

**NORTH CAROLINA DEPARTMENT OF LABOR
DIVISION OF OCCUPATIONAL SAFETY AND HEALTH
RALEIGH, NORTH CAROLINA**

Field Information System
SN/OPN

Standards Notice 63

SUBJECT: Requirements for Workers who are actively conducting operations in atmospheres that are Immediately Dangerous to Life and Health (IDLH) based on interpretation of applicable standards, and use of the General Duty Clause.

A. Purpose. This Notice adopts the Federal OSHA interpretation (attached) relating to the requirements for workers who are actively conducting operations in atmospheres that are immediately dangerous to life and health. The purpose of the federal action was to clarify requirements under all of the applicable standards, as well as use of the General Duty Clause.

B. Scope. This Notice applies statewide for inspections in which workers are exposed to IDLH atmospheres.

C. References.

1. Memo dated May 1, 1995 from James W. Stanley to Regional Administrators and State Designees entitled "Response to IDLH or Potential IDLH Atmospheres."
2. Tentative Interim Amendment to NFPA 1500 "Fire Department Occupational Safety and Health."
3. Letter from John B. Miles, Jr., to Peg Seminario.

D. Background. Federal OSHA had received a number of requests for interpretation of the Occupational Safety and Health Administration (OSHA) requirements for workers who are actively conducting operations in atmospheres that are immediately dangerous to life and health. The policy established is based on interpretations of applicable standards, and the use of the general duty clause. North Carolina's adoption of this policy will assure that the State has addressed the issue of IDLH atmospheres with standard enforcement which is "at least as effective" as Federal OSHA.

E. Action. Effective October 1, 1996, Standards Notice 63 shall be used in interpreting all of the applicable standards which have a bearing on the IDLH issue. This could include the following standards: Hazardous Waste Operations and Emergency Response (HAZWOPER), 29 CFR 1910.120; Respiratory Protection, 29 CFR 1910.134; Fire Brigades, 29 CFR 1910.156, and General Duty Requirements, NCGS 95-129(1).

September 24, 1996
Charles N. Jeffress
Director
(Signed on Original)

DEPARTMENT OF LABOR

Occupational Safety and Health Administration

Response to IDLH or Potential IDLH Atmospheres

Memorandum For: REGIONAL ADMINISTRATORS STATE DESIGNEES
From: JAMES W. STANLEY DEPUTY ASSISTANT SECRETARY

Subject: Response to IDLH or Potential IDLH Atmospheres

The agency has recently received a number of requests for interpretation of the occupational Safety and Health Administration (OSHA) requirements for workers who are actively conducting operations in atmospheres that are immediately dangerous to life and health (IDLH). The specific question posed is whether OSHA regulations mandate the minimum number of workers required to be involved in operations under IDLH or potential IDLE conditions.

The purpose of this memorandum is to clarify requirements under all of the applicable standards which have a bearing on this question, namely: Hazardous Waste Operations and Emergency Response (HAZWOPER), 29 CFR 1910.120; Respiratory Protection, 29 CFR 1910.134; Fire Brigades, 29 CFR 1910.156; and Section 5 (a) (1) of the Occupational Safety and Health Act of 1970. It is intended to apply to operations where IDLH conditions exist or potentially exist in the following situations:

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

As will be explained in greater detail later in the memorandum, the interpretations given herein are not- intended to apply to personnel prior to initiation of IDLH operations. At the end of the memorandum is a two page summary to which persons who do not have a need to follow in detail the reasons which led the Agency to the particular requirements contained therein may refer.

This memorandum does not address entry into a confined space 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 on that standard.

CLARIFICATION OF 1910.120:

Attached for your reference is a copy of an August 15, 1994, letter to Ms. Peg Seminario of the AFL-CIO that provides OSHA's current interpretation of the HAZWOPER standard as it relates to IDLH operations. The letter specifically addresses the HAZWOPER requirement for workers who are engaged in remedial operations as well as in emergency response operations in atmospheres which are or may be IDLH and who utilize self-contained breathing apparatus (SCBA) for the control of inhalation hazard(s).

The HAZWOPER standard addresses three categories of employees: workers at hazardous waste sites (paragraphs b-o), workers at Treatment, Storage, and Disposal facilities (paragraph p) and workers in workplace situations where they face an actual or potential emergency from the release of hazardous substances (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 (,emphasis added) 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 as a minimum the buddy system must be used within the hazardous area (entry by at least two persons) and at least two additional personnel shall stand by outside the hazardous area. Thus, there must be at least four individuals at 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 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" below as:

"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."

