (c)(5)(i)(E), (c)(5)(ii)(H), and (c)(7)(iii) in this revised rule merely provide additional clarification of the Agency's intent.

The need to clarify these provisions was discussed by the USWA, which noted (Ex. 161–38) that ''The right of employees and their representatives to relevant information has been a regular feature of OSHA standards since the beginning.'' In the same exhibit, the

USWA points to several OSHA standards, including the Hazard Communication standard (29 CFR 1910.1200), the Employee Access to Exposure and Medical Records standard (29 CFR 1910.1020), and the Process Safety Management standard (29 CFR 1910.119) that ''give employees and their representatives very broad rights to information.'' The USWA reiterated this view in post-hearing comments (Ex. 188). OSHA agrees that it was the intent of the Permit Space standard to provide both employees and their authorized representatives with access to the information addressed by these provisions of paragraph (c), and the changes made to the final rule reflect this position and bring the Permit Space standard into conformance with the language traditionally used in OSHA standards.

B. Employee Observation of Atmospheric Testing

Paragraphs (c)(5)(ii)(C) and (c)(5)(ii)(F) have been revised by adding a sentence to each of them that specifically requires employers whose employees enter permit spaces to give these employees, or their authorized representatives, an opportunity to observe the testing of the space during pre-entry (paragraph (c)(5)(ii)(C)) and during entry (paragraph (c)(5)(ii)(F)). In the NPRM, OSHA solicited comment (59 FR 60737) about revising 29 CFR 1910.146 to allow affected employees or their authorized representatives to observe the testing and evaluation of confined space conditions, prior to and during entry. Specifically, the proposal stated, ''* * * the Agency is considering whether such a provision [one requiring affected employees or their designated representatives to be permitted to observe any testing conducted under the confined space standard] should be added to the permit space standard based on the concerns expressed and on the record developed as a result of this notice.''

The USWA (Ex. 161–38), which requested a hearing on this and other matters, urged OSHA to incorporate such a provision into the standard both on the grounds that employee protections would be enhanced and that Section 8(c)(3) of the Act mandated the inclusion of such a provision:

> The benefits of employee observation of monitoring are well established. Congress certainly thought employees should have the right to observe the monitoring for air contaminants to which they could be exposed * * *. We believe employee observation should be viewed as a matter of right. Employees now have the right to observe the monitoring of air contaminants outside confined spaces, even when the potential health effects may not occur for many years. A worker entering a confined space risks sudden death if the monitoring was not done properly. Surely that worker should have the right to observe the monitoring. (Ex. 161–38).

Many commenters argued that it was not necessary or appropriate to add an observation of monitoring provision to the Permit Space standard (see, for example, Exs. 161–9, 161–14, 161–20, 161–49, 161–55, 161–78, 184, 187, Tr. 40, 127, 170, 207). The issues raised by these commenters centered on the following points:

(1) That the existing standard is adequately protective and thus that no further changes are necessary;

(2) That the Act does not, at Section 8(c)(3), mandate such a requirement for safety, as opposed to health, standards;

(3) That allowing employees and their representatives to observe the testing of spaces would slow operations without adding to the safety of the entry and might actually increase risks; and

(4) That such a provision has the potential for abuse and could become a labor-management issue.

These issues, and OSHA's responses to them, are addressed in turn below.

Several commenters were of the opinion that adding an observation of monitoring provision is unnecessary because the existing Permit Space standard already adequately provides for the sharing of relevant testing information with entrants. For example, the Pennzoil Company (Ex. 161–49) stated, ''Existing requirements at Section 1910.146(d)(5) and (e)(3) already provide for adequate employee access to the results of testing and monitoring in permit spaces.'' Arguing along similar lines, Union Electric (Ex. 161–35) noted that the existing standard ''already requires that the results of initial and periodic tests performed under 1910.146(d)(5) be entered on the entry permit, and 1910.146(e)(3) now requires that the permit be made available to all authorized entrants at the time of entry. As a practical matter, affected employees are usually briefed on the results of the exposure monitoring during the pre-job briefing and before entry into the space.''

OSHA is pleased to learn that some employers have taken the additional safety precaution of providing entrants with a pre-entry briefing that includes a report on the results of the monitoring of the space, and the Agency is also aware that the existing standard contains a number of provisions requiring employers to provide information on the results of testing to those employees who are entering a permit space. However, OSHA concludes that these provisions, although essential to the safety and health of entrants, are not a substitute for the observation of monitoring provisions being added to the standard, for the following reasons.

Having access to the entry permit will not prevent the kinds of errors that could be detected by having employees or their representatives observe the actual testing of the space. For example, evidence in the rulemaking record shows that monitoring errors, such as using the wrong monitor, monitoring for the wrong substance, or failing to test the space thoroughly, contribute to a number of confined space accidents (Tr. 286, 317). And if the evaluation or testing of the space is improperly performed, inaccurate information will unknowingly be recorded on the entry permit, and entrants relying on this inaccurate information could be placed at risk of sudden death or serious injury. In situations such as these, the presence of authorized employees or their representatives could well have detected the error and remedied the problem.

The record contains reports of several incidents where employees who observed improperly performed atmospheric tests were able to bring the errors to the attention of the testers before an accident occurred. For example, in one case, the person doing the atmospheric testing calibrated the testing instrument inside the confined space. The entrant pointed out this error and it was corrected (Ex. 161–38, Tr. 332–333). In other cases in the record, employee observation of testing and monitoring might have prevented an accident. The International Chemical Workers Union described an incident involving a vessel that had been tested by a poorly trained evaluator who had apparently failed to detect a flammable atmosphere. The vessel later exploded, killing several workers. There are a number of other dangerous situations that could arise that employee observation of monitoring could avert. For example, authorized employees and their representatives are often aware that significant changes may have occurred in conditions within the space, e.g., that the employer is considering reclassifying the space based on new monitoring data and can be expected to take extra precautions as a result. Observing the testing process would also permit employees or their representatives to detect human errors, such as the inadvertent recording of inaccurate data. In addition, OSHA believes that employees who directly observe the monitoring are likely to gain

an enhanced appreciation for the hazards they face.

Thus, OSHA believes that providing employees or their representatives with the opportunity to observe the testing and monitoring of permit spaces will have the same kinds of benefits that such observation has had in the context of OSHA's health standards: knowledgeable employees who are given the opportunity to participate actively in protecting their own safety and health and that of their co-workers often identify potentially serious problems and help to solve them as well. Accordingly, paragraph (c)(5)(ii)(C) has been revised by adding the sentence ''Any employee who enters the space, or that employee's authorized representative, shall be provided an opportunity to observe the pre-entry testing required by this paragraph.'' Similarly, the language of paragraph (c)(5)(ii)(F) has been revised to add the following sentence: ''Any employee who enters the space, or that employee's authorized representative, shall be provided with an opportunity to observe the periodic testing required by this paragraph.''

A number of commenters (see, e.g., Exs. 161–26, 161–35, 161–37, 161–48, 161–56, 161–72, 161–60, 187, Tr. 127, 170) expressed disagreement with the USWA's view that Section 8(c)(3) of the Act mandated such observation in the case of safety standards such as the permit space standard. Section 8(c)(3) of the Act directs OSHA to issue regulations requiring employers to maintain records of employee exposure to potentially toxic materials or harmful physical agents and providing employees or their representatives with ''an opportunity to observe such monitoring or measuring, and to have access to the records thereof.'' This section of the Act provides the basis for the observation of monitoring provisions in virtually all of OSHA's health standards (see, for example, the asbestos, benzene, cadmium, lead, methylenedianiline, methylene chloride, and butadiene standards). Typical of these comments was one submitted by the Dow Chemical Company (Ex. 161–20):

> Section 8(c)(3) requires OSHA to promulgate regulations which provide employees, and their designated representatives, with the opportunity to observe the monitoring and measuring of, and have access to, employee exposure records (emphasis in the original). The atmospheric tests and space evaluations required under the Confined Space Standard are not the type of employee exposure monitoring that is envisioned by the Act.

In fact, OSHA stated in the NPRM its position that section 8(c)(3) does not require inclusion of a requirement for employee observation of monitoring in safety standards (59 FR 60737). Instead, the proposal explained that any decision to add an employee observation provision to the standard would be based on the record developed in this proceeding, including the concerns expressed about the original standard. OSHA does note, however, that the fact that Congress included a requirement that observation of monitoring be allowed for toxic substance standards indicates a Congressional preference for well-informed and involved employees. And as explained elsewhere in this section, OSHA has determined that the record in this rulemaking shows that employee observation can have substantial benefits for employee safety and health.

OSHA believes that this safety benefit adequately justifies any minimal slowing of operations caused by the employee observation requirement. In any event, as shown by other evidence in the record, the employees assigned to enter the permit space are often already in the area, waiting to enter it, while the space is being tested and monitored (Ex. 161–25). Indeed, in a great many cases, it is the permit space entrants themselves who perform the testing and monitoring (Ex. 161–09, Tr. 186–187, 190). Moreover, as with all of the employee participation provisions being added in this revision, the record shows that this practice is already fairly common and indicates that it has not caused any production problems (Exs. 161–57, 172, Tr. 202).

A few commenters suggested that employee observation could actually decrease employee safety, for example when monitoring must take place in a hazardous environment, such as an elevated location or one containing a toxic atmosphere (Exs. 161–56, 161–74, 167, 181). But the standard does not require employees to observe all monitoring or testing, it merely offers them the opportunity to do so. The employees and their representatives are less likely to take advantage of that opportunity in particularly hazardous situations. Moreover, even having an entrant or representative close by observing the actions of the person testing the atmosphere, and checking the instruments after the tests are complete could provide safety benefits. Employees already have extensive rights to observe monitoring under OSHA's health standards. OSHA has seen no evidence, and none was presented in this rulemaking, that this observation creates safety hazards (Tr. 92–93).

OSHA does not believe that the final rule's requirements that employers provide affected employees with an opportunity for employee observation, or those requiring employee participation in paragraph (l), are particularly subject to abuse or constitute an unwarranted infringement on labor-management relations. OSHA standards frequently require that work be performed in a particular way or by specific employees. For example, the Lockout/Tagout (LO/TO) standard, 29 CFR 1910.147(c)(8), requires that locks and tags be affixed by the workers who will be performing the service or maintenance covered by the standard and, as discussed above, numerous toxic substance standards provide affected employees and their representatives with the right to observe hazardous substance monitoring. The requirement that employees who are to enter hazardous confined spaces be allowed to observe the required monitoring of those spaces is analogous to these provisions. Like the LO/TO requirement, it recognizes that the employees whose lives could be endangered by inadequate completion of these preliminary safeguards have the strongest incentive to see that they are performed properly (see Tr. 333).

OSHA also is not persuaded that the monitoring observation requirement is especially subject to employee abuse. Some commenters suggested that during periods of labor management discord, employees could abuse the observation right to slow down or disrupt production (see, e.g., Exs. 161–12, 161–25). Others expressed concern that the provision could cause what one called a ''logistical nightmare'' if all of the employees and representatives insisted on observing each instance of testing and monitoring (see, e.g., Exs. 161–12, 161–26, 161–35, 161–78). But again, there was no evidence that this type of disruption is caused by the employee observation provisions in OSHA's health standards. The standard allows the opportunity for observation by an entrant or his authorized representative, not by every employee and representative at the workplace. Moreover, some employers, either contractually or otherwise, already provide employees with the right to observe monitoring and testing of confined space atmospheres (Exs. 161–57, 173–B, Tr. 184–185, 202). One witness pointed out that, even in those plants, confined space entrants did not always choose to observe the monitoring (Tr. 202). And of course nothing in this standard interferes with an employer's existing power to direct and control its

workforce, so long as it does not attempt to do so in a manner inconsistent with the standard.

