NFPA
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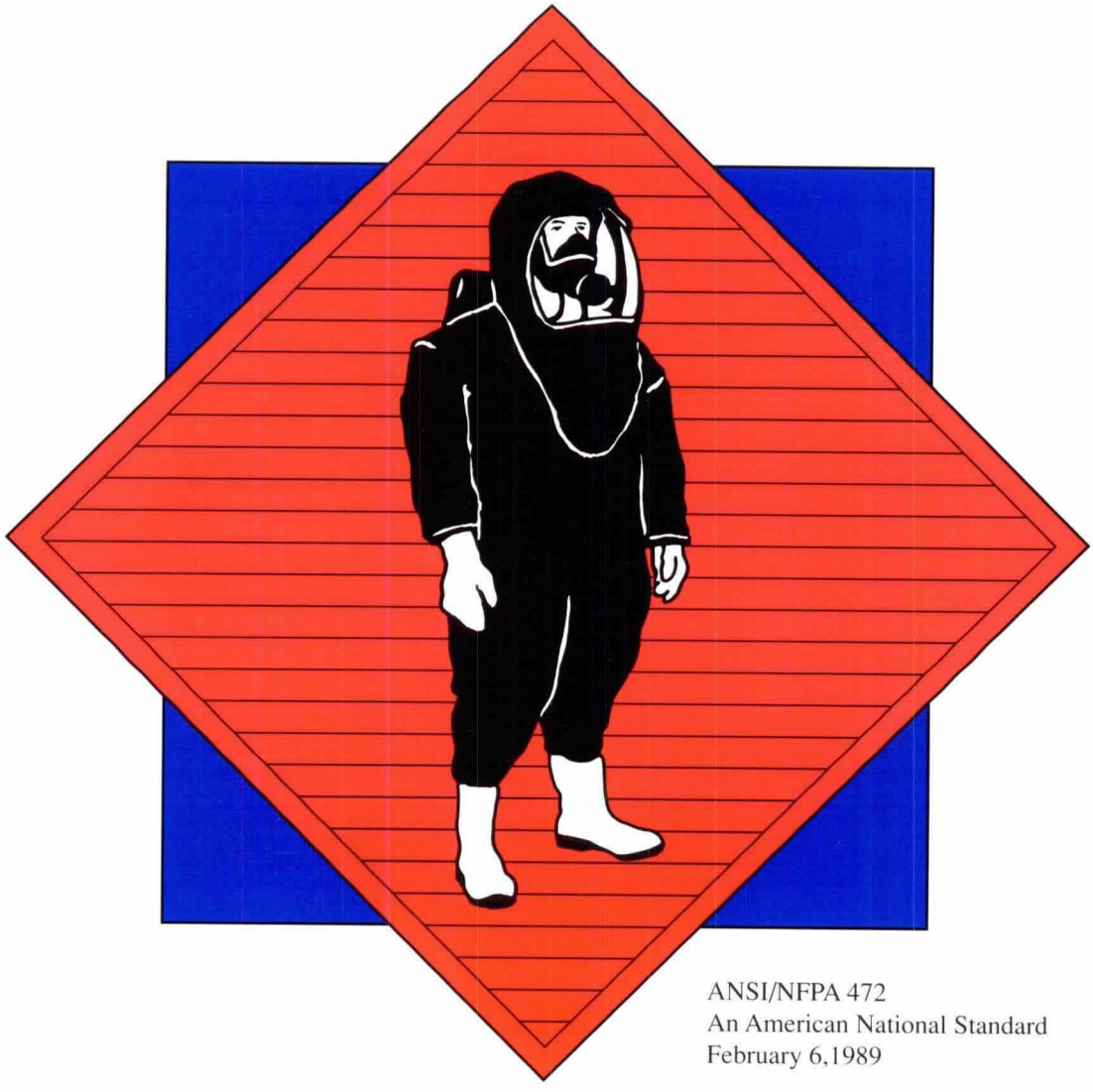
1989 Edition

Standard for Professional Competence of Responders to Hazardous Materials Incidents



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National Fire Protection Association

NOTICE

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Policy Adopted by NFPA Board of Directors on December 3, 1982

The Board of Directors reaffirms that the National Fire Protection Association recognizes that the toxicity of the products of combustion is an important factor in the loss of life from fire. NFPA has dealt with that subject in its technical committee documents for many years.

There is a concern that the growing use of synthetic materials may produce more or additional toxic products of combustion in a fire environment. The Board has, therefore, asked all NFPA technical committees to review the documents for which they are responsible to be sure that the documents respond to this current concern. To assist the committees in meeting this request, the Board has appointed an advisory committee to provide specific guidance to the technical committees on questions relating to assessing the hazards of the products of combustion.

Statement on NFPA Procedures

This material has been developed under the published procedures of the National Fire Protection Association, which are designed to assure the appointment of technically competent Committees having balanced representation. While these procedures assure the highest degree of care, neither the National Fire Protection Association, its members, nor those participating in its activities accepts any liability resulting from compliance or noncompliance with the provisions given herein, for any restrictions imposed on materials or processes, or for the completeness of the text.

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NATIONAL FIRE PROTECTION ASSOCIATION

NFPA 472

Standard for

Professional Competence of Responders to Hazardous Materials Incidents

1989 Edition

This edition of NFPA 472, *Standard for Professional Competence of Responders to Hazardous Materials Incidents*, was prepared by the Technical Committee on Hazardous Materials Response Personnel, and acted on by the National Fire Protection Association, Inc. at its Fall Meeting held November 14-17, 1988 in Nashville, Tennessee. It was issued by the Standards Council on January 13, 1989 with an effective date of February 6, 1989.

The 1989 edition of this document has been approved by the American National Standards Institute.

Origin and Development of NFPA 472

In 1984, two separate requests to NFPA expressed a perceived need for documents relating to response to hazardous materials incidents. One came from the International Society of Fire Service Instructors, the other from the International Fire Service Training Association. NFPA sought public support for the idea and received many letters indicating agreement with the requests.

At the July 1985 NFPA Standards Council meeting, approval was given to the concept of a new project on Hazardous Materials Response Personnel. The Council directed that a proposed scope and start-up roster for the new Committee be prepared, taking into account the need to expand the Committee membership beyond the fire service and the application beyond "professional qualifications."

When establishment of the Committee was formally announced, many requests for membership were received, and similar requests continued to arrive during the first year of its existence. The first meeting of the Committee took place in October 1986 at the Fairfax County Fire and Rescue Training Center. Since that opening session, four additional meetings were held to complete work on the document.

Interest in the subject of hazardous materials, especially as it relates to the emergency responder, continues at a high level. Some of this is due to an increased awareness of the magnitude of the problem; much of it can be credited to federal regulations that will have an impact on all responders.

The Technical Committee intends to develop other documents that will be of benefit to the response community.

The gratitude of the Committee is extended to all who assisted in the development of this standard, and especially to those non-Committee members who participated so fully in this process.

Technical Committee on Hazardous Materials Response Personnel

Warren E. Isman, *Chairman*
Fairfax County Fire & Rescue Dept.

Gerald L. Grey, *Vice Chairman*
San Francisco Fire Dept.
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Martin F. Henry, *Secretary*
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John P. Cashman, Hazardous Materials Newsletter
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(Rep. Technical Committee on Fire Service Protective Clothing and Equipment)

This list represents the membership at the time the Committee was balloted on the text of this edition. Since that time, changes in the membership may have occurred.