"1DLH 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."

Please refer to 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," for further compliance guidance and information on paragraph (q).

CLARIFICATION OF 1910.134:

The Respiratory Protection standard, 29 CFR 1910.134, which does apply to operations covered by OSHA's Fire Brigade Standard will be discussed next.

Paragraph (e)(3), requires the development of written procedures for the safe use of respirators in IDLH and potential IDLH atmospheres. Paragraphs (e)(3) (i) and (ii) of the standard specifically state that:

(3)Written procedures shall be prepared covering safe use of respirators in dangerous atmospheres that might be encountered in normal operations or in emergencies. Personnel shall be familiar with these procedures and the available respirators.

(i) In areas where the wearer, with failure of the respirator, could be overcome by a toxic or oxygen- deficient atmosphere, at least one additional man shall be present. Communications (visual, voice, or signal line) shall be maintained between both or all individuals present. Planning shall be such that one individual will be unaffected by any likely incident and have the proper rescue equipment to be able to assist the other(s) in case of emergency.

(ii)When self-contained breathing apparatus or hose masks with blowers are used in atmospheres immediately dangerous to life or health, standby men must be present with suitable rescue equipment." (Please note that NIOSH no longer approves hose masks with blowers for IDLH).

Paragraph (i) addresses workplace conditions where an IDLH atmosphere is possible but not presently existing. It requires at least one standby person to be present in communication with the worker(s) who are in the area of the potential IDLH. This

stand by person must be located outside of the potential IDLH exposure area and, therefore, would be able to provide or call for emergency assistance, if necessary.

Paragraph (ii) requires that for known or existing IDLH atmospheres, at least two standby persons must be present with positive pressure self-contained breathing apparatus (SCBA) and retrieval equipment for emergency assistance.

Consequently, the Respiratory Protection standard requires a minimum of two personnel to function-in a standby capacity and located in a safe area to monitor and provide emergency assistance to worker(s) in a known IDLH atmosphere. This rule does not address the number of workers required within the IDLH hazardous area, nor does it explicitly require the use of a "buddy system" as defined in the HAZWOPER standard. However, a "buddy system" approach would be in compliance with 1910.134.

According to 1910.134, written procedures must be developed to address the safe use of respirators in dangerous atmospheres that may be encountered either in normal operations or in emergencies. These procedures must include a plan for rescue based-on any circumstances that can reasonably be anticipated during the operation. In the event that rescue of worker(s) from the hazardous area is necessary, the standard requires a minimum of two properly trained and equipped individuals to remain outside of the hazard area, one unaffected by the incident who is to maintain communications with all parties, to coordinate the-rescue and summon additional assistance, if necessary. The other must be trained, equipped and available to effect a successful rescue. If appropriate, an employer may elect to use non-entry rescue, such as retrieval systems using safety harnesses and safety lines, for removing persons from hazardous atmospheres.

The Respiratory Protection standard is currently being amended. The proposed rule was published in the Federal Register (59 FR 219) on November 15, 1994. The written comment period was extended to April 13, 1995.

CLARIFICATION OF 1910.156:

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. 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 SCBA's in IDLH atmospheres, paragraph 1910.156 (f)(1)(i) does refer to the Respiratory Protection standard, 1910.134, which has been discussed earlier.

APPLICATION OF RELEVANT NFPA STANDARDS

Two national consensus standards are relevant to the issue of firefighter safety and provide further detailed requirements for the industry. The first standard is NFPA 1500-1992, entitled Fire Department Occupational Safety and Health Program. It has an interim amendment (attached) that states at 6-4.1.1: "At least four members shall be assembled before initiating interior firefighting operations at a working structural fire." Working structural fire is defined in section 1-5 as follows: Any fire that requires the use of a 1 and 1/2 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 reality the term means the same thing as the OSHA term interior structural fire fighting. Consequently, four persons, two in and two out, each with protective clothing and respiratory protection are essential for the safety of those performing this work inside/ a structure.

In addition to this interim amendment, NFPA 1500 has other relevant criteria found in requirements 6- 4.3 and 6-4.4. In 6-4.3 the standard-requires members operating inside hazardous areas during emergency incidents to operate in teams of two or more. Team members operating within hazardous areas shall be in communication with each other through visual, audible, physical, safety guiderope, electronic means or other means to coordinate their activities.