Nor does the provision interfere improperly in labor-management relations, as suggested by some commenters (e.g., Ex. 161–35). In a general sense, many safety and health issues could, in the absence of OSHA requirements, be dealt with through traditional labor management mechanisms. That does not mean, however, that OSHA does not have the authority to require that work be performed in the manner it determines can best reduce safety or health hazards. And OSHA's exercise of this authority may, in some cases, force employers to alter some aspects of their employee relations. For example, OSHA standards sometimes require employers to provide medical removal benefits to workers whose health may already have been affected by exposure to a toxic substance. These benefits may include job assignments in areas with less exposure to the toxic substance, continuation of pay, or training for new job assignments (29 CFR 1910.1025(k) (lead), 1910.143(f)(2)(iv) (cotton dust)). Although these issues would have been considered labor relations matters in the absence of the OSHA standards, it is clear that OSHA can impose such regulatory requirements to protect employee safety and health. *United Steelworkers of America* v. *Marshall*, 647 F.2d 1189, 1236 (D.C. Cir. 1980).

Paragraph (k)—Rescue and Emergency Services

OSHA is amending and reorganizing paragraph (k), the rescue and emergency services provision of the standard.

A. Evaluation and Selection of Rescue and Emergency Services

The revisions to paragraphs (k)(1) and (k)(2) clarify an employer's obligations to select a rescue service that is trained, equipped and available to respond to emergencies that occur during confined space entries. The emphasis of the revised language is on the employer's evaluation of potential rescue providers, and on the factors that the employer must consider in determining whether a particular provider is capable of providing effective rescue services for the particular situations that its confined space entrants may face. OSHA is also adding a new non-mandatory Appendix F to the standard to provide employers with additional assistance in evaluating potential rescue services.

In the 1993 Permit Required Confined Spaces standard, OSHA promulgated separate requirements for employers of rescue and emergency teams and employers who used teams they did not employ. The requirements were more specific for what the rule considered in-house teams employed by the employer (29 CFR 1910.146(k)(1), (k)(2)). The rule was criticized for its failure to contain equally explicit requirements for ''outside'' rescue teams, or to contain an explicit requirement that those teams be able to arrive at the worksite in a timely fashion (Ex. 162–1). In the NPRM, OSHA proposed to require employers to ensure that outside rescue teams be equipped, trained, capable of responding in a timely manner, and aware of the hazards they may encounter during rescue operations, and be provided with access to the employer's confined spaces for rescue plan development and rescue drill purposes (59 FR 60739).

OSHA received a wide array of comment on this proposal. Some commenters believed that the language of the 1993 rule, particularly as explained in the preamble to that rule, was adequate to assure effective and timely rescue (Exs. 161–48, 161–49, 161–56, 167, 184). Others argued that the proposed revisions did not go far enough, and that OSHA should either prohibit outside rescue teams altogether or, at a minimum, require that any rescuer be able to respond to an emergency within some specified time frame, generally four to six minutes (Exs. 161–38; 161–39; 161–40; 161–62; 170). A number of commenters criticized the distinction between in-house and outside rescue services, pointing out that some of the assumptions on which OSHA based this distinction were inaccurate (see, e.g., Ex. 161–20). Many of the comments emphasized the need for knowledgeable and well-trained rescuers, not only to provide more effective rescue to the endangered confined space entrants but also to assure that the rescuers do not unnecessarily endanger themselves (Exs. 161–7, 161–20, 170).

The commenters who believed that OSHA should not amend the existing rule generally made four points:

1. Properly interpreted, the 1993 rule already imposes a requirement for timely and effective rescue.

2. Making employers responsible for the performance of outside rescue teams is unrealistic for those employers who rely on outside teams because they lack the expertise to develop their own in-house teams.

3. Imposing a short time within which a rescue team must arrive at the location of the emergency amounts to an effective prohibition of outside rescue teams.

4. Requiring an employer to ''ensure'' the competence, timeliness, and effectiveness of outside rescuers is a requirement that employers guarantee successful rescue.

Typical of these comments is one by the Chemical Manufacturers Association:

> OSHA's proposed revisions to paragraph (k)(2) place an undue burden on host employers. The likely outcome is that host employers will not be able to use outside rescue services. Such an outcome is totally inappropriate. Under the proposed revision, if the host employer decides to use an outside rescue service, then it must also ensure that this outside rescue service is ''capable of functioning appropriately.'' If a host employer is using the outside rescue service, presumably the host employer does not have the expertise to maintain a team in-house. In such a situation, how can the host employer ensure that the service is capable of functioning appropriately?
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> Paragraph (k)(2), as originally promulgated, required the correct amount of accountability for host employers (Ex. 161–29).

Dow Chemical stated its belief that ''In essence, by requiring host employers to ''ensure'' that the outside rescuer can ''effectively respond in a timely manner'' and that the outside rescuer is equipped, trained and ''capable of functioning appropriately,'' OSHA is requiring that host employers guarantee their performance'' (Ex. 181).

Those commenters who supported more stringent requirements made two general points:

1. Without a clear requirement for rescuers to respond within a very short time after an emergency arises, entrants will often die while awaiting rescue.

2. Outside rescuers, particularly emergency responders, often do not have the information or equipment necessary for effective and timely rescue, and in some cases may not even know that employers are relying on them for confined space rescue.

These comments, and OSHA's responses to them, will be discussed in greater detail below.

A. Timely Response

OSHA has retained the language in the NPRM calling for timely rescue capability. Although virtually all rulemaking participants agreed on the need for ''timely'' rescue, a great deal of debate concerned whether OSHA should include a particular response time in the standard. Proponents of such a provision argued that in many confined space emergencies, an entrant is not receiving adequate breathing air and will suffer irreversible and frequently fatal effects within four to six

minutes (Exs. 161–38, 161–39, 161–64, 161–71). Moreover, some of them claimed that if rescuers are not on the scene quickly enough, co-workers of the victim who are not equipped to perform rescue operations are more likely to endanger themselves by attempting rescue operations on their own (Ex. 161–38). They noted that a majority of deaths in confined spaces occur among would-be rescuers (Exs. 161–38, 161–64).

Opponents of the inclusion of a specific time frame in the standard pointed out that, realistically, a four to six minute response time would require having fully equipped rescuers standing by during the entire length of every permit space entry (Ex. 161–56). While others noted that this would be appropriate on some occasions, but would not be on many others (Tr. 51–52, 93, 210, 254). These commenters agreed that inadequately prepared rescuers are likely endanger themselves more than they assist the victim, but expressed concern that even designated rescuers could endanger themselves if they are under too much pressure to respond too quickly (Ex. 161–56). For example, Michael Roop of ROCO Corp. testified that, in training rescuers ROCO instructs them ''that if you arrive at a scene and you're inside that confined space in two or three minutes to made a rescue, then you're doing something wrong. You're not being safe'' (Tr. 248).

In the same context, ROCO and other rescue provider commenters pointed out that ''response time'' is not the same as rescue time, and that there are a number of discrete stages to a successful rescue operation (Tr. 246–249; Ex. 161–52).

OSHA does not believe these concerns are irreconcilable. OSHA's recently revised Respiratory Protection standard, 29 CFR 1910.134 (1998), promulgated at 63 FR 1152–1300 (Jan. 8, 1998), as well as the predecessor to that standard, 29 CFR 1910.134 (1997), require standby rescue personnel when employees are working in atmospheres that are immediately dangerous to life or health (IDLH). It is clear that the atmosphere in a permit space where an entrant could suffer irreversible impairment within four to six minutes would meet the definition of an IDLH atmosphere: ''an atmosphere that poses an immediate threat to life, would cause irreversible adverse health effects, or would impair an individual's ability to escape from a dangerous atmosphere'' (29 CFR 1910.134(b)); see also the preamble discussion at 63 FR 1184–1185.

According to the Respiratory Protection standard, when employees enter such a space, the employer must ensure that:

(i) One employee, or when needed, more than one employee is located outside the IDLH atmosphere;

(ii) Visual, voice, or signal line communication is maintained between the employee(s) in the IDLH atmosphere and the employee(s) located outside the IDLH atmosphere;

(iii) The employee(s) located outside the IDLH atmosphere are trained and equipped to provide effective emergency rescue;

(iv) The employer or designee is notified before the employee(s) located outside the IDLH atmosphere enter the IDLH atmosphere to provide emergency rescue;

(v) The employer or designee authorized to do so by the employer, once notified, provides the appropriate assistance necessary to the situation;

(vi) Employee(s) located outside the IDLH atmospheres are equipped with:

(A) Pressure demand or other positive pressure SCBAs, or a pressure demand or other positive pressure supplied-air respirator with auxiliary SCBA; and either

(B) Appropriate retrieval equipment for removing the employee(s) who enter(s) these hazardous atmospheres where retrieval equipment would contribute to the rescue of the employee(s) and would not increase the overall risk resulting from entry; or

(C) Equivalent means for rescue where retrieval equipment is not required under paragraph (g)(3)(vi)(B) (29 CFR 1910.134(g)(3)); see also preamble discussion at 63 FR 1242–1245.

OSHA believes that compliance with these requirements will meet the concerns of those commenters who urged OSHA to require a rescue response time of only a few minutes. Because the standby personnel required by the Respiratory Protection standard will have been monitoring the confined space entrant's condition throughout the operation and will be fully equipped to begin rescue operations, they will be able to respond more quickly than rescue team members arriving from another location, whether inside or outside the plant, who would need to gather appropriate equipment, prepare to use that equipment, and be briefed on the emergency situation before beginning rescue operations. And because the standby personnel must be appropriately trained and equipped to perform rescue operations, other inadequately prepared employees will be less likely to endanger themselves by attempting hasty and dangerous rescues. (Note that at least one employee, serving as attendant, must still remain outside the permit space, as required by Section 1910.146(i)(4).) On the other hand, because the Respiratory Protection standard requirement only applies to IDLH atmospheres, a less resource-intensive and more measured response capability may be used for those situations where there is not the same need for virtually instant response.

OSHA has therefore decided to promulgate the requirement it proposed for ''timely'' rescue, a requirement that was not opposed by any rulemaking participant, rather than to define precisely what is timely. That determination will be based on the particular circumstances and hazards of each confined space, circumstances and hazards which the employer must take into account in developing a rescue plan. OSHA has added a note to paragraph (k)(1)(i) to clarify this point.

B. Evaluation, Selection, and Use of Rescue Services

OSHA has generally reorganized paragraph (k) to de-emphasize the distinction between in-house and outside rescuers and to focus instead on the employer's obligation to evaluate rescue services so that it can select one that is competent to provide the rescue services appropriate for that employer's operations. Several commenters explained that OSHA's assumption that in virtually all cases the ''host'' employer would be the employer of both the confined space entrants and any *in-situ* rescue team but would not be the employer of an off-premises team was erroneous (Ex. 181). These commenters described a number of situations where this assumption would be inaccurate. For example, in some cases, confined space entrants may be contractor employees, although the rescue team may be composed of on-site employees of either the host employer or another contractor (Ex. 179). In other cases, the host employer may arrange for the standby presence of an ''outside,'' non-employee rescue team during particularly hazardous permit space entries. In still other situations, an employer may use a rescue team comprised of employees of a different facility that it operates.

As a result OSHA has revised paragraph (k)(1) to emphasize the evaluation that an employer must perform of available rescue and emergency resources before designating a rescue provider for purposes of this standard. This also responds to the concerns of a number of commenters that the language OSHA used in the NPRM, requiring the employer to ''ensure'' that the rescue service it selected was able to function adequately, appeared too result oriented. These commenters believed that compliance could only be determined by a *post hoc* consideration of the success or failure of an actual rescue effort. They said the focus should

instead be on the employer's assessment of the rescuer's capabilities (Ex. 161–20). OSHA agrees that assessment of capabilities is the appropriate focus for employer efforts, and intended this result in both the 1993 standard and the NPRM. The language of this final rule, by explicitly framing the employer's obligations in terms of the evaluations it performs, will clarify this intent.

Paragraph (k)(1)(i) explains that the rescue service evaluation must take into account the rescuer's ability to respond in a timely manner to the types of emergencies that may arise in the employer's confined spaces. As noted above, the note to paragraph (k)(1)(i) explains that what will be considered timely rescue will vary according to the specific hazards involved in each confined space entry.