NOTE: Membership on a Committee shall not in and of itself constitute an endorsement of the Association or any document developed by the Committee on which the member serves.

Contents

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NOTICE: An asterisk (*) following the number or letter designating a paragraph indicates explanatory material on that paragraph in Appendix A.

Information on referenced publications can be found in Chapter 5 and Appendix C.

Chapter 1 Administration

1-1 Scope. This standard identifies the levels of competence required of responders to hazardous materials incidents. It specifically covers the requirements for first responder, hazardous materials technician, and hazardous materials specialist.

1-2 Purpose. The purpose of this standard is to specify minimum requirements of competence for those who will respond to hazardous materials incidents. It is not the intent of this standard to restrict any jurisdiction from exceeding these minimum requirements.

1-2.1 One of the purposes of the qualification requirements contained herein is to reduce the numbers of accidents, injuries, and illnesses during response to hazardous materials incidents and to help prevent exposure to hazardous materials to reduce the probability of fatalities, illnesses and disabilities affecting emergency response personnel.

1-3* Definitions.

Approved. Acceptable to the "authority having jurisdiction."

NOTE: The National Fire Protection Association does not approve, inspect or certify any installations, procedures, equipment, or materials nor does it approve or evaluate testing laboratories. In determining the acceptability of installations or procedures, equipment or materials, the authority having jurisdiction may base acceptance on compliance with NFPA or other appropriate standards. In the absence of such standards, said authority may require evidence of proper installation, procedure or use. The authority having jurisdiction may also refer to the listings or labeling practices of an organization concerned with product evaluations which is in a position to determine compliance with appropriate standards for the current production of listed items.

Authority Having Jurisdiction. The "authority having jurisdiction" is the organization, office or individual responsible for "approving" equipment, an installation or a procedure.

NOTE: The phrase "authority having jurisdiction" is used in NFPA documents in a broad manner since jurisdictions and "approval" agencies vary as do their responsibilities. Where public safety is primary, the "authority having jurisdiction" may be a federal, state, local or other regional department or individual such as a fire chief, fire marshal, chief of a fire prevention bureau, labor department, health department, building official, electrical inspector, or others having statutory authority. For insurance purposes, an insurance inspection department, rating bureau, or other insurance company representative may be the "authority having jurisdiction." In many circumstances the property owner or his designated agent assumes the role of the "authority having jurisdiction"; at government installations, the commanding officer or departmental official may be the "authority having jurisdiction."

Cold Zone. This area contains the command post and such other support functions as are deemed necessary to control the incident. This is also referred to as the clean zone or support zone in other documents.

Competence. Possessing knowledge, skills, and judgment needed to perform indicated objectives satisfactorily.

Confinement. Those procedures taken to keep a material in a defined or local area.

Container. Any bag, barrel, bottle, box, can, cylinder, drum, reaction vessel, storage tank, or the like that contains a hazardous material.

Containment. Those procedures taken to keep a material in its container.

Contaminant/Contamination. A substance or process that poses a threat to life, health, or the environment.

Control. The procedures, techniques, and methods used in the mitigation of a hazardous materials incident, including containment, extinguishment, and confinement.

Control Zones. The designation of areas at a hazardous materials incident based upon safety and the degree of hazard. Many terms are used to describe the zones involved in a hazardous materials incident. For purposes of this standard, these zones shall be defined as the hot, warm, and cold zones.

Coordination. The process used to get people, who may represent different agencies, to work together harmoniously in a common action or effort.

Decontamination (Contamination Reduction). The physical and/or chemical process of reducing and preventing the spread of contamination from persons and equipment used at a hazardous materials incident.

Decontamination Area. The area, usually located within the warm zone, where decontamination takes place.

Degradation. A chemical action involving the molecular breakdown of a protective clothing material due to contact with a chemical. The term degradation may also refer to the molecular breakdown of the spilled or released material to render it less hazardous.

Demonstrate. To show by actual use. This may be supplemented by simulation, explanation, illustration, or a combination of these.

Describe. To explain verbally or in writing using standard terms recognized in the hazardous materials response community.

Hazard/Hazardous. Capable of posing an unreasonable risk to health, safety, or the environment; capable of doing harm.

Hazard Sector. That function of an overall Incident Command System that deals with the actual mitigation of a hazardous materials incident. It is directed by a sector officer and principally deals with the technical aspects of the incident.

Hazard Sector Officer. The person responsible for the management of the hazard sector.

Hazardous Material.* A substance (gas, liquid, or solid) capable of creating harm to people, property, and the environment. See specific regulatory definitions in Appendix A.

Class. The general grouping of hazardous materials into nine categories identified by the United Nations Hazard Class Number System, including:

Explosives
Gases (compressed, liquefied, dissolved)
Flammable Liquids
Flammable Solids
Oxidizers
Poisonous Materials
Radioactive Materials
Corrosive Materials
Other Regulated Materials

Classification. The individual divisions of hazardous materials called "hazard classes" in the United States and "divisions" in the United Nations system, including:

Explosives A	Poison Gases
Explosives B	Poison B
Explosives C	Irritating Materials
Blasting Agents	Etiologic Agents
Nonflammable Gases	Radioactive Materials
Flammable Gases	Corrosive Materials
Flammable Liquids	ORM A
Combustible Liquids	ORM B
Flammable Solids	ORM C
Oxidizers	ORM D
Organic Peroxides	ORM E

Hazardous Materials Response Team. A group of trained response personnel operating under an emergency response plan and appropriate standard operating procedures to control or otherwise minimize or eliminate the hazards to people, property, or the environment from a released hazardous material.

High Temperature Protective Clothing. Protective clothing designed to protect the wearer for short-term high temperature exposures. This type of clothing is usually of limited use in dealing with chemical commodities.

Hot Zone. Area immediately surrounding a hazardous materials incident, which extends far enough to prevent adverse effects from hazardous materials releases to personnel outside the zone. This zone is also referred to as the exclusion zone or restricted zone in other documents.

Identify. To physically select, indicate, or explain verbally or in writing using recognized standard terms.

Incident. A fire involving a hazardous material or a release or potential release of a hazardous material.

Incident Command System. An organized system of roles, responsibilities, and standard operating procedures used to manage and direct emergency operations.

Incident Commander. The person responsible for all decisions relating to the management of the incident. The incident commander is in charge at the incident.

Listed. Equipment or materials included in a list published by an organization acceptable to the "authority having jurisdiction" and concerned with product evaluation, that maintains periodic inspection of production of listed equipment or materials and whose listing states either that the equipment or material meets appropriate standards or has been tested and found suitable for use in a specified manner.

NOTE: The means for identifying listed equipment may vary for each organization concerned with product evaluation, some of which do not recognize equipment as listed unless it is also labeled. The "authority having jurisdiction" should utilize the system employed by the listing organization to identify a listed product.

Material Safety Data Sheet (MSDS). Provided by manufacturers and compounders (blenders) of chemicals, with minimum information about chemical composition, physical and chemical properties, health and safety hazards, emergency response, and waste disposal of the material as required by OSHA 1910.1200.

Monitoring Equipment. Instruments and devices used to identify and quantify contaminants.

Objective. A goal that is achieved through the attainment of a skill, knowledge, or both, which can be observed or measured.