Section 6-4.4 further requires that in the initial stages of an incident, where only one team is operating in the hazardous area, at least one additional member shall be assigned to stand by outside the hazardous area where the team is operating. This standby member shall be responsible for maintaining constant awareness of those

working in the hazardous area, their location, time of entry, functions, and identity. A second person (the incident commander) outside the hazard area is specified by Section 6-1 of the NFPA 1500.

In summary, NFPA 1500, requires four firefighters on the scene before performing interior structural firefighting operations; and, when firefighters or other personnel actually perform interior attack, they are to enter the hazardous area using teams of at least two members.

The second applicable NFPA standard is NFPA 600-1992, Standard on Industrial Fire Brigades (attached). Chapter 5 of this standard entitled, "Fire Brigades That Perform Interior Structural Fire Fighting Only," paragraph 5-3.5, specifies requirements for the number of members to be involved at the scene. Requirements in 5-3.5 are almost exactly the same as those in sections 6-4.3 and 6-4.4 of NFPA 1500.

Additionally, NFPA 600 and NFPA 1500 both require a fire officer to be the incident manager. This NFPA requirement, along with the other requirements discussed above, results in a minimum of four members on the scene before beginning to fight interior structural fires: two inside as a team, operating in the hazardous area; two outside the hazardous area, where one is standing by and another may be performing another function, such as managing the incident, as long as its performance does not interfere with the second outside person's ability to assist in the event of an emergency. This standard does not address the number of persons necessary to staff a fire apparatus leaving a station before on-scene evaluation has occurred. That is a matter to be determined by each local fire fighting unit.

APPLICATION OF THE GENERAL DUTY CLAUSE

Occupational exposure to fire is a well-recognized serious hazard and feasible abatement methods exist. Therefore, application of section 5(a)(1) may be warranted in some circumstances. Any citation of Section 5(a)(1) must meet the requirements outlined in the Field Inspection Reference Manual (FIRM), Chapter III, and may be issued where there is a hazard which cannot be abated by compliance with a specific OSHA standard.

Because OSHA's Fire Brigade standard does not directly specify the number of firefighters who can safely perform certain firefighting operations, the NFPA national consensus standards serve as guidance as to what is generally recognized as hazardous in the industry. The two NFPA standards referred to above explicitly address the number of persons to be involved when performing interior structural firefighting operations. The requirements contained in these NFPA standards do not apply to

exterior fire fighting or to other firefighting activities not involving IDLH conditions. Therefore, a citation for violation of the General

Duty Clause shall be issued when it is documented that only one person conducted interior structural firefighting operations or when less than two persons were standing by when interior structural firefighting operations were being conducted. A Section 5(a)(1) citation may not be issued for incipient stage interior fires or for exterior firefighting operations conducted during advanced interior structural fires.

STATE PLANS

Regional Administrators shall explain the content of this memorandum to the State designees as requested. States are strongly encouraged to adopt an identical or at least as effective interpretation of the standards. As indicated in STP 2-2.8B, Fire Protection, because of the unique nature of firefighting employment in the public sector, a State may develop alternate standards for State and local government employees as long as the program provides protection equivalent to that provided private sector employees. If the State develops a separate public sector standard, it must be submitted within 30 days of promulgation in accordance with STP 2-1.117.

Federal OSHA does not have direct jurisdiction over State and local government employees. However, the Occupational Safety and Health Act allows States to administer their own occupational safety and health programs under plans approved and monitored by Federal OSHA. States with approved occupational safety-and health State plans must adopt standards which are at least as effective as Federal OSHA standards and must provide coverage for State and local government employees as effective as that provided to private sector employees. (In states without OSHAapproved plans, the Federal workplace protection provided to public sector employees would be under the Environmental Protection Agency hazardous waste operations (HAZWOPER) regulation (40 CFR Part 3 11); States may also enforce their own laws and regulations covering the public sector. v This guidance supersedes any previously provided on the issue. Should you have any questions or comments, please contact Tom Galassi at (202) 219-8036.

Attachments

SUMMARY REQUIREMENTS FOR RESPONSE TO IDLH OR POTENTIAL IDLH ATMOSPHERES USING SELF-CONTAINED BREATHING APPARATUS

- The HAZWOPER standard requires the use of the buddy system with standby personnel for emergency response operations involving the release of hazardous substance(s) producing IDLH conditions for employees responding.