Paragraph (k)(1)(ii) requires that the evaluation also include an assessment of the skill and competence of the prospective rescuers. Several commenters pointed out that in some cases employers have designated local fire and rescue services as their rescuers without first confirming that those services even have a confined space rescue capability (Ex. 161–41). Although many emergency responders may be able to provide proper permit space rescue functions for all spaces that do not require immediate, stand-by rescue capability, not all responders have this ability (Ex. 161–41). Each employer relying on these services should verify that the emergency responder is indeed trained, equipped, able, and willing to perform rescue for confined spaces in its facility.

In evaluating a prospective rescue provider's abilities under this subparagraph, the employer must also consider the willingness of the service to become familiar with the particular hazards and circumstances faced during its permit space entries. Subparagraphs (k)(1)(iv) and (k)(1)(v) require the employer to provide its designated rescuers with information about its confined spaces and access to those spaces, both to allow the development of appropriate rescue plans and to perform rescue drills. A rescue service's receptiveness to this information is directly relevant to its ability to function appropriately during actual rescue operations.

A few commenters provided information on particular products, including communication equipment (Ex. 161–52) and *in-situ* resuscitation devices (Tr. 459–468) for use in permit space rescue operations. OSHA does not, of course, endorse specific products. However, the Agency notes that the equipment used by a rescue service, and that equipment's utility in enhancing rescue efforts, is a relevant factor for employers to consider during the rescuer evaluations required by this paragraph.

Paragraph (k)(1)(iii) requires the employer, after performing the evaluations required by paragraphs (k)(1)(i) and (k)(1)(ii), to select a rescue provider that has the ability to respond in a timely manner to the particular hazards at issue, and to provide proficient rescue services. In other words, it is not enough for an employer simply to perform the evaluations required. The employer must also utilize the results of those evaluations to select a rescue service that will meet the goals of this standard.

Paragraph (k)(1)(iv) requires the employer to notify the rescue service it selects of the hazards that may exist at the permit spaces in its facility. This requirement was included in the NPRM and was also present in the 1993 standard. In the context of this revised standard, this notification provision obviously includes notifying the rescue service that it has been selected and that the employer will be relying on it. In some cases compliance with this section, as well as with paragraphs (k)(1)(i) and (k)(1)(ii), may require the employer to notify the rescue service immediately prior to each permit space entry.

Paragraph (k)(1)(v) requires employers to provide the rescue service selected with access to all confined spaces from which rescue may be necessary so that the rescue service can develop appropriate rescue plans and practice rescue operations. This provision, which is essentially unchanged from both the NPRM and the 1993 standard, was the subject of a significant amount of comment from employer representatives who urged OSHA to require only that they provide access to ''representative'' or ''typical'' spaces (Exs. 161–29, 161–20, 161–25, 161–26, 161–2–9, 161–60, 184). These commenters pointed out that a number of an employer's confined spaces were likely to share identical configurations, and that it would therefore not be necessary for the rescue service to have access to each of them (Exs.161–25, 181, 184). Some also expressed concern that providing access to some permit spaces, which are only entered at rare intervals for cleaning or other servicing, could be costly and disruptive of the employer's ongoing operations.

OSHA recognizes the validity of these concerns but believes that the employer's needs can be accommodated within the context of the existing requirement. Accordingly, OSHA has not made the suggested change. Although OSHA agrees that a rescue service is unlikely to need access to every one of a group of similar spaces, OSHA believes that it should be the rescue service that decides which space, or spaces, will be used for planning and practice purposes. This is particularly true for off-site rescue services, who are less likely to be familiar with the layout of the host employer's workplace. The Agency also took this position in the January 14, 1993 final rule (58 FR 4529–4530), and at the September 27, 1995, public hearing (Tr. 22). Similarly, although providing access to some permit spaces may be disruptive of normal production operations, OSHA believes that employers should be able to work out with their designated rescue services mutually convenient times to provide access to those spaces, if the rescue service believes that access to those particular spaces is necessary for planning or practice drill purposes. Indeed, none of the commenters argued that such accommodations could not be made.

As proposed, OSHA has redesignated paragraph (k)(1) of the 1993 standard, dealing with the requirements for rescue service employers, as (k)(2) of this revision, but has not made substantive changes in this requirement. Most of the comment OSHA received on this provision dealt with the fact that employers have different obligations toward rescue teams comprised of their own employees than toward teams they do not employ directly. However, as a number of commenters recognized, to the extent that the ''non-employee'' rescue services are comprised of employees of another employer subject to the OSH Act, they also will receive the benefits of these provisions (Ex. 161–20). And to the extent that a service's failure to comply with these provisions affects its rescue skills and competence, employers should take this into account in deciding whether to select that service to provide its rescue operations.

OSHA has made some editorial changes in this paragraph. For example, revised paragraph (k)(2)(i) states that rescue PPE and related training are to be provided at no cost to affected employees. This language has been added so it is clear that this provision is consistent with existing § 1910.146(d)(4).

C. Retrieval Systems

OSHA proposed to revise paragraph (k)(3)(i) to allow attachment of retrieval lines at any point ''which the employer can establish will ensure that the entrant will present the smallest

possible profile during removal'' rather than only at the entrant's back near shoulder level or above the entrant's head. The final rule changes this language somewhat, but retains the performance orientation of the proposal. OSHA explained in the NPRM that, subsequent to the 1993 promulgation, the Agency received information which indicated that other equally effective and safe points of attachment exist. Accordingly, OSHA proposed to add the new language to paragraph (k)(3)(i). The proposed paragraph, however, inadvertently omitted language providing for the use of wristlets in certain circumstances.

Commenters (Exs. 161–1, 161–9, 161–13, 161–14, 161–15, 161–20, 161–26, 161–29, 161–34, 161–37, 161–43, 161–45) uniformly supported the increase in flexibility allowed by the proposed revision. Some, however, suggested changes to OSHA's proposed language. The National Grain and Feed Association (Ex. 161–14) suggested that the standard allow attachment ''in the manner determined by the employer most effective to ensuring that the entrant'' will present the smallest possible profile during removal. OSHA has not adopted this suggestion because it believes the two points of attachment listed (the center of the entrant's back near shoulder level and above the entrant's head) should be emphasized because those points are preferred for most situations.

Another commenter (Ex. 161–45) suggested replacing the proposed ''smallest possible profile'' with ''best possible profile.'' OSHA agrees that it may not always be desirable for the entrant to present the smallest possible profile during rescue. For instance, in situations where the size of the space or portal is not limiting, a point of attachment which results in the smallest possible profile may be less desirable than some other point of attachment which better facilitates the work to be done. Accordingly, OSHA has decided to replace the proposed language with the phrase ''profile small enough for the successful removal of the entrant.'' OSHA also has not adopted a suggestion of the Tennessee Valley Authority (Ex. 161–34) that OSHA change the term ''profile'' to ''cross sectional profile'' because OSHA believes that the term ''profile'' is clear in this context. Finally, two commenters called to OSHA's attention the inadvertent omission in the NPRM of the option to use wristlets where the use of a body harness is infeasible or would create a greater hazard (Exs. 161–20, 161–26). The revised rule retains the language on wristlets.

OSHA did not propose, and has not made, any change to subparagraphs (k)(3)(ii) or (k)(4). Subparagraph (k)(3)(ii) requires a mechanical device to be available to retrieve entrants from a vertical confined space more than five feet deep. OSHA notes that it has always intended that the word ''available'' in this provision mean ''at the access point of the vertical entry and ready for use.''

Paragraph (l)—Employee Participation

A new paragraph (l) has been added to the standard, dealing with employee participation in confined space programs. Paragraph (l)(1) requires employers to consult with affected employees and their representatives in the development and implementation of their confined space programs; paragraph (l)(2) requires that those employees and representatives have access to all information developed under this standard.

OSHA's original Permit Required Confined Spaces standard hearing notice (54 FR 41462) requested comments on the subject of worker participation in the design and implementation of a PRCS program. OSHA received several comments on the subject (Exs. 14–318, 14–210, 14–215, 14–220, 14–222) and some testimony at the public hearings also addressed it (Tr. 225–226, 251, 386, 589–590; Tr. 1063–1064; Tr. 317–318, 348–352, 356, 376, 379–380, 411, 427–428, 532–533, 612–613, 622–623). The Agency addressed these comments in the preamble to the January 1993 standard (58 FR 4484–4485).

The standard encouraged the involvement by employees and clearly recognized it as vital to the creation of an effective permit space program. However, it did not require employee involvement in the development of the permit program, although it did provide for such involvement in permit space program inspection and review (paragraphs (c)(4) and (d)(13)), and in review of employee training upon evidence of deficiencies ((g)(2)(iv)). OSHA explained its decision not to require employee involvement in the development of confined space programs by referring to the difficulties of mandating labor-management collaboration in the development of the permit space program and of resolving conflicts between workers and employers (FR 4484–4485). As is discussed more fully below, OSHA believes this revision avoids both of these problems.

Although the NPRM on which this revision is based did not explicitly mention employee involvement in the development of confined space programs, some commenters submitted statements urging OSHA to include a provision explicitly allowing such participation (see, e.g., Ex. 161–38; 161–40). Further discussion of this issue occurred at the public hearing.

Commenters supporting the addition of an employee participation provision to the standard pointed out that employee participation in plan design is already done at many workplaces pursuant to collective bargaining agreements, and that such participation would be consistent with that occurring under other OSHA standards, particularly the Process Safety Management standard (29 CFR 1910.119) (Ex. 161–140). It was also pointed out that employees who actually work in confined spaces and their representatives are particularly well qualified to contribute to the task analysis that is a necessary step in developing a confined space program (Exs. 161–38; 161–140).

In contrast, even the American Petroleum Institute (API), the commenter who most explicitly opposed inclusion of such a requirement, acknowledged that involvement by employees in the program development process could be useful. API said that OSHA should continue to ''encourage'' such involvement but should not require it because such a requirement could expose the standard to ''additional controversy or litigation'' (Ex. 167). The American Gas Association made a similar statement (Ex. 161–770). Other more general comments on employee participation repeated the point made in the original rulemaking that such participation raises labor relations issues that should not be addressed by an OSHA standard (see, e.g., Exs. 184, 187).

OSHA has determined that the consultation requirement in new paragraph (l) will provide the benefits discussed by the participants who favored an employee involvement requirement. By leaving the final contents of the confined space program up to the employer, however, this provision should minimize controversy and avoid the need to develop a cumbersome procedure to resolve conflicts. OSHA expects that there will be few conflicts in any event, because it believes that the vast majority of employers and employees will cooperate to make confined space entry procedures as safe and efficient as possible. This requirement should only have a minimal effect on labor-management relations although, as noted in the discussion of paragraph (c) above, the importance of employee

safety and health would justify such an effect even if it were substantial.

As the UAW pointed out, the employees who perform the actual entry can contribute immeasurably to the analysis of the tasks performed during a permit space entry to ensure that the hazards within the space remain under control and that additional hazards are not introduced (Ex. 161–40). These employees are the people most familiar with the actual practices during confined space entries. If those practices differ significantly from the practices intended by the employer, the employer needs to be made aware of the differences and to take appropriate steps to remedy any deficiencies in the permit entry procedures. Likewise, employees may be aware of hazards within the space that are not being taken into consideration by non-entrants.

In addition, OSHA's own experience in enforcing the Congressionally mandated employee participation requirement under the Process Safety Management standard has convinced the Agency of both the value and the workability of the new provisions being added in paragraph (l). OSHA believes that, as well as improving the quality of the permit space programs developed under the standard, this new provision will also enhance compliance with those programs. Clearly, employees who have participated in the development of programs will have a better understanding of the reasons for the various provisions of the program and will therefore be more likely to comply with those provisions. Similarly, any manager who might be tempted to bypass any of the program safeguards will be less able to convince an employee that such an action would not affect safety and health.