Packaging. Any container that holds a material (hazardous or nonhazardous). Packaging includes nonbulk and bulk packaging.

Nonbulk Packaging. Any packaging having a capacity meeting one of the following criteria:

(a) Liquid — internal volume of 118.9 gallons (450 L) or less;

(b) Solid — capacity of 881.8 pounds (400 kg) or less; or

(c) Compressed gas — water capacity of 1000 pounds (453.6 kg) or less.

Bulk Packaging. Any packaging, including transport vehicles, having a capacity greater than described above under nonbulk packaging. Bulk packaging for transportation can be either placed on or in a transport vehicle or vessel or is constructed as an integral part of the transport vehicle.

Penetration. The movement of a material through a suit's closures, such as zippers, buttonholes, seams, flaps, or other design features of chemical protective clothing, and through punctures, cuts, and tears.

Permeation. A chemical action involving the movement of chemicals, on a molecular level, through intact material.

Personal Protective Equipment. The equipment provided to shield or isolate a person from the chemical, physical, and thermal hazards that may be encountered at a hazardous materials incident. Adequate personal protective equipment should protect the respiratory system, skin, eyes, face, hands, feet, head, body, and hearing. Personal protective equipment includes both personal protective clothing and respiratory protection.

Protective Clothing. Equipment designed to protect the wearer from heat and/or hazardous materials contacting the skin or eyes. Protective clothing is divided into three types:

(a) structural fire fighting protective clothing;

(b) chemical protective clothing; and

(c) high temperature protective clothing.

Qualified. Having satisfactorily completed the requirements of the objectives.

Respiratory Protection. Equipment designed to protect the wearer from the inhalation of contaminants. Respiratory protection is divided into three types:

(a) positive pressure self-contained breathing apparatus;

(b) positive pressure self-contained air respirators; and

(c) air purifying respirators.

Response. That portion of incident management in which personnel are involved in controlling a hazardous materials incident.

Safely. To perform the objective without injury to self or others, property, or the environment.

Shall. Indicates a mandatory requirement.

Should. Indicates a recommendation or that which is advised but not required.

Stabilization. The period of an incident where the adverse behavior of the hazardous material is controlled.

Termination. That portion of incident management in which personnel are involved in documenting safety procedures, site operations, hazards faced, and lessons learned from the incident. Termination is divided into three phases: debriefing the incident, post-incident analysis, and critiquing the incident.

Understanding. The process of gaining or developing the meaning of various types of materials or knowledge.

Warm Zone. The area where personnel and equipment decontamination and hot zone support takes place. It includes control points for the access corridor and thus assists in reducing the spread of contamination. This is also referred to as the decontamination, contamination reduction, or limited access zone in other documents.

Chapter 2 First Responder

2-1 General. First responders are divided into two levels of competency: first responder awareness and first responder operational. First responders at the awareness level shall be trained to meet all of the requirements of Section 2-2 of this chapter and first responders at the operational level shall be trained to meet all of the requirements of Section 2-2 and Section 2-3 of this chapter. All first responders shall receive training to meet federal Occupational Safety and Health Administration (OSHA) or Environmental Protection Agency (EPA) requirements, whichever is appropriate for their jurisdiction.

2-2 First Responder Awareness Level.

2-2.1 Goal. The goal at the first responder awareness level shall be to provide those persons, who in the course of their normal duties may be the first on the scene of a hazardous materials incident, with the following competencies to respond in a safe manner when confronted with a hazardous materials incident. These personnel are not expected to take any actions other than to recognize that a hazard exists, call for trained personnel, and secure the area.

(a) An understanding of what hazardous materials are, and the risks associated with them in an incident;

(b) An understanding of the potential outcomes associated with an emergency created when hazardous materials are present;

(c) The ability to recognize the presence of hazardous materials in an emergency;

(d) The ability to identify the hazardous materials and determine basic hazard and response information;

(e) An understanding of the role of the first responder on the scene of a hazardous materials incident as identified in the local contingency plan for hazardous materials incidents;

(f) The ability to recognize the need for additional resources and make appropriate notifications; and

(g) The ability to initiate scene management (i.e., implement the Incident Command System, isolate the immediate site, deny entry to unauthorized persons, and evacuate).

2-2.2 Safety. The first responder at the awareness level shall be capable of the following.

2-2.2.1 Describe how hazardous materials incidents are different from other emergencies.

2-2.2.2* Describe at least six ways hazardous materials are harmful to people at hazardous materials incidents.

2-2.2.3* Describe the general routes of entry for human exposure to hazardous materials.

2-2.2.4 Describe the limitations of street clothes or work uniforms at the scene of hazardous materials incidents.

2-2.2.5 Describe the threats posed to property and the environment by hazardous materials releases.

2-2.2.6* Describe the precautions necessary when rendering emergency medical care to victims of hazardous materials incidents.

2-2.2.7 Identify typical ignition sources found at the scene of hazardous materials incidents.

2-2.3 Resources and Planning. The person with a first responder awareness level shall be capable of the following.

2-2.3.1 Describe the local procedures for requesting additional resources for dealing with hazardous materials incidents.

2-2.3.2 Describe the role of the first responder at the scene of a hazardous materials incident, as identified in the local contingency plan for hazardous materials incidents.

2-2.4 Incident Management. The first responder at the awareness level shall be capable of the following.

2-2.4.1 Describe the purpose, need, and benefits of an Incident Command System at the scene of a hazardous materials incident.

2-2.4.2 Describe the process for implementing the Incident Command System at hazardous materials emergencies.

2-2.4.3 Describe the basic techniques used to deny site entry.

2-2.4.4 Describe the basic techniques used to isolate the immediate site.

2-2.4.5 Describe the basic techniques for evacuation in hazardous materials incidents.

2-2.5 Recognition of Hazardous Materials. The first responder at the awareness level shall be capable of the following.

2-2.5.1 List the nine hazardous materials classes, describe the primary hazards of each class, and give examples of each class.

2-2.5.2* Use the six groups of clues to detect the presence of hazardous materials.

2-2.5.3 Identify typical locations in the community or facility where hazardous materials are manufactured, transported, stored, used, or disposed of.

2-2.5.4 Describe placards, labels, container markings, and shipping papers used in the transportation of hazardous materials and explain their advantages and limitations in recognizing hazardous materials.

2-2.5.5 Identify the shipping papers found in various modes of transportation, the individuals responsible for the papers, and location where carried and found during an incident.

2-2.5.6 Given various examples of containers and packaging, identify the containers and packages by name and give an example of the materials that may typically be found inside.

2-2.5.7 Describe the types of specialized marking systems found at fixed facilities (such as military; special hazard communication markings; and NFPA 704, *Standard System for the Identification of the Fire Hazards of Materials*).

2-2.6 Classification, Identification, and Verification. The first responder at the awareness level shall be capable of the following.

2-2.6.1* Define the following terms:

(a) Hazardous materials.

(b) Dangerous goods (in Canada).

2-2.6.2 Identify the specific name of a hazardous material involved in an emergency, or at least classify the material by its primary hazard using container markings, placards, and labels, pesticide labeling, shipping papers, Material Safety Data Sheets (MSDS), or personal contacts.

2-2.6.3* Identify three sources for obtaining hazard response information about hazardous materials and describe the types of information provided in each.

