North Carolina Department of Labor
Occupational Safety and Health Division

Raleigh, North Carolina

Field Information System Standards Notice 63A

***Subject*:** Requirements for workers who are actively conducting operations in atmospheres that are Immediately Dangerous to Life and Health (IDLH).

A. **Standards**.

1. 29 CFR 1910.120 – Hazardous Waste Operations and Emergency Response
2. 29 CFR 1910.134 – Respiratory Protection
3. 29 CFR 1910.156 – Fire Brigades
4. NFPA 1500-2002 – Fire Department Occupational Safety and Health Programs
5. NCGS 95-129(1) – Occupational Safety and Health Act of North Carolina, "General Duty Clause"
6. Memorandum dated May 1, 1995 from James W. Stanley to Regional Administrators and State Designees entitled "Response to IDLH or Potential IDLH Atmospheres."

B. **Background.**

Standards Notice (SN) 63 was developed to adopt OSHA's policy on the requirements for workers who are actively conducting operations in actual or potential IDLH atmospheres or atmospheres in which the potential for such conditions exist. This policy was based on interpretations of applicable OSHA standards, and the use of the "general duty clause". Since the implementation of SN 63, the respiratory protection standard, 29 CFR 1910.134, has been revised to better address issues relative to the implementation of an effective respiratory protection program and the safe use of respirators. In addition, the National Fire Protection Association consensus standards referenced in the original 1995 memo have since been revised and updated.

C. **Interpretations.**

The interpretations and clarifications iterated in this Notice will serve to clarify the requirements of all the applicable standards that apply to operations with actual or potential IDLH atmospheres exist in the following situations:

- Emergency responses to uncontrolled releases of a hazardous substance or substances;
- Emergency operations covering interior structural fire fighting.

These interpretations are not intended to apply to personnel prior to initiation of IDLH operations. In addition, they do not address entry into confined spaces containing an IDLH atmosphere. That subject is addressed in the Permit Required Confined Space standard, 29 CFR 1910.146, and is discussed in the compliance directive for that standard.

1. Clarification of 29 CFR 1910.120:

The HAZWOPER standard addresses three categories of employees: workers at hazardous waste sites (in paragraphs b – o), workers at Treatment, Storage, and Disposal (TSD) facilities (in paragraph p), and workers in situations where they face an actual or potential emergency from the release of hazardous substances (in paragraph q). Firefighters are often involved in emergency response operations when serving as members of an organized HAZMAT team, and as such, would be covered by the HAZWOPER standard.

Paragraph (q)(3)(v) of HAZWOPER requires that "operations in hazardous areas shall be performed using the buddy system in groups of two or more." In addition, paragraph (q)(3)(vi) states that "back up personnel shall stand by with equipment ready to provide assistance or rescue." This section means that at a minimum, the buddy system must be used within the hazardous area (entry by at least two persons) and at least two additional personnel must stand by outside the hazardous area. Thus, there must be at least four individual are the site. One of the two individuals outside the hazard area can be assigned to another task, provided that the second assignment does not interfere with the performance of the standby role.

Regarding the use of the buddy systems, OSHA understands the HAZWOPER standard to mean the following: a buddy shall be assigned who is able to: (1) provide the partner with assistance; (2) observe the partner for signs of chemical, heat, or other hazardous exposure; (3) periodically check the integrity of the partner's personal protective equipment/clothing; and (4) if emergency help is needed, notify the appropriate individual (i.e., the Command Post Supervisor, the on-scene Incident Commander). The standard defines a "buddy system" and "IDLH":

"Buddy system means a system of organizing employees into workgroups in such a manner that each employee of the work group is designated to be observed by at least one other employee in the work group. The purpose of the buddy system is to provide rapid assistance to employees in the event of an emergency."

"IDLH or immediately dangerous to life or health means an atmospheric concentration of any toxic, corrosive or asphyxiant substance that poses an immediate threat to life or would cause irreversible or delayed adverse health effects or would interfere with an individual's ability to escape from a dangerous atmosphere."

Further compliance guidance and information on paragraph (q) can be found in OSHA Instruction CPL 2-2.59, "Inspection Procedures for the Hazardous Waste Operations and Emergency Response Standard, 29 CFR 1910.120, paragraph (q): Emergency Response to Hazardous Substance Releases."

2. Clarification of 29 CFR 1910.134

Paragraph (c)(1) requires the development of written respiratory protection program where respirators are necessary to protect the health of employees or where required by the employer. In addition, paragraph (g), which requires employers to establish and implement procedures for the proper use of respirators, recognizes two hazardous situations in which standby personnel are required: IDLH atmospheres (paragraph (g)(3)) and interior structural fire fighting (paragraph (g)(4)).

Paragraph (g)(3) requires the employer to establish and implement procedures for the use of respirators in IDLH atmospheres. Paragraphs (g)(3)(i) through (g)(3)(vi) specifically states:

> (3) For all IDLH atmospheres the employer shall 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 necessary assistance appropriate 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).