Finally, paragraph (l) is consistent with both the Congressional intent and OSHA's long practice of promoting employer-employee cooperation in safety and health matters. The Congressional intent is shown in part by Section 2(13) of the OSH Act, 29 U.S.C. 652(13), which states that one of the purposes of the Act is to ''encourage joint labor-management efforts to reduce injuries and disease arising out of employment.'' More recently, Congress' intent can be seen in its directive to OSHA to promulgate a PSM standard that explicitly provides for employee involvement in the development of the process safety management programs mandated by that standard.

An example of OSHA's longstanding practice of encouraging and promoting employee involvement is the Agency's 1989 *Safety and Health Program Management Guidelines* (54 FR 3904), which recognize the importance of involving employees in safety and health programs at the workplace. Paragraph (c)(1)(iv) of those guidelines urges employers to provide for and encourage employee involvement in ''the structure and operation of the [safety and health] program and in decisions that affect their safety and health, so that they will commit their insight and energy to achieving the safety and health program's goal and objectives.'' Although the guidelines are voluntary, this provision demonstrates OSHA's belief that employee involvement is necessary to the day-to-day safety and health of workers. Additionally, the guidelines are being applied in many workplaces through several OSHA programs, such as the Voluntary Protection Program, the Safety and Health Achievement and Recognition Program, and in several State and Regional experimental programs. OSHA's 1998 Strategic Plan also emphasizes the importance of employee involvement in safety and health and establishes as an Agency objective the enhancement of such involvement in all OSHA initiatives, as appropriate.

New paragraph (l)(2) requires employers to share with employees and their authorized representatives all of the information generated under this standard. Comments objecting to this provision were generally limited to pointing out that it would be redundant with other provisions in the standard that already require the great majority, if not all, of this information to be made available to employees and representatives. OSHA recognizes this redundancy; it is adding this provision for purposes of emphasis and clarification.

For all of the reasons described above, OSHA has determined that the consultation requirement in paragraph (l)(1) is supported by the record of this rulemaking; it will contribute to confined space safety; and it is consistent with longstanding agency policy. The information provision requirement in paragraph (l)(2) is also consistent with agency policy, and will emphasize that employees and their representatives have a right to all information affecting their health and safety.

Section 1910.146 Appendix F—Example of Rescue Service Evaluation Criteria

As discussed above, OSHA has added a new, non-mandatory Appendix F. This appendix provides guidance to employers in choosing appropriate rescue services. The Agency received several comments (Exs. 161–4, 161–7, 161–44, 161–55) which addressed the need for criteria to assist employers in evaluating potential rescuers. As expressed by one commenter (Ex. 161–44): ''If an employer does not have rescue knowledge and experience, how can he possibly evaluate a prospective rescue service? What evaluation and verification process is reasonable and acceptable to OSHA?''

The Agency recognizes that some employers will need information on how to evaluate prospective rescue services. However, presenting criteria that match every situation would be difficult. For this reason, OSHA has determined that the suggested criteria for rescue service evaluations should be presented in a non-mandatory appendix. Additionally, this appendix provides criteria for ongoing performance critiques for rescue services so that employers will have a means to judge whether a rescue service has maintained its ability to perform safe and effective permit space rescues. Although the Appendix is divided into a section addressing initial assessments and one addressing performance critiques for rescue services already operating at an employer's facility, the considerations in the two sections should not be seen as mutually exclusive. To the extent the employer can obtain enough information to make a determination, the same factors would be applicable to both determinations.

III. Final Economic Analysis

Introduction

In accordance with Executive Order 12866 and the Regulatory Flexibility Act (as amended), OSHA has prepared this Final Economic Analysis to accompany the final rule amending the Agency's Permit-Required Confined Spaces (PRCS) standard (29 CFR 1910.146). The final rule is being amended to require employers to provide authorized entrants (i.e., those employees who are authorized to enter PRCSs) or their designated representatives with the opportunity to observe the monitoring or testing of permit spaces and to request the reevaluation of any permit space that they believe may have been inadequately tested. The final rule also clarifies the criteria employers must satisfy when preparing for the timely rescue of incapacitated permit space entrants. Employee participation in the permit space program is enhanced in the final rule, which provides authorized employees and their designated representatives with access to program information developed under the standard and requires employers to consult with such

employees about the implementation of the permit space program.

When the Permit-Required Confined Spaces standard was promulgated in 1993, the Regulatory Impact Assessment (RIA) that accompanied the rule was placed into the rulemaking docket [Docket S–019, Ex. 149]. The RIA evaluated the costs, benefits, impacts, and technological and economic feasibility of the 1993 final rule. The Final Economic Analysis presented here estimates the costs of those requirements of the amended rule that will impose new regulatory burdens on affected employers, analyzes the benefits that will accrue to employers, employees, and others as a result of these new provisions, examines the technological and economic feasibility of the amended provisions, and assesses the impacts of the costs of compliance on affected employers and on small businesses in particular. The Final Economic Analysis does not re-analyze the estimates presented in the RIA for the 1993 rule or assess the costs and benefits of provisions in the amended final rule that merely interpret or explain the intent of provisions in the 1993 rule because the costs and benefits of such provisions were fully taken into account in the earlier RIA.

This Final Economic Analysis assesses the costs, benefits, technological and economic feasibility, and impacts of two provisions of the amended final rule. These provisions include revised paragraph (d), which now requires employers to permit authorized employees or their designated representatives to observe the testing or monitoring of permit spaces, and paragraph (l), which requires employee participation in the development and implementation of the permit space program and requires employers to provide employees and their designated representatives with access to information developed under the standard. The Agency has determined that the revised provisions will enhance the safety and health protections provided to confined space entrants by the standard and will also benefit employers by saving some of the direct costs associated with deaths and serious injuries that now occur but will in future be prevented.

The following sections of this analysis briefly summarize the industry profile and the findings of the Agency's technological feasibility analysis for the amended rule.

Industry Profile

Tanks, vats and pits are examples of common confined spaces. Although confined spaces of these types are concentrated in the manufacturing and utilities sectors, they are also found in some trade and service sectors. The 1993 RIA estimated that 1.6 million workers in nearly 240,000 establishments enter confined spaces annually. A profile of these spaces is presented in Table I. A more detailed description of confined spaces in industry is available in the earlier RIA [Docket S–019, Ex. 149].

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TABLE I

PROFILE OF ESTABLISHMENTS AND EMPLOYEES AFFECTED BY THE CONFINED SPACES STANDARD

SIC	Industry	Number of Establishments with Permit Spaces	Number of Permit Spaces	Number of Employees	Number of Permit Space Entrants (a)
07	Agricultural Services	10,864	79,821	62,990	25,748
13	Oil & Gas Extraction	10,000	12,477	155,660	11,239
20	Food and Kindred Products	10,236	142,727	805,247	99,420
21	Tobacco Products	69	776	37,845	2,007
22	Textile Mill Products	1,491	17,062	186,752	27,831
24	Wood Products(except furniture)	10,290	39,409	146,042	31,035
25	Furniture and Fixtures	5,254	26,012	224,589	35,424
26	Paper Products	4,397	95,533	475,171	46,208
27	Printing and Publishing	47	206	2,196	94
28	Chemicals & Allied Products	8,098	170,982	593,738	71,962
29	Petroleum Refining	1,644	93,700	104,704	15,560
30	Rubber Products	6,282	143,818	319,262	143,522
31	Leather and Leather Products	151	514	6,395	1,055
32	Stone, Clay,Glass & Concrete	12,290	116,708	366,454	110,568
33	Primary Metals Industry	2,788	35,521	463,942	56,669
34	Fabricated Metal Products	8,441	88,507	346,800	33,959
35	Machinery, Except Electrical	4,330	34,670	437,200	116,987
36	Electric/Electronic Equipment	6,610	176,895	892,336	111,087
37	Transportation Equipment	3,302	1,085,966	1,043,403	31,706
38	Instruments & Related Products	64	901	7,296	514
39	Miscellaneous Manufacturing	885	31,267	18,926	5,744
42	Motor Freight Transportation	14,583	201,680	201,679	40,336
49	Electric, Gas, Sanitary Services	28,444	1,575,170	410,290	263,217
50	Wholesale Trade/Durables	2,753	3,965	36,485	3,359
51	Wholesale Trade/Nondurables	36,913	411,095	358,647	194,454
54	Food Stores	10,073	10,073	318,010	10,073
59	Miscellaneous Retail	7,149	28,201	57,923	10,694
65	Real Estate (Commercial)	13,582	45,190	391,923	12,442
70	Hotels and Other Lodging	5,099	77,672	163,323	80,224
72	Personal Services	3,577	24,604	198,447	7,154
76	Miscellaneous Repair Services	752	802	3,718	752
78	Motion Pictures	11	33	16,500	66
80	Health Services	8,252	71,709	3,357,391	27,308
84	Museums, Botanical Gardens, Zoos	130	1,183	7,338	781
	TOTAL	238,853	4,844,849	12,218,622	1,629,201

Source: U.S. Department of Labor, OSHA, Office of Regulatory Analysis.

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Technological Feasibility

Paragraphs (d) and (l) of the amended final rule will impose new costs on some affected employers because they will be required to spend additional time consulting with employees, to allow employees or their representatives to spend time observing the testing or monitoring of permit spaces, and so forth. However, the amended rule will not require employers to employ additional or new technologies to achieve compliance. As explained in the RIA [Docket S–019, Ex. 149], compliance with all aspects of the standard can be achieved and is being achieved with readily available off-the-shelf equipment.

Costs of Compliance

Observation of Testing

The Agency is modifying paragraph (d)(5), by adding paragraphs (iv), (v), and (vi), which require employers to offer authorized entrants or their designated representatives the opportunity to observe the pre-entry testing or monitoring and any subsequent testing or monitoring of permit spaces (paragraph (d)(5)(iv)); to reevaluate any space that the entrant or representative believes was inadequately tested (paragraph (d)(5)(v)); and to provide entrants and their representatives with the results of such testing immediately (paragraph (d)(5)(vi)).

OSHA concludes, based on evidence in the record, that paragraphs (d)(5)(v) and (d)(5)(vi) will not impose new costs on affected employers because they simply restate or explain requirements that were implicit in paragraph (e)(3) of the existing permit space rule. Paragraph (e)(3) requires the posting of entry permits, which contain the results of initial or periodic testing or monitoring (including the results of any remonitoring or testing), to enable authorized entrants to verify that preentry preparations have been completed. As stated in the preamble to the original rule [58 FR 4505], this provision ensures that ''Entrants will then be able to make their own judgments as to the completeness of pre-entry preparations and to point out any deficiencies that they believe exist.'' Commenters affirmed that permits are posted and used in this way and thus that this provision reflects current industry practice [Ex. 161–45; Ex. 161–72]. Paragraph (d)(5)(vi) of the amended rule, which requires employers to provide entrants and their representatives with the results of such testing or monitoring, is also implicit in paragraph (e)(3), which requires that ''The completed permit shall be made available at the time of entry to all authorized entrants, by posting it at the entry portal or by any other equally effective means, so that the entrants can confirm that pre-entry preparations have been completed.'' As stated above, it is current industry practice to provide immediate access to the information on entry permits.

Paragraph (d)(5)(iv) may impose new costs on some employers, although there is evidence in the record that many employers already allow permit space entrants to observe the testing or monitoring of spaces. For example, different firms indicated that they routinely provide employees with assurances of safety, showing them the various pre-entry safety procedures, if necessary [Tr., p. 57] or allowing employees to do the monitoring themselves [Tr., p. 186]. Mike Roop of the Roco Corporation indicated that, in the companies with which he had worked, employee requests to observe testing were not denied [Tr., p. 267]. Other firms actually encourage employees to observe monitoring [Tr., p. 202]. Duane Barnes, speaking for Dow, indicated that his company's safety record was so good that, although it was company policy to provide employees with any reassurance that was required in the area of safety, Dow had simply not had such requests [Tr., p. 57].