2-2.6.4 Demonstrate the use of the DOT *Emergency Response Guidebook* (ERG) in assessing hazards and response actions, and determining isolation and evacuation distances.

2-2.6.5 Demonstrate the use of a Material Safety Data Sheet (MSDS) in obtaining hazard and response information and determining isolation and evacuation distances.

2-2.6.6 Explain the difficulties encountered in identifying the specific name of hazardous materials and their hazard and response information in an emergency.

2-2.7 Chemistry of Hazardous Materials. Reserved.

2-2.8 Hazard and Risk Assessment. The first responder at the awareness level shall be capable of the following.

2-2.8.1 Describe the risk associated with hazardous materials located and transported through the community or facility and their potential threat to people, property, or the environment.

2-2.9 Personal Protective Equipment. Reserved.

2-2.10 Hazardous Materials Control. Reserved.

2-2.11 Decontamination. Reserved.

2-2.12 Termination Procedures. Reserved.

2-2.13 Educational and Medical Requirements. Reserved.

2-3 First Responder Operational Level.

2-3.1 Goal. The goal at the first responder operational level shall be to provide those persons, whose duties include responding to the scene of emergencies that may involve hazardous materials, with the following competencies to respond safely to hazardous materials incidents. The first responder at the operational level is not expected to use specialized chemical protective clothing or special control equipment.

(a) The ability to make initial basic hazard and risk assessments;

(b) The ability to determine when the personal protective equipment provided to the first responders by the authority having jurisdiction for use in their normal response activities is adequate for a particular hazardous materials incident, and the ability to use that equipment properly;

(c) An understanding of basic hazardous materials terms;

(d) The ability to perform hazardous materials control operations within the capabilities of the resources and personal protective equipment available;

(e) An understanding of decontamination procedures;

(f) The ability to perform basic record keeping tasks; and

(g) The ability to expand the Incident Command System.

2-3.2 Safety. The first responder at the operational level shall be capable of the following.

2-3.2.1 Describe the importance of a buddy system in controlling hazardous materials incidents.

2-3.2.2 Identify the advantages and dangers of search and rescue missions at hazardous materials incidents.

2-3.2.3 Identify the advantages and hazards associated with the rescue, extrication, and removal of a victim from a hazardous materials incident.

2-3.2.4 Describe the precautions to be taken to protect oneself when fighting fire involving hazardous materials.

2-3.2.5 Define BLEVE and describe what happens to the container when a BLEVE occurs and how a BLEVE can be prevented.

2-3.2.6 Describe when it may be prudent to pull back from a hazardous materials incident.

2-3.2.7 Describe the hazards and precautions to be observed when approaching a hazardous materials incident.

2-3.3 Resources and Planning. The first responder at the operational level shall be capable of the following.

2-3.3.1 Describe the levels of hazardous materials incidents and levels of hazardous materials incident responder as identified in the local contingency plan.

2-3.3.2 Describe the need for a hazardous materials response plan and describe the major elements of the plan.

2-3.3.3 Describe the importance of coordination between various agencies at the scene of hazardous materials incidents.

2-3.3.4 Describe the importance of pre-emergency planning relating to specific sites.

2-3.4 Incident Management. The first responder at the operational level shall be capable of the following.

2-3.4.1 Describe the elements of the Incident Command System to assure coordination of response activities at hazardous materials incidents.

2-3.4.2 Given a simulated hazardous materials incident, demonstrate the following skills:

(a) Assume command

(b) Establish scene control through control zones

(c) Establish a command post.

2-3.4.3 Identify the criteria for determining the location of the control zones for a hazardous materials incident.

2-3.4.4 Describe your organization's standard operating procedures relating to hazardous materials.

2-3.5 Recognition of Hazardous Materials. The first responder at the operational level shall be capable of the following.

2-3.5.1 Given a pesticide label, identify and explain the significance of the following:

(a) Name of pesticide

(b) Signal word

(c) EPA registration number

(d) Precautionary statement

(e) Hazard statement

(f) Active ingredient.

2-3.6 Classification, Identification, and Verification. The first responder at the operational level shall be capable of the following.

2-3.6.1 Describe the assistance provided by CHEMTREC, how one is to contact CHEMTREC, and what information the first responder should furnish CHEMTREC.

2-3.6.2 Given a Material Safety Data Sheet (MSDS), select and interpret information that is useful in determining the hazards of the chemical.

2-3.7 Chemistry of Hazardous Materials. The first responder at the operational level shall be capable of the following.

2-3.7.1 Define the following chemical and physical properties and describe their importance in the risk assessment process.

(a) Boiling point
(b) Flammable (explosive) limits
(c) Flash point
(d) Ignition (autoignition) temperature
(e) Specific gravity
(f) Vapor density
(g) Vapor pressure
(h) Water solubility.

2-3.7.2 Define the following terms:
(a) Alpha Radiation
(b) Beta Radiation
(c) Gamma Radiation.

2-3.8 Hazard and Risk Assessment. Reserved.

2-3.9 Personal Protective Equipment. The first responder at the operational level shall be capable of the following.

NOTE: The terms protective breathing apparatus and respiratory protection are used interchangeably in this document.

2-3.9.1* Identify the respiratory hazards encountered at hazardous materials incidents, and describe the need for proper protective breathing apparatus, as prescribed by OSHA.

2-3.9.2 Identify the physical requirements of the wearer of protective breathing apparatus.

2-3.9.3 Describe the limitations of personnel working with protective breathing apparatus.

2-3.9.4 List the types of protective breathing apparatus and describe the advantages and limitations of each at hazardous materials incidents.

2-3.9.5 Identify the procedure for cleaning and sanitizing protective breathing apparatus for future use.

2-3.9.6 Identify the operational components of the types of protective breathing apparatus provided by the authority having jurisdiction and explain their function.

2-3.9.7 Demonstrate the use of positive pressure air-supplied respiratory devices as provided by the authority having jurisdiction.

2-3.9.8 Describe the need for specialized protective clothing used at hazardous materials incidents.

2-3.9.9 Describe the application, use, and limitations of the following levels of protective clothing used at hazardous materials incidents:
(a) Structural fire fighting clothing
(b) Chemical protective clothing (nonencapsulating, encapsulating)
(c) High temperature clothing.

2-3.9.10 Demonstrate the proper donning, doffing, and usage of all personal protective equipment provided to the first responder by the authority having jurisdiction for use in their normal response activities.

2-3.9.11 Describe the factors to be considered in selecting the proper respiratory protection at hazardous materials incidents.

2-3.10 Hazardous Materials Control. The first responder at the operational level shall be capable of the following.

2-3.10.1 Describe the techniques for controlling hazardous materials releases available to the first responder.

2-3.11 Decontamination. The first responder at the operational level shall be capable of the following.

2-3.11.1 Describe the need for decontamination procedures at hazardous materials incidents.

2-3.11.2 Describe the ways that personnel, personal protective equipment, apparatus, tools, and equipment become contaminated and the importance and limitations of decontamination procedures.

2-3.11.3 Demonstrate the basic decontamination procedures, as defined by the authority having jurisdiction, for victims, personnel, personal protective equipment, tools, equipment, and apparatus at hazardous materials incidents.

2-3.12 Termination Procedures. The first responder at the operational level shall be capable of the following.

2-3.12.1 Describe the importance of documentation for a hazardous materials incident including training records, exposure records, incident reports, and critique reports.