Paragraphs (e)(3)(i) and (ii) of the former 1910.134 distinguished between potential IDLH and known IDLH atmospheres, respectively. Paragraph (e)(3)(i) stated that only one standby person was necessary when a respirator failure "could " cause its wearer to be overcome. However, paragraph (e)(3)(ii) required the presence of standby "men" (implying plural) with suitable rescue equipment when employees must enter known IDLH atmospheres wearing SCBA. This provision has been interpreted to mean that at least two standby personnel were required for known IDLH atmospheres.

The revised respiratory protection standard, 29 CFR 1910.134, requires that, whenever employees work in an IDLH atmosphere, at least one standby person, who is trained and equipped to provide effective emergency assistance, remain outside the atmosphere in communication with the employee(s) inside the atmosphere. Federal OSHA has determined that outside of emergency response situations and fire fighting (see paragraph (g)(4)), a single standby person is adequate, because in most fixed workplaces, IDLH environments are well characterized either through analysis of monitoring results or through a process hazard analysis. This is possible in many instances because either only one respirator user is exposed to the IDLH conditions at a time, or the configuration of the IDLH atmosphere is such that a single standby individual can provide adequate communication and support to every respirator user in the IDLH environment.

However, there can exist situations where more than one standby person is necessary. For example, to clean and paint inside a multi-level, multi-portal water tower, a process which can generate a hazardous atmosphere due to vapors from cleaning solution and paint solvents, employees may have to enter the tower through different portals to work at different levels. Such a situation would require more than one standby person to maintain adequate communication and accessibility at each level.

Paragraph (g)(4) – Procedures for interior structural firefighting – requires the use of a buddy system consisting of a minimum of two employees inside the IDLH atmosphere and two employees outside the IDLH atmosphere. Specifically, paragraph (g)(4) states:

> (4) Procedures for interior structural firefighting. In addition to the requirements set forth under paragraph (g)(3), in interior structural fires, the employer shall ensure that:
>
> (i) At least two employees enter the IDLH atmosphere and remain in visual or voice contact with one another at all times;
> (ii) At least two employees are located outside the IDLH atmosphere; and
> (iii) All employees engaged in interior structural firefighting use SCBAs.

3. <u>Clarification of 29 CFR 1910.156</u>

The Fire Brigade standard, 29 CFR 1910.156, contains mandatory requirements for firefighting units. The standard covers only emergency operations involving interior structural fire fighting. Because fire brigades vary in type, function, and size, the OSHA requirements are performance oriented to provide enough flexibility for the employer to organize a fire brigade which best reflects the needs of the workplace.

In 29 CFR 1910.155, "Scope, application and definitions applicable to this subpart" (i.e., Subpart L) defines interior structural fire fighting as: "the physical activity of fire suppression, rescue or both inside of buildings or enclosed structures which are involved in a fire situation beyond the incipient stage." Enclosed structure means: "a structure with a roof or ceiling and at least two

walls which may present fire hazards to employees, such as accumulations of smoke, toxic gases and heat, similar to those found in buildings." An incipient stage fire is defined by the regulation as: "a fire which is in the initial or beginning stage and which can be controlled or extinguished by portable fire extinguishers, Class II standpipe or small hose systems, without the need for protective clothing or breathing apparatus."

It is universally recognized that conditions present during an advanced interior structural fire create an IDLH atmosphere. The Fire Brigade standard does not directly address the minimum number of firefighters required when engaged in operations presenting an IDLH atmosphere. Regarding the use of SCBAs in IDLH atmospheres, paragraph 1910.156(f)(1)(i) does refer to the Respiratory Protection standard, which has been discussed earlier.

4. NFPA 1500 - 2002.

NFPA 1500-2002, section 8.4.7 states: "In the initial stages of an incident where only one crew is operating in the hazardous area at a working structural fire, a minimum of four individuals shall be required, consisting of two individuals working as a crew in the hazard area and two individuals present outside this hazard area available for assistance or rescue at emergency operations where entry into the danger area is required." [The term 'working structural fire' is defined in NFPA 600 – 2000 as: "Any fire that requires the use of a 1 and ½ inch or larger fire attack hose line and that also requires the use of self-contained breathing apparatus for members entering the hazardous area."]

In addition, NFPA has other relevant criteria found in sections 8.4.4 and 8.4.5. In 8.4.4 the standard requires members operating inside hazardous areas during emergency incidents to operate in crews of two or more. Section 8.4.5 requires that crew members operating within hazardous areas shall be in communication with each other through visual, audible or physical means or safety guide rope in order to coordinate their activities.

D. **Effective Date.**

SN 63 is canceled. This SN is effective on the date of signature. It will remain in effect until revised or canceled by the Director.

Signed on Original
J. Edgar Geddie
Health Standards Officer

Signed on Original
Allen McNeely
Director

8/09/05
Date of Signature