OSHA notes that its economic analyses for health standards, which routinely allow employees and their representatives to observe any employee exposure monitoring required by such standards, do not estimate any costs for the observation of monitoring provision (see, for example, the RIAs for ethylene oxide [Ex. 163, Docket H–200], cadmium [Ex. L173, Docket H–057A]). The Agency also has not received comments suggesting that employers actually incur costs by permitting employees to observe monitoring for health standards. In the present rulemaking, an industry representative stated that allowing employees to observe the monitoring required by OSHA health standards did not present a problem [Tr. p. 93]. Based on this history and evidence, OSHA assumes that such costs are essentially negligible.

OSHA also believes, based on the record, that many employers will meet the requirement for employee observation of monitoring by allowing employees requesting such information to perform the monitoring themselves. The task of testing has been greatly simplified by the introduction and improvement of electronic ''instant'' monitoring devices; for many spaces, employers currently place the monitoring devices directly on the employees [Tr. pp. 186, 188]. To the extent entrants test the atmosphere themselves before entering spaces, there would be no cost to this requirement.

Nonetheless, although the Agency believes that the costs of compliance with paragraph (d)(5)(iv) will be negligible, it has assessed the costs this provision might impose under worst case conditions, i.e., assuming that no employer currently permits any employee to observe such monitoring or testing of permit spaces *and* that every authorized entrant or designated representative will do so in the future. At the time of the original rulemaking, OSHA estimated that a total of 1.2 million hours would need to be spent on pre-entry testing (this estimate includes those facilities that were considered already to be in compliance with the monitoring provisions of the original confined spaces standard).[1] After adjusting the compensation rates in the original RIA to 1994,[2] the annual costs of compliance with paragraph (d)(5)(iv) under this extreme scenario would amount to $22.6 million.

OSHA believes, based on the record and the Agency's experience in health standards rulemakings, that costs for this provision will be incurred in no more than 10 percent of permit space entries, i.e., that the actual costs of this provision will be one-tenth of those outlined in the ''worst case'' scenario, or $2.3 million. Estimated costs for this provision, by industry, are shown in Table II.

Employee Consultation

As indicated previously, the Agency is adding a new paragraph (l) to the amended final rule. This provision requires employers to consult with affected employees and their authorized representatives. The existing rule, at paragraph (c)(4), already requires that the written plan be available for review by employees and their authorized representative(s). However, the Agency believes that the requirements in new paragraph (l) will lead to a modest increase in the amount of time employees and employers spend in

[1] Based upon an assumption of an average of five minutes of labor time required for pre-entry testing. This assumption was presented in the Preliminary Regulatory Impact Analysis (PRIA) for the original rule [Docket S–019, Ex. 15], was not questioned in the record, and was therefore carried over into the final RIA [Docket S–019, Ex. 149]. The final RIA was not subsequently challenged.

[2] Thus comparing 1994 costs to 1994 financial data (discussed further in the Economic Impact Section). The compensation rate was also updated to reflect recent BLS data, which indicates a 39 fringe benefit rate [BLS, 1995], as opposed to the 30 percent rate used in original analysis [Docket S–019, Exhibit 149].

developing and implementing their confined spaces programs.

Although the Agency lacks specific data on current industry practice with regard to employee consultation in the development and implementation of permit space programs, the Agency believes it reasonable to assume that the requirements in paragraph (l) will require an average of 10 minutes for authorized entrants and attendants to meet with a member of management or an entry supervisor to discuss ways to improve the program and its implementation. The Regulatory Impact Analysis in support of the original rule assumed that programs would need to be updated fully on an average of once every five years. Therefore, the annual cost of this provision is estimated to be:

(We+Wm) X (# of entrants + # attendants) X 10/60 hour X .24 where We is the hourly compensation of affected employees and Wm is the hourly compensation of management. Hourly compensation is based on 1994 industry hourly wage rates for production workers [BLS, 1994], plus the average nonagricultural benefit rate of 39 percent [BLS, 1995]. Consistent with the PRIA [Docket S–019, Ex. 15] and RIA [Docket S–019, Ex. 149], management compensation is assumed to be 20 percent greater than that of the entrants and attendants. The annualization factor for a five-year period at a 7 percent rate of interest is .24. Given these assumptions, the Agency estimates that this provision will cost $3.6 million to implement. Estimated costs for this provision, by industry, are shown in Table II. Combined with the amended final rule's provision requiring employers to provide employees with the opportunity to observe testing, the Agency estimates the total costs of compliance for the amended final rule to be $5.8 million annually.

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TABLE II

ANNUAL COST OF EMPLOYEE INVOLVEMENT IN CONFINED SPACES PROGRAM

SIC	Industry	Annual Cost of Observing Testing	Annual Cost of Employee Consultation in Program Development	Total Annual Cost of Employee Involvement
07	Agricultural Services	$29,935	$50,694	$80,629
13	Oil & Gas Extraction	$2,019	$36,881	$38,900
20	Food and Kindred Products	$33,805	$161,200	$195,004
21	Tobacco Products	$156	$5,656	$5,812
22	Textile Mill Products	$995	$35,992	$36,987
24	Wood Products(except furniture)	$1,239	$73,902	$75,141
25	Furniture and Fixtures	$4,925	$53,800	$58,725
26	Paper Products	$27,951	$96,427	$124,377
27	Printing and Publishing	$7	$283	$290
28	Chemicals & Allied Products	$114,791	$170,192	$284,982
29	Petroleum Refining	$33,994	$45,331	$79,326
30	Rubber Products	$22,115	$217,948	$240,063
31	Leather and Leather Products	$0	$1,342	$1,342
32	Stone, Clay,Glass & Concrete	$22,750	$172,816	$195,566
33	Primary Metals Industry	$56,410	$122,447	$178,858
34	Fabricated Metal Products	$677,225	$69,194	$746,419
35	Machinery, Except Electrical	$62,081	$210,048	$272,128
36	Electric/Electronic Equipment	$96,953	$183,031	$279,984
37	Transportation Equipment	$156,623	$78,293	$234,916
38	Instruments & Related Products	$416	$992	$1,408
39	Miscellaneous Manufacturing	$1,499	$8,967	$10,466
42	Motor Freight Transportation	$305,633	$105,767	$411,401
49	Electric, Gas, Sanitary Services	$482,369	$679,265	$1,161,634
50	Wholesale Trade/Durables	$568	$9,390	$9,958
51	Wholesale Trade/Nondurables	$63,111	$370,891	$434,002
54	Food Stores	$918	$19,709	$20,627
59	Miscellaneous Retail	$298	$25,256	$25,554
65	Real Estate (Commercial)	$22,821	$403,564	$426,384
70	Hotels and Other Lodging	$21,809	$86,312	$108,121
72	Personal Services	$0	$13,072	$13,072
76	Miscellaneous Repair Services	$3	$139	$141
78	Motion Pictures	$20	$205	$225
80	Health Services	$17,536	$65,692	$83,228
84	Museums, Botanical Gardens, Zoos	$1,721	$1,414	$3,135
	TOTAL	$2,262,697	$3,576,110	$5,838,807

Source: U.S. Department of Labor, OSHA, Office of Regulatory Analysis

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Benefits

The benefits of providing employees with an opportunity to observe the testing of spaces are predictably difficult to quantify, although the Agency believes that the benefits of doing so are real. Allowing employees to observe the testing and monitoring of permit spaces will provide for safer confined space entry: the record shows that, had employees in the past been able to observe the testing of spaces before entry or to obtain a reevaluation of questionable testing results, it is likely that a number of fatalities could have been averted. For example, the Steelworkers [Ex. 188, p. 4] report a number of cases where employers have apparently tested spaces improperly, leading to fatal results both for the workers entering the space and the rescuers attempting to rescue their incapacitated co-workers.

However, defining the number of fatalities or injuries preventable annually by this provision is difficult because permit space accidents, like most safety accidents, are multi-causal in nature. Most confined space accidents reflect a number of failures in the permit program, which makes it difficult to isolate the effectiveness of any given provision of the program (or rule). At the time of the original rule, OSHA specifically asked in the **Federal Register** [54 FR 24080] for comment on the effectiveness of the permit space rule; there was general agreement that the standard would prevent 80–90 percent of accidents. There was little attempt, however, to try to break out the benefits of particular provisions, due to the substantial overlap of causes in accidents and the deliberate redundancy built into some provisions of the standard.

In addition, it is difficult to estimate how often authorized entrants or their designated representatives will avail themselves of the opportunity to observe the testing or monitoring of permit spaces. To gain an understanding of the magnitude of the potential benefits associated with new paragraph (d)(5)(iv), OSHA turned to the RIA, which estimated that 85% of permit space accidents would be eliminated by the standard but that 15% of such accidents would continue to occur [58 CFR 4543]. These 15% of fatal cases, or 9 cases annually, were attributed to ''human error'' but were also believed to be theoretically preventable.

The amended rule's provision for the observation of testing will function to provide a ''check'' on human error in those cases where monitoring was improperly performed. When these fatal accidents occur, more than one element of the safety system has typically failed; however, in almost all such cases, one critical element—the accurate monitoring of the atmosphere—has failed. Thus it is reasonable to assume that allowing authorized entrants or their designated representatives to observe the testing of spaces will prevent a substantial portion of the accidents attributed in the RIA to human error. Because approximately two-thirds of these fatalities were related to atmospheric hazards (toxic, explosive, or oxygen deficient atmospheres),[3] OSHA assumes in this benefits analysis that the same proportion of cases, or a total of approximately 6 fatalities annually, could be prevented if proper monitoring was assured in all cases of permit space entry.

How effective this provision will be in practice will depend on the number of employees who actually avail themselves of the opportunity to observe the testing of spaces. In the absence of data to quantify this effect specifically, the Agency is adopting the conservative assumption of direct proportionality—i.e., the Agency is assuming that if only a small number of employees observe such monitoring, only a small number of the potentially preventable fatal incidents will be prevented. In this case, since the cost analysis assumes that only 10 percent of employees will actually observe monitoring, the Agency assumes that only 10 percent of the 6 fatalities (or 0.6 fatalities) will be prevented annually. Borrowing similarly from the injury analysis of the RIA for the final rule, the Agency estimates that paragraph (d)(5)(iv) will prevent 50 lost workday injuries annually.[4] Finally, to the extent more employees than assumed here avail themselves of the opportunity provided by the final rule, both the benefits and costs will be higher.

Indirect benefits from this provision, as well as from paragraph (l), will come in the form of enhanced employee participation. A recent analysis of Oregon's mandatory safety and health program rule, which requires active employee participation, indicates that employers receive measurable safety benefits from enhanced employee participation in safety programs [Weil, 1994]. Consulting employees in the development of a confined spaces safety program, as required by paragraph (l), may also generate new ideas for more efficient confined spaces entry. As was noted by several commenters from industry in the original rulemaking [Docket S–019, Ex. 149, pp. V–68–71], confined spaces are frequently production vessels that cannot be used while they are being entered, and the employer therefore has an incentive to minimize the amount of time spent in the confined space. Therefore, extra time spent planning safe and efficient entry beforehand may pay dividends not only in increased labor productivity but in capital productivity as well. For example, an employee might have a suggestion for modifying the job so as to avoid the need to enter the space entirely.

Economic Impact

To assess the economic impact of these amendments to the permit required confined spaces standard, the Agency compared the estimated annual costs of these provisions against the revenues and profits of affected businesses. Revenue data were taken from the Bureau of the Census' Standard Statistical Establishment List data base; profit data were taken from Dun and Bradstreet's *Norms and Key Business Ratios* [Dun & Bradstreet]. Sales, profit and relevant cost data are all from 1994, the most recent year for which highly detailed small business data is currently available to the Agency.

The comparison of costs with revenue and profits for all affected establishments is shown in Table III. It indicates that costs to affected establishments in all industries are no more than .006% of revenues and are less than .07% of profits. Costs of this magnitude cannot be considered large enough to impose regulatory burdens on employers or to raise issues of economic feasibility.