2-3.12.2 Demonstrate an ability to keep an activity log and exposure records for hazardous materials incidents.

2-3.13 Educational and Medical Requirements. Reserved.

Chapter 3 Hazardous Materials Technician

3-1 General.

3-1.1 The hazardous materials technician shall meet all of the objectives indicated for the first responder in Chapter 2. In addition, that person shall meet the training and medical surveillance program requirements in accordance with federal Occupational Safety and Health Administration (OSHA) or U.S. Environmental Protection Agency (EPA) regulations.

3-1.2 Goal. The goal at the hazardous materials technician level shall be to provide the responders with the following competencies to respond safely to hazardous materials incidents:
(a) The ability to implement a safety plan;

(b) The ability to classify, identify, and verify known and unknown materials by using basic monitoring equipment;

(c) The ability to function within an assigned role in the Incident Command System;

(d) The ability to select and use at least Level B protection in addition to any other specialized personal protective equipment provided to the hazardous materials technician by the authority having jurisdiction;

(e) The ability to make hazard and risk assessments;

(f) The ability to perform advanced hazardous materials control operations within the capabilities of the resources and personal protective equipment available;

(g) The ability to select and implement appropriate decontamination procedures;

(h) The ability to complete record keeping procedures; and

(i) The ability to understand basic chemical, biological, and radiological terms and their behavior.

3-2 Safety. The hazardous materials technician shall be capable of the following.

3-2.1* Describe the components of a site safety plan for a hazardous materials incident.

3-2.2 Given a simulated hazardous materials incident, implement a safety plan.

3-2.3 Identify the criteria to be considered for modifying (increasing or decreasing as conditions warrant) the evacuation areas and/or control zones set up by the first responder.

3-2.4 Given a specific hazardous material and the reference materials available to the hazardous materials technician, describe the symptoms of exposure to that hazardous material.

3-2.5 Describe the symptoms of heat stress.

3-2.6 Describe the precautions to be observed and followed when responding to incidents for each of the hazardous materials classifications.

3-3 Resources and Planning. The hazardous materials technican shall be capable of the following.

3-3.1* Identify the governmental and private sector agencies that offer assistance during a hazardous materials incident, including their role and the type of assistance or resources available.

3-3.2 Given a report from a local facility supplied in accordance with a federal, state, or local right-to-know legislative requirement, determine what additional information about the facility may be needed by the authority having jurisdiction and explain how the hazardous materials technician can obtain the information.

3-4 Incident Management. The hazardous materials technician shall be capable of the following.

3-4.1 Given the local hazardous materials contingency plan and standard operating procedures, describe the functions and responsibilities of the hazard sector personnel within the Incident Command System. Functions include:

(a) Safety

(b) Entry/reconnaissance

(c) Information/research

(d) Resources

(e) Decontamination

(f) Operations.

3-5 Recognition of Hazardous Materials. The hazardous materials technician shall be capable of the following.

3-5.1 List and define each of the hazardous materials classifications, describe the basic hazards posed by each, and give examples of each.

3-6 Classification, Identification, and Verification. The hazardous materials technician shall be capable of the following.

3-6.1 Describe the source of, definition of, and circumstances for the use of the following terms:

(a) Hazardous substances

(b) Hazardous chemicals

(c) Extremely hazardous substances

(d) Hazardous wastes

(e) Hazardous materials

(f) Dangerous goods.

3-6.2 Describe the advantages and disadvantages of each of the following information sources:

(a) MSDS

(b) Reference guidebooks

(c) Hazardous materials data bases

(d) Technical information centers (e.g., CHEMTREC, National Response Center)

(e) Technical information specialists

(f) Monitoring equipment.

3-6.3 Given a specific hazardous material and using the information sources available to the hazardous materials technician, demonstrate extracting appropriate information about the physical characteristics and chemical properties, hazards, and suggested response considerations for that material.

3-6.4 Describe an analysis process for identification of unknown hazardous materials.

3-6.5 Given a label for a radioactive material, identify the vertical bars, the contents, and the activity and transport index, and define the meaning of each.

3-7 Chemistry and Toxicology of Hazardous Materials. The hazardous materials technician shall be capable of the following.

3-7.1 Define the following chemical and physical terms and explain their use in the risk assessment process:

(a) Air reactivity
(b) Catalysts and inhibitors
(c) Concentration
(d) Corrosivity
(e) Critical temperature and pressure
(f) Instability
(g) Oxidation ability
(h) pH
(i) Polymerization
(j) Radioactivity
(k) Self-accelerating decomposition temperature (SADT)
(l) Strength
(m) Sublimation
(n) Surface tension
(o) Viscosity
(p) Volatility
(q) Water reactivity.

3-7.2 Define the following toxicological terms and explain their use in the risk assessment process:

(a) Threshold limit value (TLV-TWA)
(b) Lethal concentration and doses (LD 50/100)
(c) Parts per million/billion (ppm/ppb)
(d) Immediately dangerous to life and health (IDLH)
(e) Permissible exposure limit (PEL)
(f) Short-term exposure limit (TLV-STEL)
(g) Ceiling level (TLV-C).

3-8 Hazard and Risk Assessment. The hazardous materials technician shall be capable of the following.

3-8.1 Identify and explain the risk assessment considerations to be made at a hazardous materials incident, including the following:

(a) Size and type of container and quantity involved;
(b) Nature of the container stress;
(c) Potential behavior of the container and its contents;
(d) Level of resources available (e.g., personal protective equipment, training, etc.);
(e) Exposure potential to people, property, environment, and systems; and
(f) Weather conditions and terrain.

3-8.2 Identify the various monitoring equipment used to monitor and detect the following hazards:

(a) Toxicity
(b) Flammability
(c) Reactivity
(d) Radioactivity
(e) Corrosivity
(f) Oxygen deficiency.

3-8.3 Demonstrate the purpose, operation (including interpretation of results and operational and calibration checks), and limitations for the following basic monitoring equipment, in addition to any other monitoring equipment provided to the hazardous materials technician by the authority having jurisdiction:

(a) Combustible gas detector
(b) Oxygen meter
(c) Colorimetric tubes
(d) pH papers and strips
(e) CO meter
(f) Radiation detection instruments.

3-8.4 Demonstrate the field maintenance and testing procedures, including operational and calibration checks, for the basic monitoring equipment provided to the hazardous materials technician by the authority having jurisdiction.

3-9 Personal Protective Equipment. The hazardous materials technician shall be capable of the following.

3-9.1 Given a hazardous materials incident, select the appropriate personal protective equipment to be used in that incident.

3-9.2 Define the following terms as associated with chemical protective clothing:

(a) Degradation
(b) Penetration
(c) Permeation.

3-9.3 Demonstrate how to interpret a chemical compatibility chart for chemical protective clothing and the limitations and deficiencies of compatibility charts.

3-9.4 Demonstrate the maintenance, inspection, and storage procedures for Level B and C chemical protective clothing, in addition to any other specialized protective equipment provided by the authority having jurisdiction.

3-9.5 Demonstrate the proper donning, doffing, and usage of Level B and C chemical protective clothing, in addition to any other specialized protective equipment provided by the authority having jurisdiction.

3-9.6 Describe the four levels of protection as found in the EPA/OSHA publications, list the equipment required for each level, and describe the conditions under which each level is used.

3-9.7 Describe at least four conditions that indicate material degradation of chemical protective clothing after chemical contact.