The regulation specifies a minimum of four personnel, two as a team in the buddy system and two standby back-up personnel, to conduct operations in hazardous areas safely.

- The use of SCBA's in IDLH atmospheres for circumstances not covered by HAZWOPER is covered by the Respiratory Protection standard which requires two standby personnel to be present outside the IDLH hazard area. Failure to have two standby persons for a known, existing IDLH, e.g., an interior structural fire, would be a violation of 1910.134 (e)(3)(ii).
- The Fire Brigade standard covers employers whose employees perform interior attack on interior structural fires and references the Respiratory Protection standard's requirements above.
- The National Fire Protection Association (NFPA) recognizes that firefighters must operate in teams of two or more when conducting interior structural firefighting operations; failure to respond with teams of two or more would be a violation of the General Duty Clause.
- The Respiratory Protection standard and industry practice (as codified through the NFPA standards) require that a minimum of four firefighters be involved in emergency operations during interior structural fire fighting. Two act as a team in the hazard area, and two stand by outside the hazardous area to monitor the operation and provide assistance should a rescue be necessary.
- OSHA regulations and NFPA standards specifically require communication between members of the team. Firefighters working in teams of two or more (buddy system) in hazardous areas (IDLH atmospheres) are required to maintain communications (voice, visual contact, or tethering with a signal line). Radios or other means of electronic contact shall not be substituted for direct visual contact between employees within the individual team in the danger area.
- One of the individuals outside of the hazard area may be assigned more than one role, such as the incident commander in charge of the emergency or operator of fire apparatus, where it does not jeopardize worker safety and health.
- Incipient fires, which do not create IDLH atmospheres or require the use of SCBA's, or firefighting activities conducted from outside a structure are not addressed by this standard interpretation.

Tentative Interim Amendment
NFPA 1500
Fire Department Occupational Safety and Health

1992 Edition

Reference: 1-5, 6-4.1.1, and A-6-4.1.1
TIA92-1*

Pursuant to Section 15 of the NFPA Regulations Governing Committee Projects, the National Fire Protection Association has issued the following Tentative Interim Amendment to NFPA 1500, standard on Fire Department Occupational Safety and Health Program, 1992 edition. The TIA was processed by the Fire Service Occupational Safety and Health Committee and was issued by the Standards Council on July 23, 1993.

A. Tentative Interim Amendment is tentative because it has not been processed through the entire standards-making procedures. It is interim because it is effective only between editions of the standard. A TIA automatically becomes a Proposal of the proponent for the next edition of the standard; as such, it then is subject to all of the procedures of the standards-making process.

1. Add the following new definition to Section 1-5:

Working Structural Fire, Any fire that requires the use of a 1 1/2-inch or larger fire attack hose line and that also requires the use of self-contained breathing apparatus for members entering the hazardous area.

2. Add the following new 6-4.1.1* and A-6-4.1.1 to read as follows:

6-4.1.1* At least four members shall be assembled before initiating interior fire fighting operations at a working structural, fire. All fire fighting operations shall be conducted. in accordance with 6-4.3 and 6-4.4.

Exception: If, upon arrival at the scene, members find an imminent life threatening situation where immediate action may prevent the loss of life or serious injury, such action shall be permitted with less than four persons on the scene, when conducted in accordance with the provisions of Section 6-2.

A-6-4.1.1 The assembling of four members for the initial fire attack can be accomplished in many ways. The fire department should determine the manner in which they plan to assemble members in their response plan. The four members assembled for initial fire fighting operations can include any combination of members arriving separately at the incident.

Members who arrive on the scene of a working structural fire prior to the assembling of four persons may initiate exterior actions in preparation for an interior attack. Them may include, but are not limited to action such as the

establishment of a water supply, the shutting off of utilities, the placement of ladders, the laying of the attack line to the entrance of the structure or exposure protection.

If members are going to initiate actions that would involve entering of a structure because of an imminent life-threatening situation where immediate action may prevent the loss of life or serious injury, and four members are not yet on the scene, the members should carefully evaluate the level of risk that they would be exposed to by taking such actions. If it is determined that the situation warrants such action, incoming companies should be notified so that they will be prepared to provide necessary support and backup upon their arrival.

Such action is intended to apply only to those rare and circumstances when, in the member's professional judgement, the specific instance requires immediate action to prevent the loss of life or serious injury and four persons have not yet arrived on the fireground.