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[3] Based on an examination of death certificates for 670 fatalities in confined spaces in NIOSH's National Traumatic Occupational Fatality (NTOF) data base [NIOSH, *Worker Deaths in Confined Spaces*, January 1994]. This is after excluding cases related to grain engulfment, which are dealt with under OSHA's grain handling standard (§ 1910.272). This figure is likely conservative, as NIOSH's figures include some trench cave-ins, which are dealt with under OSHA's excavation standard (§ 1926, Subpart P).

[4] The baseline number of lost-workday injuries in confined spaces was estimated to be 5,041 before the rule was published. (While the original projection of baseline injuries was based on a theoretical projection, it has subsequently been verified as being approximately correct, based on now-available 1993 BLS data [BLS, 1996, Table R64].) This leaves a residual of 756 (.15 × 5,041) such injuries annually that would not be prevented by the original rule. If this provision could theoretically prevent ⅔ of these cases, or 507 (.67 × 756), but will only be used 10 percent of the time, this suggests that 50 lost-workday injuries will be prevented annually as a result of this provision.

TABLE III

COST OF EMPLOYEE INVOLVEMENT
AS A PERCENT OF REVENUES AND PROFITS

SIC	Industry	Cost/ Establishment	Revenues/ Establishment	Costs/ Revenue	Profits/ Establishment	Cost/ Profits
07	Agricultural Services	$7	$269,290	0.003%	$17,425	0.043%
13	Oil & Gas Extraction	$4	$11,234,630	0.000%	$1,021,330	0.000%
20	Food and Kindred Products	$19	$20,620,629	0.000%	$999,788	0.002%
21	Tobacco Products	$84	$869,935,367	0.000%	$204,319,114	0.000%
22	Textile Mill Products	$25	$7,611,245	0.000%	$438,223	0.006%
24	Wood Products(except furniture)	$7	$2,539,729	0.000%	$146,588	0.005%
25	Furniture and Fixtures	$11	$3,571,798	0.000%	$216,729	0.005%
26	Paper Products	$28	$22,478,383	0.000%	$1,260,152	0.002%
27	Printing and Publishing	$6	$2,096,632	0.000%	$152,975	0.004%
28	Chemicals & Allied Products	$35	$29,454,052	0.000%	$2,231,368	0.002%
29	Petroleum Refining	$48	$143,210,471	0.000%	$6,292,581	0.001%
30	Rubber Products	$38	$8,202,235	0.000%	$584,099	0.007%
31	Leather and Leather Products	$9	$7,267,252	0.000%	$429,429	0.002%
32	Stone, Clay,Glass & Concrete	$16	$4,184,931	0.000%	$228,219	0.007%
33	Primary Metals Industry	$64	$18,123,180	0.000%	$1,015,996	0.006%
34	Fabricated Metal Products	$88	$4,348,383	0.002%	$266,070	0.033%
35	Machinery, Except Electrical	$63	$6,924,099	0.001%	$482,589	0.013%
36	Electric/Electronic Equipment	$42	$11,591,397	0.000%	$684,946	0.006%
37	Transportation Equipment	$71	$44,334,058	0.000%	$1,948,012	0.004%
38	Instruments & Related Products	$22	$10,720,444	0.000%	$763,426	0.003%
39	Miscellaneous Manufacturing	$12	$1,568,937	0.001%	$111,245	0.011%
42	Motor Freight Transportation	$28	$1,286,872	0.002%	$58,437	0.048%
49	Electric, Gas, Sanitary Services	$41	$14,371,043	0.000%	$1,350,007	0.003%
50	Wholesale Trade/Durables	$4	$2,282,652	0.000%	$102,134	0.004%
51	Wholesale Trade/Nondurables	$12	$4,447,849	0.000%	$172,734	0.007%
54	Food Stores	$2	$2,179,673	0.000%	$61,031	0.003%
59	Miscellaneous Retail	$4	$547,141	0.001%	$30,254	0.012%
65	Real Estate (Commercial)	$31	$500,929	0.006%	$46,869	0.067%
70	Hotels and Other Lodging	$21	$1,243,240	0.002%	$97,027	0.022%
72	Personal Services	$4	$128,952	0.003%	$10,164	0.036%
76	Miscellaneous Repair Services	$0	$181,478	0.000%	$11,743	0.002%
78	Motion Pictures	$20	$1,597,336	0.001%	$142,792	0.014%
80	Health Services	$10	$1,167,682	0.001%	$71,435	0.014%
84	Museums, Botanical Gardens, Zoo	$24	$560,217	0.004%	$40,331	0.060%
	TOTAL	$24				

Source: U.S. Department of Labor, OSHA, Office of Regulatory Analysis

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The Agency has also, as required by the Regulatory Flexibility Act (as amended) analyzed the impact of the standard specifically on small entities potentially affected by the revisions being made to the final rule. The Agency examined the impact of the revisions both on establishments with fewer than 20 employees and on firms with fewer than 500 employees. An industry profile for establishments with fewer than 20 employees is available in the RIA accompanying the original rule (Ex. 149, Docket S–019). For firms with fewer than 500 employees, industry profile data were not readily available; the Agency therefore analyzed impacts using a ''worst case'' impact scenario. Under this scenario, OSHA assumed that all of the costs of the revised final rule would be borne by firms in this size class, i.e., that no impacts would be borne by larger firms, a highly unlikely scenario. The impacts projected in Table III for firms in the 500-employee size class thus substantially overstate costs for these firms. Nonetheless, as shown in Tables IV and V, even under this worst case scenario, costs were very small relative to sales and profits. Costs did not exceed .006 percent of sales or more than .08 percent of profits for establishments with fewer than 20 or fewer than 500 employees in any affected industry.

Certification of No Significant Impact

Based on the results of the analysis presented above, OSHA certifies, in accordance with the Regulatory Flexibility Act (as amended) that the revised rule for permit required confined spaces will not have a significant economic impact on a substantial number of small entities.

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TABLE IV

COST OF EMPLOYEE INVOLVEMENT
AS A PERCENT OF REVENUES AND PROFITS (ESTABLISHMENTS WITH 20 OR LESS)

SIC	Industry	Cost	Number of Establishments w/ spaces	Cost/ Establishment	Revenues/ Establishment	Costs/ Revenues	Profits/ Establishments	Cost/ Profits
07	Agricultural Services	$41,211	10,349	$4	$176,234	0.002%	$11,403	0.035%
13	Oil & Gas Extraction	$31,847	8,762	$4	$1,018,518	0.000%	$92,593	0.004%
20	Food and Kindred Products	$52,404	5,294	$10	$2,999,329	0.000%	$145,422	0.007%
21	Tobacco Products	$321	18	$18	$88,542,532	0.000%	$20,795,719	0.000%
22	Textile Mill Products	$2,887	303	$10	$2,216,970	0.000%	$127,644	0.007%
24	Wood Products(except furniture)	$18,043	5,813	$3	$639,173	0.000%	$36,892	0.008%
25	Furniture and Fixtures	$19,094	2,761	$7	$1,073,602	0.001%	$65,144	0.011%
26	Paper Products	$7,136	1,349	$5	$3,961,392	0.000%	$222,078	0.002%
27	Printing and Publishing	$85	13	$6	$501,718	0.001%	$36,607	0.018%
28	Chemicals & Allied Products	$38,223	4,220	$9	$3,733,702	0.000%	$282,856	0.003%
29	Petroleum Refining	$26,191	1,118	$23	$17,282,049	0.000%	$759,363	0.003%
30	Rubber Products	$73,151	2,849	$26	$2,348,479	0.001%	$167,240	0.015%
31	Leather and Leather Products	$178	90	$2	$1,832,993	0.000%	$108,313	0.002%
32	Stone, Clay,Glass & Concrete	$98,854	8,464	$12	$1,462,893	0.001%	$79,777	0.015%
33	Primary Metals Industry	$1,381	192	$7	$6,754,239	0.000%	$378,647	0.002%
34	Fabricated Metal Products	$106,804	4,852	$22	$1,501,779	0.001%	$91,891	0.024%
35	Machinery, Except Electrical	$70,431	2,411	$29	$1,283,760	0.002%	$89,474	0.033%
36	Electric/Electronic Equipment	$71,336	3,115	$23	$1,974,741	0.001%	$116,689	0.020%
37	Transportation Equipment	$20,573	1,999	$10	$4,501,612	0.000%	$197,798	0.005%
38	Instruments & Related Products	$141	41	$3	$1,805,440	0.000%	$128,569	0.003%
39	Miscellaneous Manufacturing	$1,009	336	$3	$422,992	0.001%	$29,992	0.010%
42	Motor Freight Transportation	$132,282	10,937	$12	$484,432	0.002%	$21,998	0.055%
49	Electric, Gas, Sanitary Services	$508,510	18,248	$28	$4,468,716	0.001%	$419,788	0.007%
50	Wholesale Trade/Durables	$6,905	2,147	$3	$956,152	0.000%	$42,782	0.008%
51	Wholesale Trade/Nondurables	$331,752	33,360	$10	$1,575,151	0.001%	$61,172	0.016%
54	Food Stores	$11,491	5,612	$2	$633,938	0.000%	$17,750	0.012%
59	Miscellaneous Retail	$22,302	6,865	$3	$272,504	0.001%	$15,068	0.022%
65	Real Estate (Commercial)	$213,062	10,834	$20	$347,857	0.006%	$32,547	0.060%
70	Hotels and Other Lodging	$42,529	2,995	$14	$397,019	0.004%	$30,985	0.046%
72	Personal Services	$0	0	-	$86,133	0.000%	$6,789	0.000%
76	Miscellaneous Repair Services	$0	703	$0	$131,840	0.000%	$8,531	0.000%
78	Motion Pictures	$0	0	-	$485,136	0.000%	$43,368	0.000%
80	Health Services	$14,393	2,006	$7	$338,643	0.002%	$20,717	0.035%
84	Museums, Botanical Gardens, Zoos	$0	0	-	$145,699	0.000%	$10,489	0.000%
	TOTAL	$1,964,528	158,053	$12				

Source: U.S. Department of Labor, OSHA, Office of Regulatory Analysis.

TABLE V

COST OF EMPLOYEE INOLVEMENT AS A PERCENT OF REVENUES AND PROFITS (FIRMS WITH 500 OR FEWER EMPLOYEES)*

SIC	Industry	Cost/ Firm*	Revenues/ Firm	Costs/ Revenues*	Profits/ Firm	Costs/ Profits*
07	Agricultural Services	$7	$250,669	0.003%	$16,220	0.046%
13	Oil & Gas Extraction	$4	$2,017,392	0.000%	$183,399	0.002%
20	Food and Kindred Products	$20	$7,070,622	0.000%	$342,818	0.006%
21	Tobacco Products	$92	$419,423,746	0.000%	$98,508,799	0.000%
22	Textile Mill Products	$26	$4,485,467	0.001%	$258,254	0.010%
24	Wood Products(except furniture)	$7	$1,520,435	0.000%	$87,756	0.009%
25	Furniture and Fixtures	$11	$2,063,881	0.001%	$125,232	0.009%
26	Paper Products	$31	$7,356,895	0.000%	$412,432	0.008%
27	Printing and Publishing	$6	$1,349,101	0.000%	$98,434	0.006%
28	Chemicals & Allied Products	$39	$7,758,606	0.001%	$587,773	0.007%
29	Petroleum Refining	$64	$11,906,004	0.001%	$523,143	0.012%
30	Rubber Products	$41	$4,132,970	0.001%	$294,318	0.014%
31	Leather and Leather Products	$9	$2,312,572	0.000%	$136,652	0.007%
32	Stone, Clay,Glass & Concrete	$18	$2,337,003	0.001%	$127,445	0.015%
33	Primary Metals Industry	$69	$6,447,895	0.001%	$361,473	0.019%
34	Fabricated Metal Products	$93	$2,782,599	0.003%	$170,263	0.054%
35	Machinery, Except Electrical	$64	$2,001,196	0.003%	$139,477	0.046%
36	Electric/Electronic Equipment	$44	$3,836,835	0.001%	$226,722	0.019%
37	Transportation Equipment	$73	$3,362,262	0.002%	$147,736	0.050%
38	Instruments & Related Products	$23	$3,239,263	0.001%	$230,675	0.010%
39	Miscellaneous Manufacturing	$12	$1,539,311	0.001%	$109,144	0.011%
42	Motor Freight Transportation	$30	$841,165	0.004%	$38,197	0.078%
49	Electric, Gas, Sanitary Services	$48	$3,943,703	0.001%	$370,469	0.013%
50	Wholesale Trade/Durables	$4	$4,660,033	0.000%	$208,507	0.002%
51	Wholesale Trade/Nondurables	$13	$7,126,957	0.000%	$276,779	0.005%
54	Food Stores	$2	$1,009,391	0.000%	$28,263	0.008%
59	Miscellaneous Retail	$4	$623,036	0.001%	$34,450	0.012%
65	Real Estate (Commercial)	$33	$616,130	0.005%	$57,647	0.058%
70	Hotels and Other Lodging	$22	$752,216	0.003%	$58,705	0.038%
72	Personal Services	$4	$215,289	0.002%	$16,970	0.024%
76	Miscellaneous Repair Services	$0	$375,598	0.000%	$24,303	0.001%
78	Motion Pictures	$24	$738,175	0.003%	$65,988	0.036%
80	Health Services	$11	$683,798	0.002%	$41,832	0.026%
84	Museums, Botanical Gardens, Zoos	$26	$875,842	0.003%	$63,053	0.042%

*Costs/Firm represent costs for all firms divided by the revenues and profits of firms with fewer than 500 employees.