3-9.8 Demonstrate the use of the following types of respiratory protection when provided by the authority having jurisdiction:

(a) Air purifying respirator
(b) Supplied air respirator (air line respirator).

3-9.9 Describe the factors to be considered in selecting

the proper respiratory protection at a hazardous materials incident.

3-10 Hazardous Materials Control. The hazardous materials technician shall be capable of the following.

3-10.1 Describe the basic design and construction features of containers and bulk and nonbulk packaging used to store, process, or transport hazardous materials, which would include, but not be limited to:

(a) Bags
(b) Bottles
(c) Boxes
(d) Cans
(e) Carboys
(f) Cylinders
(g) Drums
(h) Fixed tanks
(i) Intermodal portable tanks
(j) Piping
(k) Tank cars
(l) Tank trucks and trailers.

3-10.2* Describe the considerations to be evaluated in implementing hazardous materials control procedures.

3-10.3 Based on the properties of the hazardous materials classes, describe the methods and precautions for controlling releases from nonbulk and bulk packaging and containers of hazardous materials.

3-10.4 Based on the hazardous materials classifications, demonstrate the proper selection and use of tools, equipment, and materials available to the hazardous materials technician by the authority having jurisdiction for the control of hazardous materials releases from nonbulk and bulk packaging and containers.

3-10.5 Describe the maintenance and testing procedures for the tools, equipment, and materials provided to the hazardous materials technician by the authority having jurisdiction for the control of hazardous materials releases.

3-11 Decontamination. The hazardous materials technician shall be capable of the following.

3-11.1 Identify and describe the advantages and limitations of each of the following methods of decontamination:

(a) Absorption
(b) Adsorption
(c) Chemical degradation
(d) Dilution
(e) Disposal
(f) Isolation
(g) Neutralization
(h) Solidification.

3-11.2 Describe the considerations associated with the placement, location, and setup of the decontamination site.

3-11.3 Identify sources of technical information for performing decontamination operations.

3-11.4 Given a simulated hazardous materials incident and using available local resources, demonstrate the implementation of the decontamination procedure.

3-12 Termination Procedures. The hazardous materials technician shall be capable of the following.

3-12.1 Describe the activities required in terminating the emergency phase of a hazardous materials incident.

3-12.2 Given a simulated hazardous materials incident, describe the preparation of the locally required report with supporting documentation as necessary.

3-12.3 Identify the considerations associated with conducting a critique of a hazardous materials incident.

3-13 Educational and Medical Requirements. Reserved.

Chapter 4 Hazardous Materials Specialist

4-1 General.

4-1.1 The hazardous materials specialist shall meet all of the objectives indicated for the first responder and hazardous materials technician. In addition, that person shall meet the training and medical surveillance program requirements in accordance with federal Occupational Safety and Health Administration (OSHA) or U.S. Environmental Protection Agency (EPA) regulations.

4-1.2 Goal. The goal at the hazardous materials specialist level shall be to provide those persons, whose duties involve response to specialized hazardous materials problems, with the following competencies to respond safely to hazardous materials incidents:

(a) The ability to develop a site safety plan;

(b) The ability to classify, identify, and verify known and unknown materials by using advanced monitoring equipment provided by the authority having jurisdiction;

(c) The ability to function within an assigned role in the Incident Command System;

(d) The ability to select and use Level A protection in addition to any other specialized personal protective equipment provided to the hazardous materials specialist by the authority having jurisdiction;

(e) The ability to perform hazard and risk assessments involving multiple hazards;

(f) The ability to perform specialized hazardous materials control operations within the capabilities of the resources and personal protective equipment available;

(g) The ability to develop and implement specialized decontamination procedures;

(h) The ability to implement record keeping and perform termination procedures; and

(i) An understanding of the chemical, toxicological, biological, and radiological terms and their behavior.

4-2 Safety. The hazardous materials specialist shall be capable of the following.

4-2.1 Given changes during a hazardous materials incident, determine the adjustment of control zone boundaries and the area of evacuation.

4-2.2 Given a simulated hazardous materials incident, develop a site safety plan.

4-2.3 Given a simulated hazardous materials incident, function as the safety officer.

4-3 Resources and Planning. The hazardous materials specialist shall be capable of the following.

4-3.1 Identify the primary federal, state, regional, and local government agencies and describe their regulatory authority and regulations pertaining to the production, transportation, storage, and use of hazardous materials, and the disposal of hazardous wastes.

4-3.2 Given a facility that uses, stores, or manufactures hazardous materials, or a transportation corridor, perform a hazard analysis and develop a plan to handle hazardous materials incidents, and recommend what may be needed to reduce the risk to a level within the capabilities of available resources.

4-4 Incident Management. The hazardous materials specialist shall be capable of the following.

4-4.1 Given a simulated hazardous materials incident, the hazardous materials specialist shall:

(a) Perform the duties as the hazard sector officer and coordinate all activities of that sector; and

(b) Evaluate information received from on-site and off-site sources and implement appropriate action in response to the information received.

4-5 Recognition of Hazardous Materials. Reserved.

4-6 Classification, Identification, and Verification. The hazardous materials specialist shall be capable of the following.

4-6.1 Demonstrate the ability to select and interpret pertinent data on each hazardous material, using information sources provided to the hazardous materials specialist.

4-6.2 Given at least three unknown chemicals, one of which is a solid, one a liquid, and one a gas, demonstrate the ability to identify or classify, using resources available to the hazardous materials specialist.

4-6.3 Identify at least three references available that indicate the effects of mixing various chemicals.

4-7 Chemistry and Toxicology of Hazardous Materials. The hazardous materials specialist shall be capable of the following.

4-7.1 Define the following chemical and physical terms and explain their importance in the risk assessment process:

(a) Compound, mixture
(b) Halogenated hydrocarbon
(c) Ionic bond, covalent bond
(d) Salt, nonsalt
(e) Saturated, unsaturated hydrocarbon, aromatics
(f) Solution, slurry
(g) Water miscible, immiscible.

4-7.2 Define the following toxicological terms and explain their importance in the risk assessment process:

(a) Chemical interactions
(b) Dose-response relationship
(c) Effects: local, systemic
(d) Exposure: acute, subacute, chronic
(e) Routes of entry: ingestion, absorption, inhalation.

4-7.3 Define and explain the following radiological terms:

(a) Half-life
(b) Time, distance, shielding.

4-8 Hazard and Risk Assessment. The hazardous materials specialist shall be capable of the following.

4-8.1 Given a specific hazardous materials classification, describe the properties and expected behavior emphasizing safety, decision making, and size-up considerations.

4-8.2 Demonstrate the purpose, operation (including interpretation of results and operational and calibration checks), and limitations of the following specialized monitoring equipment, in addition to that provided to the hazardous materials specialist by the authority having jurisdiction:

(a) Organic vapor analyzer
(b) Passive dosimeter
(c) Personal air monitoring equipment
(d) Photoionization detectors.

4-8.3 Demonstrate the field maintenance and testing procedures for the monitoring equipment provided to the hazardous materials specialist by the authority having jurisdiction.

4-9 Personal Protective Equipment. The hazardous materials specialist shall be capable of the following.

4-9.1 Identify the three types of Level A chemical protective clothing and describe the advantages and disadvantages of each type. (Reference: Type 1, SCBA worn inside the suit; Type 2, SCBA worn outside the suit; and Type 3, breathing air supplied by air line).