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NATIONAL FIRE PROTECTION ASSOCIATION

**U.S. Department of Labor
Occupational Safety and Health Administration
Washington, D.C. 20210**

Reply to the Attention of:
Peg Seminario, Director
Department of Occupational Safety and Health
AFL-CIO
815 Sixteenth Street, N.W.
Washington, D.C. 20006

Dear Ms. Seminario:

This is in further response to your letter of March 7, concerning the Occupational Safety and Health Administration's (OSHA) Hazardous Waste Operations and Emergency Response (HAZWOPER, 29 CFR 1910.120), Fire Brigades (29 CFR 1910.156) and Respiratory Protection (29 CFR 1910.134) standards. We apologize for the delay in this response.

Your questions request clarification on requirements for workers utilizing self-contained breathing apparatus (SCBA) in atmospheres which may be immediately dangerous to life and health (IDLH). We will address each of your questions separately, in the order presented in your letter.

1. Are workers utilizing SCBA in IDLE, potentially IDLH, or unknown atmospheres required to operate in a buddy system with two or more personnel?

HAZWOPER requires that operations in hazardous areas be performed in groups of two or more using the buddy system. This is true for remedial operations, as discussed in paragraph (d), as well as emergency response operations, as discussed in paragraph (q) (3)(v). 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, etc.).

2. Are these workers in the buddy system required to be in direct voice or visual contact or tethered with a signal line?

Yes. Workers must maintain direct contact with their buddy. Visual contact is required, i.e. individuals in the danger area must not be out of sight of others.

Communication operations in potentially IDLH or unknown atmospheres between persons engaged in requires both verbal and visual communication. Since verbal communication may be impeded, by background noise and the use of Personal protective equipment, the use of prearranged visual cues (e.g., hand signals) can help convey the message, and are effective-only when the signals are agreed to in advance.

3. Can radios or other means of electronic contact be substituted allowing employees to work in IDLH, potentially IDLH, or unknown atmospheres separate from their "buddy(s) ?"

No, unless other means of electronic contact meet the intent of the buddy system, i.e., the individual(s) must be in sight of their buddy(s) in order to provide rapid assistance to employees in the event of an emergency.

4. Are identically equipped and trained workers required to be present outside the IDLH, potentially IDLH, or unknown atmospheres prior to a team entering

and during the team's work in the hazard area in order to account for and be available to assist or rescue members of the team working in the IDLH, potentially IDLH, or unknown atmospheres?

Yes.

5. Do these regulations mean that a minimum of four individuals is required, consisting of two individuals working as a team in the IDLH, potentially IDLH, or unknown atmospheres, and two individuals present outside this atmosphere for assistance or rescue, at emergency operations defined in 29 CFR 1910.120 and 29 CFR 1910.156.?

For emergency operations defined in 29 CFR 1910.120 where workers are required to enter the danger area, the buddy system as described in response to question 11 shall be used. For emergency responses a minimum of four individuals is required prior to entering a potentially MIX or unknown atmosphere.

6. Does OSHA find it permissible for the two individuals outside the hazard area to be engaged in other activities, such as incident commander in charge of the emergency incident or operating equipment (such as heavy equipment or fire apparatus operators)?

This would depend on the roles and activities to be assigned as well as the scope of the emergency activities, and can only be determined on a case by case basis. OSHA does permit one individual to be assigned more than one role, where the dual roles do not jeopardize worker safety and health. For example, the role of safety official could be played by the On-Scene Incident Commander. OSHA recommends that other back-up personnel be present in addition to the On-Scene Incident Commander for responses to all but the most minor emergencies. Further, assigning back-up personnel to operate heavy equipment could clearly jeopardize the safety and health of the workers in the potentially IDLH environment.

Although individuals, such as the site safety and health officer, may perform certain tasks in emergencies, in most cases, independent teams provide greater efficiency and safety. Generally, separate teams are created for specific emergency purposes, such as decontamination, rescue and entry.

7. If a rescue operation is necessary, must the buddy system be maintained while entering the IDLH, potentially IDLH, or unknown atmospheres by the properly equipped and trained rescue personnel?

Yes. Entrance into IDLH, potentially IDLH, or unknown atmospheres for -the purpose of performing rescue is not to occur without a partner, i.e., buddy.

We hope this information is helpful. If you have any further questions please contact Ruth McCully at (202) 219-8036.

Sincerely,

John B. Miles, Jr.
Director
Directorate of Compliance Programs
(Signed on Original)