Source: U.S. Department of Labor, OSHA, Office of Regulatory Analysis

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Unfunded Mandates Reform Act

This amendment to the confined spaces standard has been reviewed by OSHA in accordance with the Unfunded Mandates Reform Act of 1995 (UMRA) (2 USC 1501 *et seq.*) and Executive Order 12875. OSHA has determined, as explained below, that this regulatory action will not impose a significant cost on employers in the public sector and will impose costs of substantially less than $100 million on establishments in the private sector. This rule is therefore not a significant regulatory action within the meaning of Section 202 of UMRA (2 U.S.C. 1532). OSHA standards do not apply to state and local governments except in states that have voluntarily elected to adopt an OSHA State Plan. Consequently, the confined spaces standard does not meet the definition of a ''federal intergovernmental mandate'' (Section 421(5) of UMRA (2 USC 658(5)). Further, OSHA has found that any impact on such entities would be insignificant. In sum, this amendment to the confined spaces standard does not impose unfunded mandates on state, local, or tribal governments.

However, this action may have some benefits to state and local governments. The record indicates that fire departments around the country have been bearing the burden of rescuing employees from confined spaces [Ex. 161–41], typically the result of inadequate or nonexistent entry procedures. To the extent that the opportunity to observe monitoring results in better adherence to preventive measures required by the existing standard, or that employee participation in program development and implementation improves the effectiveness of the underlying permit spaces plan, these entities will garner benefits from the rule. Additionally, to the extent that employers better understand their obligations for rescue preparedness under the existing standard and coordinate with fire departments more effectively, local fire departments will also benefit.

Environmental Assessment

The final permit required confined spaces standard has been reviewed in accordance with the requirements of the National Environmental Policy Act (NEPA) of 1969 (42 U.S.C. 4321 *et seq.*), the regulations of the Council of Environmental Quality (CEQ) (40 CFR part 1500), and DOL NEPA procedures (29 CFR part 11). As a result of this review, OSHA has concluded that the rule will not have a significant environmental impact.

References

Dun and Bradstreet, *Norms and Key Business Ratios*, Desk-Top Edition, 1994–1995.

U.S. Department of Labor, Bureau of Labor Statistics, *Employment and Earnings*, October 1994.

U.S. Department of Labor, Bureau of Labor Statistics, ''Employer Costs for Employer Compensation'', News Release, June 22, 1995.

U.S. Department of Labor, Bureau of Labor Statistics, ''Number of nonfatal occupational injuries and illnesses involving days away from work by event or exposure leading to injury or illness and industry division, 1993''. Available at BLS Web site at: ftp://146.142.4.23/pub/special.requests/ocwc/osh/

Weil, *Working Paper 112*, Economic Policy Institute, 1994.

IV. Federalism

This standard has been reviewed in accordance with Executive Order 12612 (52 FR 31685, October 30, 1987) regarding Federalism. This order requires that agencies, to the extent possible, refrain from limiting State policy options and consult with States prior to taking any action. Agencies may act only when there is clear constitutional authority and the presence of a problem of national scope. The order provides for preemption of State law only if there is a clear congressional intent for the Agency to do so. Any such preemption is to be limited to the extent possible.

Section 18 of the Occupational Safety and Health Act of 1970 expresses Congress' clear intent to preempt State laws relating to issues on which Federal OSHA has promulgated occupational safety and health standards. Under the OSH Act, a State can avoid preemption only if it submits, and obtains Federal approval of, a plan for the development of such standards and their enforcement. Occupational safety and health standards developed by State Plan States must, among other things, be at least as effective in providing safe and healthful employment and places of employment as Federal standards. Where state standards are applicable to products distributed or used in interstate commerce, those standards may not unduly burden commerce and must be justified by compelling local conditions (see Section 18(c)(2) of the OSH Act).

This final rule has been drafted so that employees in every State will be protected by general, performance-oriented standards. To the extent that there are State or regional peculiarities caused by the terrain, the climate or other factors, States would be able, under the OSH Act, to develop their own State standards to deal with any special problems. And, under the Act, if a State develops an approved State program, it could set additional requirements in its standards. Moreover, the performance-oriented nature of this standard, of and by itself, allows flexibility to provide as much safety as possible using varying methods consonant with conditions in each State.

In short, there is a clear national problem related to occupational safety and health concerning entry into permit-required confined spaces. Those States that elect to participate in State plans under the statute would not be preempted by this standard and would be able to address special, local conditions within the framework provided by this performance-oriented standard, while ensuring that the state standards are at least as effective as that standard.

V. OMB Review Under the Paperwork Reduction Act

The collection of information requirements in this final rule are essentially the same as those in the current rule. OSHA does not believe the clarified language of the final rule increases or decreases the burden associated with the preparation, maintainence or disclosure of information beyond the current rule. OMB has approved the collection of information requirements in § 1910.146 under control number 1218–0203. The approval expires on June 30, 1999. OSHA anticipates that it will seek public comment on the burden associated with the information collection requirements in the entire standard in the early part of 1999, allowing the public the opportunity to comment on the need for, and the burden associated with, all collection of information requirements in the standard on permit required confined spaces.

VI. State Plans

The 25 states and territories with their own OSHA-approved occupational safety and health plans must adopt a comparable amended standard within six months of the publication date of a final Federal OSHA standard. These 25 States and territories are: Alaska, Arizona, California, Connecticut (for state and local government employees only), Hawaii, Indiana, Iowa, Kentucky, Maryland, Michigan, Minnesota, Nevada, New Mexico, New York (for state and local government employees only), North Carolina, Oregon, Puerto Rico, South Carolina, Tennessee, Utah, Vermont, Virginia, Virgin Islands, Washington and Wyoming. Until such

time as a comparable standard is promulgated, Federal OSHA will provide interim enforcement assistance, as appropriate, in these states and territories.

VII. List of Subjects in 29 CFR Part 1910

Confined spaces, Monitoring, Occupational safety and health, Personal protective equipment, Rescue equipment, Retrieval lines, Safety, Testing.

VIII. Authority

This document was prepared under the direction of Charles N. Jeffress, Assistant Secretary of Labor for Occupational Safety and Health, U.S. Department of Labor, 200 Constitution Avenue, N.W., Washington, D.C. 20210.

Accordingly, pursuant to sections 4, 6(b) and 8 of the Occupational Safety and Health Act of 1970 (29 U.S.C. 653, 655, 657), Secretary of Labor's Order No. 6–96 (62 FR 111), and 29 CFR part 1911, 29 CFR 1910.146 is amended as set forth below.

Signed at Washington, D.C. this 25th day of November, 1998.

Charles N. Jeffress

Assistant Secretary of Labor

PART 1910—OCCUPATIONAL SAFETY AND HEALTH STANDARDS

1. The authority citation for subpart J of part 1910 is revised to read as follows:

Authority: Secs. 4, 6, and 8, Occupational Safety and Health Act of 1970, 29 U.S.C. 653, 655, 657; Secretary of Labor's Order No. 12–71 (36 FR 8754), 8–76 (41 FR 25059), 9–83 (48 FR 35736), 1–90 (55 FR 9033), or 6–96 (62 FR 111), as applicable.

§ 1950.141 [Amended]

Sections 1910.141, 1910.142, 1910.145, 1910.146, and 1910.147 also issued under 29 CFR part 1911.

2. Section 1910.146 is amended:

a. By revising paragraphs (c)(5)(i)(E), (c)(5)(ii)(C), (c)(5)(ii)(F), (c)(5)(ii)(H), (c)(7)(iii), (e)(3), (k)(1), (k)(2), and (k)(3)(i);

b. By redesignating paragraphs (d)(3)(ii), (d)(3)(iii), (d)(3)(iv), and (d)(3)(v) as paragraphs (d)(3)(iii), (d)(3)(iv), (d)(3)(v), and (d)(3)(vi), respectively; and

c. By adding new paragraphs (d)(3)(ii); (d)(5)(iv), and (d)(5)(v), and (d)(5)(vi) (immediately following paragraph (d)(5)(iii) and before the Note); and (l), to read as follows:

§ 1910.146 Permit-required confined spaces.

* * * * *

(c) * * *

(5) * * *

(i) * * *

(E) The determinations and supporting data required by paragraphs (c)(5)(i)(A), (c)(5)(i)(B), and (c)(5)(i)(C) of this section are documented by the employer and are made available to each employee who enters the permit space under the terms of paragraph (c)(5) of this section or to that employee's authorized representative; and

* * * * *

(ii) * * *

(C) Before an employee enters the space, the internal atmosphere shall be tested, with a calibrated direct-reading instrument, for oxygen content, for flammable gases and vapors, and for potential toxic air contaminants, in that order. Any employee who enters the space, or that employee's authorized representative, shall be provided an opportunity to observe the pre-entry testing required by this paragraph.

* * * * *

(F) The atmosphere within the space shall be periodically tested as necessary to ensure that the continuous forced air ventilation is preventing the accumulation of a hazardous atmosphere. Any employee who enters the space, or that employee's authorized representative, shall be provided with an opportunity to observe the periodic testing required by this paragraph.

* * * * *

(H) The employer shall verify that the space is safe for entry and that the pre-entry measures required by paragraph (c)(5)(ii) of this section have been taken, through a written certification that contains the date, the location of the space, and the signature of the person providing the certification. The certification shall be made before entry and shall be made available to each employee entering the space or to that employee's authorized representative .

* * * * *

(7) * * *

(iii) The employer shall document the basis for determining that all hazards in a permit space have been eliminated, through a certification that contains the date, the location of the space, and the signature of the person making the determination. The certification shall be made available to each employee entering the space or to that employee's authorized representative.

* * * * *

(d) * * *

(3) * * *

(ii) Providing each authorized entrant or that employee's authorized representative with the opportunity to observe any monitoring or testing of permit spaces;

* * * * *

(5) * * *

(iv) Provide each authorized entrant or that employee's authorized representative an opportunity to observe the pre-entry and any subsequent testing or monitoring of permit spaces;

(v) Reevaluate the permit space in the presence of any authorized entrant or that employee's authorized representative who requests that the employer conduct such reevaluation because the entrant or representative has reason to believe that the evaluation of that space may not have been adequate;

(vi) Immediately provide each authorized entrant or that employee's authorized representative with the results of any testing conducted in accord with paragraph (d) of this section.