4-9.2 Describe the physical and psychological stresses that can affect users of specialized protective clothing.

4-9.3 Describe the testing and maintenance and storage procedures for the type(s) of Level A chemical protective

clothing furnished to the hazardous materials specialist by the authority having jurisdiction.

4-9.4 Demonstrate the correct method of donning and doffing and usage of the type(s) of Level A chemical protective clothing, including communication equipment, furnished to the hazardous materials specialist by the authority having jurisdiction.

4-9.5 Describe safety procedures for personnel wearing Level A chemical protective clothing.

4-9.6 Given a hazardous materials incident, determine the selection of chemical protective clothing.

4-9.7 Demonstrate the ability to log completely the use, repair, and testing of chemical protective clothing.

4-9.8 Given an incident involving a hazardous material that is flammable and corrosive and has other hazardous properties, describe the considerations to be evaluated for protecting personnel against a flash fire when wearing chemical protective clothing.

4-9.9 Identify three methods of cooling Level A chemical protective clothing and describe the advantages and disadvantages of each method.

4-10 Hazardous Materials Control. The hazardous materials specialist shall be capable of the following.

4-10.1 Describe the purpose of, equipment required, procedures for, and safety precautions used with the following techniques for hazardous materials control:

(a) Transferring liquids and gases
(b) Flaring liquids and gases
(c) Hot tapping
(d) Vent and burn.

4-10.2 Describe the maintenance and testing procedures for the tools and equipment provided to the hazardous materials specialist by the authority having jurisdiction for the control of hazardous materials releases.

4-11 Decontamination. The hazardous materials specialist shall be capable of the following.

4-11.1 Given a simulated hazardous materials incident, and using available local resources, obtain the necessary technical information to develop a decontamination procedure.

4-12 Termination Procedures. The hazardous materials specialist shall be capable of the following.

4-12.1 Given a simulated incident, prepare any locally required incident reports with supporting documentation.

4-12.2 Given a simulated incident, conduct a critique.

4-13 Educational and Medical Requirements. Reserved.

Chapter 5 Referenced Publications

5-1 The following documents or portions thereof are referenced within this standard and shall be considered part of the requirements of this document. The edition indicated for each reference is the current edition as of the date of the NFPA issuance of this document.

5-1.1 NFPA Publication. National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.

NFPA 704-1985, *Standard System for the Identification of Fire Hazards of Materials.*

5-1.2 Other Publications.

5-1.2.1 US Government Publications. US Government Printing Office, Superintendent of Documents, Washington, DC 20402.

Title 29 CFR Part 1910.120
Title 29 CFR Part 1910.1200
Title 40 CFR Part 261.33
Title 40 CFR Part 302
Title 40 CFR Part 355
Title 49 CFR Parts 170-179

Emergency Response Guidebook-1987, U.S. Department of Transportation DOT P 5800.4

Appendix A

This Appendix is not a part of the requirements of this NFPA document, but is included for information purposes only.

A-1-3 Hazardous Materials Definitions. There are many definitions and descriptive names being used for the term hazardous materials, each of which depends on the nature of the problem being addressed.

Unfortunately, there is no one list or definition that covers everything. The United States agencies involved, as well as state and local governments, have different purposes for regulating hazardous materials that, under certain circumstances, pose a risk to the public or the environment.

(a) *Hazardous Materials.* The United States Department of Transportation (DOT) uses the term *hazardous materials*, which covers eight hazard classes, some of which have subcategories called classifications, and a ninth class covering other regulated materials (ORM). DOT includes in its regulations hazardous substances and hazardous wastes as an ORM-E, both of which are regulated by the Environmental Protection Agency (EPA), if their inherent properties would not otherwise be covered.

(b) *Hazardous Substances.* EPA uses the term *hazardous substance* for the chemicals which, if released into the environment above a certain amount, must be reported and, depending on the threat to the environment, federal involvement in handling the incident can be authorized. A list of the hazardous substances is published in 40 CFR Part 302, Table 302.4.

(c) *Extremely Hazardous Substances.* EPA uses the term *extremely hazardous substance* for the chemicals which must be reported to the appropriate authorities if released above the threshold reporting quantity. Each substance has a threshold reporting quantity. The list of extremely hazardous substances is identified in Title III of Superfund Amendments and Reauthorization Act (SARA) of 1986 (40 CFR Part 355).

(d) *Toxic Chemicals.* EPA uses the term *toxic chemical* for chemicals whose total emissions or releases must be reported annually by owners and operators of certain facilities that manufacture, process, or otherwise use a listed toxic chemical. The list of toxic chemicals is identified in Title III of SARA.

(e) *Hazardous Wastes.* EPA uses the term *hazardous wastes* for chemicals that are regulated under the Resource, Conservation and Recovery Act (40 CFR Part 261.33). Hazardous wastes in transportation are regulated by DOT (49 CFR Parts 170-179).

(f) *Hazardous Chemicals.* The United States Occupational Safety and Health Administration (OSHA) uses the term *hazardous chemical* to denote any chemical that would be a risk to employees if exposed in the work place. Hazardous chemicals cover a broader group of chemicals than the other chemical lists.

(g) *Hazardous Substances.* OSHA uses the term *hazardous substance* in 29 CFR Part 1910.120, which resulted from Title I of SARA and covers emergency response. OSHA uses the term differently than EPA. Hazardous substances, as used by OSHA, cover every chemical regulated by both DOT and EPA.

A-2-2.2.2 The six ways are: thermal, radioactive, asphyxiation, chemical, etiologic, and mechanical. There may also be psychological harm.

A-2-2.2.3 These are: contact, absorption, inhalation, and ingestion. Absorption includes entry through the eyes and through punctures.

A-2-2.2.6 These precautions are intended to apply to the responder as well as to the victim.

A-2-2.5.2 Six groups of clues for detecting the presence of hazardous materials are: occupancy and/or location, container shapes, markings and colors, placards and labels, shipping papers and material safety data sheets (MSDS), and senses.

A-2-2.6.1 Hazardous materials (known as dangerous goods in Canada) are substances capable of creating harm to people, property, or the environment. Although certain materials are classified differently in the two countries, they are still hazardous and should be dealt with accordingly. (*See A-1-3.*)

A-2-2.6.3 Sources of specific information to help identify hazardous materials include: MSDS's, reference guidebooks, hazardous materials data bases, technical information centers, technical information specialists, and monitoring equipment.

A-2-3.9.1 "Employees engaged in emergency response and exposed to hazardous substances shall wear positive pressure self-contained breathing apparatus while engaged in emergency response until such time that the individual in charge of the ICS determines through the use of air monitoring that a decreased level of respiratory protection will not result in hazardous exposures to employees." (OSHA 1910.120, Subpart L, 4iiD.)

A-3-2.1 Refer to NIOSH/OSHA/USCG/EPA *Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities*, October 1985. Also consult 29 CFR 1910.120, *Hazardous Waste Operations and Emergency Response, Final Rule*, for site safety considerations.

A-3-3.1 This would include off-site analytical support in and around the area of the local authority having jurisdiction.

A-3-10.2 This should include, but not be limited to, the following control methods: diking, damming, diversion, retention, absorption, directing, dispersing, dilution, plugging, and patching. (*See the Haz Mat Response Team Spill and Leak Guide from Fire Protection Publications, Oklahoma State University.*)

Appendix B Hazardous Materials Management

This Appendix is not a part of the requirements of this NFPA document, but is included for information purposes only.

B-1 Incident Commander.

B-1.1 Role.

(a) Responsible for the direction and coordination of all aspects of the incident, from initial response through stabilization.

(b) Operates within the scope of an integrated emergency management plan.

(c) Operates under clear procedures for notification and utilization of nonlocal resources (including private, and state and federal government sector personnel).

(d) Directs resources (private, governmental, and others) with expected task assignments and on-scene activities, based on their capabilities.

(e) Provides management overview, technical review, and logistical support to private and government sector personnel.

(f) Provides focal point for information transfer to media and local elected officials.

(g) Provides subsequent documentation of the hazardous materials incident.

(h) Advises on the reporting requirements of federal, state, and local agencies.

(i) Conducts a critique of the incident.

B-1.2 Training. The incident commander has completed at least first responder qualifications and maintains retraining requirements.

B-2 Private Sector Personnel. The private sector is likely to respond with personnel who fit into two distinct categories:

Private Sector Manager — Has overall responsibility for the direction and coordination of all activities of his/her own organization in conjunction with activities of the rest of the response community; will generally remain outside the hot zone.

Private Sector Technician — Functions as technical resource to private sector manager; is qualified to work within perimeter of hot zone.

B-2.1 Private Sector Manager.

B-2.1.1 Role.

(a) Provides management review of all company and contractor personnel employed.

(b) Reports to command post upon arrival.

(c) Provides detailed written work proposal and summaries to incident commander as requested.

(d) Obtains consensus support from incident commander on all phases of activity before proceeding with those activities.

(e) Provides safety and health program for company personnel.

(f) Ensures that company and contractor personnel have the appropriate personal protective equipment necessary for activities within the hot zone.

(g) Assesses the potential of both short- and long-term effects of a hazardous materials incident, including environmental protection considerations.

(h) Remains on the scene until incident is stabilized.

(i) Remains as contact person until incident is terminated.

(j) Operates under detailed company contingency plan.

(k) Has authority to commit company resources and money to support response effort.

B-2.1.2 Training. The private sector manager has completed the first responder level of training and maintains retraining requirements.

B-2.2 Private Sector Technician.

B-2.2.1 Role. If the private sector technician responds without the private sector manager, the private sector technician will also assume the role of and perform as the private sector manager.

(a) Reports to private sector manager upon arrival who reports same to incident commander.

(b) Provides technical support as requested from incident commander through private sector manager.

(c) Works in appropriate protective equipment within the perimeter of the hot zone, as requested by incident commander through private sector manager.

(d) Operates under detailed safety and health program and company contingency plan.

(e) Provides detailed work proposal and summaries to private sector manager, who relays that information to incident commander.

(f) Obtains consensus support from incident commander through private sector manager on all phases of activities before proceeding with those activities.

B-2.2.2 Training. The private sector technician has completed the first responder through hazardous material technician levels of training and maintains retraining requirements. This training may be specifically oriented towards those products or containers handled.

B-3 Government Sector. The government sector (state and federal) is likely to respond with personnel who fit into two distinct categories:

Government Sector Manager — Has overall responsibility for the direction and coordination of all activities of own organization in conjunction with activities of rest of response community; will generally remain outside the hot zone perimeter.

Government Sector Technician — Functions as technical resource to government sector manager; will be qualified to work within perimeter of hot zone.

B-3.1 Government Sector Manager.

B-3.1.1 Role.

(a) Provides management review of all government and contractor personnel employed.

(b) Reports to command post upon arrival.

(c) Provides detailed written work proposal and summaries to incident commander, as requested.

(d) Obtains consensus support from incident commander on all phases of activity before proceeding with those activities.

(e) Provides safety and health program for governmental personnel.

(f) Ensures that governmental personnel have the appropriate personal protective equipment necessary for activities within hot zone.

(g) Assesses the potential of both short- and long-term effects of a hazardous materials incident, including environmental protection considerations.

(h) Remains on the scene until incident is stabilized.

(i) Remains the contact person until incident is terminated.

(j) Operates under detailed government contingency plan.

(k) Has authority to commit government resources and money to support response effort.

B-3.1.2 Training. The government sector manager has completed the first responder level of training and maintains retraining requirements.

B-3.2 Government Sector Technician.

B-3.2.1 Role. If the government sector technician responds without the government sector manager, the government sector technician will also assume role of and perform as the government sector manager.

(a) Reports to government sector manager upon arrival, who reports same to incident commander.

(b) Provides technical support as requested from incident commander through government sector manager.

(c) Works in appropriate protective equipment within the perimeter of the hot zone, as requested by incident commander through government sector manager.

(d) Operates under detailed safety and health program and government contingency plan.

(e) Provides detailed work proposal and summaries to government sector manager, who relays that information to incident commander.

(f) Obtains consensus support from incident commander through government sector manager on all phases of activities before proceeding with those activities.

B-3.2.2 Training. The government sector technician has completed the first responder through hazardous material technician levels of training.

Appendix C Referenced Publications

C-1 The following documents or portions thereof are referenced within this standard for informational purposes only and thus are not considered part of the requirements of this document. The edition indicated for each reference is the current edition as of the date of the NFPA issuance of this document.

C-1.1 National Fire Academy Publication. National Fire Academy, Federal Emergency Management Agency, Emmitsburg, MD.

Hazardous Materials Incident Analysis.

C-1.2 Oklahoma State University, Fire Protection Publications, Stillwater, OK 74078-0008.

Haz Mat Response Team Spill and Leak Guide, 1984.

C-1.3 U.S. Government Publication. U.S. Government Printing Office, Superintendent of Documents, Washington, DC 20402.

Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities.

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SUBMITTING PROPOSALS ON NFPA TECHNICAL COMMITTEE DOCUMENTS

Contact NFPA Standards Administration for final date for receipt of proposals on a specific document.

INSTRUCTIONS

Please use the forms which follow for submitting proposed amendments. Use a separate form for each proposal.

1. For each document on which you are proposing amendment indicate:
   (a) The number and title of the document
   (b) The specific section or paragraph.

2. Check the box indicating whether or not this proposal recommends new text, revised text, or to delete text.

3. In the space identified as "Proposal" include the wording you propose as new or revised text, or indicate if you wish to delete text.

4. In the space titled "Statement of Problem and Substantiation for Proposal" state the problem which will be resolved by your recommendation and give the specific reason for your proposal including copies of tests, research papers, fire experience, etc. If a statement is more than 200 words in length, the technical committee is authorized to abstract it for the Technical Committee Report.

5. Check the box indicating whether or not this proposal is original material, and if it is not, indicate source.

6. If supplementary material (photographs, diagrams, reports, etc.) is included, you may be required to submit sufficient copies for all members and alternates of the technical committee.

NOTE: The NFPA Regulations Governing Committee Projects in Paragraph 10-10 state: Each proposal shall be submitted to the Council Secretary and shall include:

(a) identification of the submitter and his affiliation (Committee, organization, company) where appropriate, and

(b) identification of the document, paragraph of the document to which the proposal is directed, and

(c) a statement of the problem and substantiation for the proposal, and

(d) proposed text of proposal, including the wording to be added, revised (and how revised), or deleted.