* * * * *

(e) * * *

(3) The completed permit shall be made available at the time of entry to all authorized entrants or their authorized representatives, by posting it at the entry portal or by any other equally effective means, so that the entrants can confirm that pre-entry preparations have been completed.

* * * * *

(k) *Rescue and emergency services.*

(1) An employer who designates rescue and emergency services, pursuant to paragraph (d)(9) of this section, shall:

(i) Evaluate a prospective rescuer's ability to respond to a rescue summons in a timely manner, considering the hazard(s) identified;

Note to paragraph (k)(l)(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 atmospheres.

(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;

(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;

(B) Is equipped for and proficient in performing the needed rescue services;

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

(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.

Note to paragraph (k)(1): Non-mandatory Appendix F contains examples of criteria which employers can use in evaluating prospective rescuers as required by paragraph (k)(l) of this section.

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

(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;

(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;

(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

(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 permit spaces shall, with respect to opening size, configuration, and accessibility, simulate the types of permit spaces from which rescue is to be performed.

* * * * *

(3) * * *

(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.

* * * * *

(l) *Employee participation.* (1) 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.

(2) Employers shall make available to affected employees and their authorized representatives all information required to be developed by this section.

Appendices to § 1910.146 [Amended]

3. In the Note preceding Appendix A to § 1910.146, the phrase ''Appendices A through E'' is revised to read ''Appendices A through F''.

4. A new Appendix F to § 1910.146 is added to read as follows:

Non-Mandatory Appendix F—Rescue Team or Rescue Service Evaluation Criteria

(1) This appendix provides guidance to employers in choosing an appropriate rescue service. It contains criteria that may be used to evaluate the capabilities both of prospective and current rescue teams. Before a rescue team can be trained or chosen, however, a satisfactory permit program, including an analysis of all permit-required confined spaces to identify all potential hazards in those spaces, must be completed. OSHA believes that compliance with all the provisions of § 1910.146 will enable employers to conduct permit space operations without recourse to rescue services in nearly all cases. However, experience indicates that circumstances will arise where entrants will need to be rescued from permit spaces. It is therefore important for employers to select rescue services or teams, either on-site or off-site, that are equipped and capable of minimizing harm to both entrants and rescuers if the need arises.

(2) For all rescue teams or services, the employer's evaluation should consist of two components: an initial evaluation, in which employers decide whether a potential rescue service or team is adequately trained and equipped to perform permit space rescues of the kind needed at the facility and whether such rescuers can respond in a timely manner, and a performance evaluation, in which employers measure the performance of the team or service during an actual or practice rescue. For example, based on the initial evaluation, an employer may determine that maintaining an on-site rescue team will be more expensive than obtaining the services of an off-site team, without being significantly more effective, and decide to hire a rescue service. During a performance evaluation, the employer could decide, after observing the rescue service perform a practice rescue, that the service's training or preparedness was not adequate to effect a timely or effective rescue at his or her facility and decide to select another rescue service, or to form an internal rescue team.

A. Initial Evaluation

I. The employer should meet with the prospective rescue service to facilitate the evaluations required by § 1910.146(k)(1)(i) and § 1910.146(k)(1)(ii). At a minimum, if an off-site rescue service is being considered, the employer must contact the service to plan and coordinate the evaluations required by the standard. Merely posting the service's number or planning to rely on the 911 emergency phone number to obtain these services at the time of a permit space emergency would not comply with paragraph (k)(1) of the standard.

II. The capabilities required of a rescue service vary with the type of permit spaces from which rescue may be necessary and the hazards likely to be encountered in those spaces. Answering the questions below will assist employers in determining whether the rescue service is capable of performing rescues in the permit spaces present at the employer's workplace.

1. What are the needs of the employer with regard to response time (time for the rescue service to receive notification, arrive at the scene, and set up and be ready for entry)? For example, if entry is to be made into an IDLH atmosphere, or into a space that can quickly develop an IDLH atmosphere (if ventilation fails or for other reasons), the rescue team or service would need to be standing by at the permit space. On the other hand, if the danger to entrants is restricted to mechanical hazards that would cause injuries (e.g., broken bones, abrasions) a response time of 10 or 15 minutes might be adequate.

2. How quickly can the rescue team or service get from its location to the permit spaces from which rescue may be necessary? Relevant factors to consider would include: the location of the rescue team or service relative to the employer's workplace, the quality of roads and highways to be traveled, potential bottlenecks or traffic congestion that might be encountered in transit, the reliability of the rescuer's vehicles, and the training and skill of its drivers.

3. What is the availability of the rescue service? Is it unavailable at certain times of the day or in certain situations? What is the likelihood that key personnel of the rescue service might be unavailable at times? If the rescue service becomes unavailable while an entry is underway, does it have the capability of notifying the employer so that the employer can instruct the attendant to abort the entry immediately?

4. Does the rescue service meet all the requirements of paragraph (k)(2) of the standard? If not, has it developed a plan that will enable it to meet those requirements in the future? If so, how soon can the plan be implemented?

5. For off-site services, is the service willing to perform rescues at the employer's workplace? (An employer may not rely on a rescuer who declines, for whatever reason, to provide rescue services.)

6. Is an adequate method for communications between the attendant, employer and prospective rescuer available so that a rescue request can be transmitted to the rescuer without delay? How soon after notification can a prospective rescuer dispatch a rescue team to the entry site?

7. For rescues into spaces that may pose significant atmospheric hazards and from which rescue entry, patient packaging and retrieval cannot be safely accomplished in a relatively short time (15–20 minutes), employers should consider using airline respirators (with escape bottles) for the rescuers and to supply rescue air to the patient. If the employer decides to use SCBA, does the prospective rescue service have an ample supply of replacement cylinders and procedures for rescuers to enter and exit (or be retrieved) well within the SCBA's air supply limits?

8. If the space has a vertical entry over 5 feet in depth, can the prospective rescue service properly perform entry rescues? Does the service have the technical knowledge and equipment to perform rope work or elevated rescue, if needed?

9. Does the rescue service have the necessary skills in medical evaluation, patient packaging and emergency response?

10. Does the rescue service have the necessary equipment to perform rescues, or must the equipment be provided by the employer or another source?

B. Performance Evaluation

Rescue services are required by paragraph (k)(2)(iv) of the standard to practice rescues at least once every 12 months, provided that the team or service has not successfully performed a permit space rescue within that time. As part of each practice session, the service should perform a critique of the practice rescue, or have another qualified party perform the critique, so that deficiencies in procedures, equipment, training, or number of personnel can be identified and corrected. The results of the critique, and the corrections made to respond to the deficiencies identified, should be given to the employer to enable it to determine whether the rescue service can quickly be upgraded to meet the employer's rescue needs or whether another service must be selected. The following questions will assist employers and rescue teams and services evaluate their performance.

1. Have all members of the service been trained as permit space entrants, at a minimum, including training in the potential hazards of all permit spaces, or of representative permit spaces, from which rescue may be needed? Can team members recognize the signs, symptoms, and consequences of exposure to any hazardous atmospheres that may be present in those permit spaces?

2. Is every team member provided with, and properly trained in, the use and need for PPE, such as SCBA or fall arrest equipment, which may be required to perform permit space rescues in the facility? Is every team member properly trained to perform his or her functions and make rescues, and to use any rescue equipment, such as ropes and backboards, that may be needed in a rescue attempt?

3. Are team members trained in the first aid and medical skills needed to treat victims overcome or injured by the types of hazards that may be encountered in the permit spaces at the facility?

4. Do all team members perform their functions safely and efficiently? Do rescue service personnel focus on their own safety before considering the safety of the victim?

5. If necessary, can the rescue service properly test the atmosphere to determine if it is IDLH?

6. Can the rescue personnel identify information pertinent to the rescue from entry permits, hot work permits, and MSDSs?

7. Has the rescue service been informed of any hazards to personnel that may arise from outside the space, such as those that may be caused by future work near the space?

8. If necessary, can the rescue service properly package and retrieve victims from a permit space that has a limited size opening (less than 24 inches (60.9 cm) in diameter), limited internal space, or internal obstacles or hazards?

9. If necessary, can the rescue service safely perform an elevated (high angle) rescue?

10. Does the rescue service have a plan for each of the kinds of permit space rescue operations at the facility? Is the plan adequate for all types of rescue operations that may be needed at the facility? Teams may practice in representative spaces, or in spaces that are ''worst-case'' or most restrictive with respect to internal configuration, elevation, and portal size. The following characteristics of a practice space should be considered when deciding whether a space is truly representative of an actual permit space:

(1) Internal configuration.

(a) Open—there are no obstacles, barriers, or obstructions within the space. One example is a water tank.

(b) Obstructed—the permit space contains some type of obstruction that a rescuer would need to maneuver around. An example would be a baffle or mixing blade. Large equipment, such as a ladder or scaffold, brought into a space for work purposes would be considered an obstruction if the positioning or size of the equipment would make rescue more difficult.

(2) Elevation.

(a) Elevated—a permit space where the entrance portal or opening is above grade by 4 feet or more. This type of space usually requires knowledge of high angle rescue procedures because of the difficulty in packaging and transporting a patient to the ground from the portal.

(b) Non-elevated—a permit space with the entrance portal located less than 4 feet above grade. This type of space will allow the rescue team to transport an injured employee normally.

(3) Portal size.

(a) Restricted—A portal of 24 inches or less in the least dimension. Portals of this size are too small to allow a rescuer to simply enter the space while using SCBA. The portal size is also too small to allow normal spinal immobilization of an injured employee.

(b) Unrestricted—A portal of greater than 24 inches in the least dimension. These portals allow relatively free movement into and out of the permit space.

(4) Space access.

(a) Horizontal—The portal is located on the side of the permit space. Use of retrieval lines could be difficult.

(b) Vertical—The portal is located on the top of the permit space, so that rescuers must climb down, or the bottom of the permit space, so that rescuers must climb up to enter the space. Vertical portals may require knowledge of rope techniques, or special patient packaging to safely retrieve a downed entrant.

[FR Doc. 98–31946 Filed 11–30–98; 8:45 am]

BILLING CODE 4510–26–P

DEPARTMENT OF COMMERCE

Patent and Trademark Office

37 CFR Part 1

[Docket No.: 980511124–8284–02]

Revision of Patent Cooperation Treaty Application Procedure

AGENCY: Patent and Trademark Office, Commerce.

ACTION: Final rule.

SUMMARY: The Patent and Trademark Office (Office or USPTO) is confirming the amendment of its rules of practice relating to applications filed under the Patent Cooperation Treaty (PCT). This amendment of the rules of practice conformed the United States rules of practice with the corresponding changes to the Regulations under the PCT which became effective July 1, 1998.

DATES: This final rule is effective on December 1, 1998. The interim rule, published at 63 FR 29614 (June 1, 1998), was effective on July 1, 1998.

FOR FURTHER INFORMATION CONTACT: Richard Lazarus, PCT Legal Office Supervisor, by telephone at (703) 308–6451; or by mail addressed to: Box PCT, Assistant Commissioner for Patents, Washington, DC 20231; or by facsimile to (703) 308–6459, marked to the attention of Richard Lazarus.

SUPPLEMENTARY INFORMATION: During a September–October 1997 meeting of the Governing Bodies of the World Intellectual Property Organization (WIPO), the PCT Assembly adopted amendments to the PCT Regulations. These amendments to the PCT Regulations took effect on July 1, 1998, and the amended PCT Regulations were published in the *Official Gazette* at 1210 *Off. Gaz. Pat. Office* 29 (May 12, 1998). An interim rule conforming the United States rules of practice to the corresponding changes in the PCT Regulations was published in the **Federal Register** at 63 FR 29614 (June 1, 1998), and in the *Official Gazette* at 1211 *Off. Gaz. Pat. Office* 76 (June 23, 1998).

The Office has received no comments on the changes to 37 CFR contained in the interim rule. Accordingly, the changes to 37 CFR contained in the