

NFPA

1500TM

Standard on
Fire Department Occupational Safety,
Health, and Wellness Program

2021



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NFPA 1500™

Standard on

Fire Department Occupational Safety, Health, and Wellness Program

2021 Edition

This edition of NFPA 1500™, *Standard on Fire Department Occupational Safety, Health, and Wellness Program*, was prepared by the Technical Committee on Fire Service Occupational Safety and Health and acted on by the NFPA membership during the 2020 NFPA Technical Meeting held June 8–29. It was issued by the Standards Council on August 11, 2020, with an effective date of August 31, 2020, and supersedes all previous editions.

This document has been amended by one or more Tentative Interim Amendments (TIAs) and/or Errata. See “Codes & Standards” at www.nfpa.org for more information.

This edition of NFPA 1500 was approved as an American National Standard on August 31, 2020.

Origin and Development of NFPA 1500

The first edition of NFPA 1500 was published in 1987 because there was no consensus standard for an occupational safety and health program for the fire service. Fire service organizations were being increasingly subjected to regulations developed for general industry that did not provide for many of the specific needs and concerns of an organization involved in the delivery of emergency services. Direct line-of-duty deaths were documented and reported, but there was a growing concern with the number of fire fighters who suffered disabling injuries or developed occupational diseases that had debilitating or fatal consequences. Following the first edition, revised editions were published in 1992, 1997, and 2002.

For the 2007 edition, the technical committee, working from data provided from NFPA’s Data Analysis and Research Division and NIOSH Fire Fighter Investigation reports, carefully reviewed the entire document, including the associated annex material, and updated many areas to reflect current best practices. Requirements were reorganized in some areas to make the document more user-friendly.

Among the changes made were revising the section on risk management and inserting additional explanation in the annex. A new section on appointment of a health and safety officer was added, and sections that duplicated the responsibilities of the health and safety officer in NFPA 1521, *Standard on Operations and Training for Technical Search and Rescue Incidents*, were removed.

Chapter 5 was reorganized and revised to reflect not only the need of members to have skills and knowledge in performing day-to-day tasks but also the need for ongoing professional development.

In Chapter 6, requirements and annex material were added to support improved vehicle response operations with an emphasis on safe arrival at the scene.

Requirements for providing and using protective ensembles appropriate for technical rescue operations and chemical and biological terrorism incidents that went into the 2002 edition as a TIA were updated and incorporated, as were other requirements for personal protective ensembles.

New sections on traffic incidents, establishing control zones, and fitness for duty evaluations were added.

For the 2013 edition, the committee updated many of the references and referenced materials to ensure consistency between this document and other projects. Some of those other projects had to do with personal protective equipment (PPE), fire department apparatus, and respiratory protection. The committee included new requirements for the training, use, and limitations of PPE. The committee also developed new requirements to include not only the ensemble but also ensemble elements, which meant anything added to the ensemble as part of the requirements. The cleaning and care of PPE as well as station/work uniforms was also addressed with new or updated

requirements. For fire department apparatus, the committee brought the related requirements in this document in line with requirements in the respective projects. Some issues that were addressed were the inclusion of a vehicle data recorder (VDR) and a driver training program and requirements, as well as requirements for the wearing of helmets in an enclosed cab. Another issue was unintentional hose deployments while the fire department apparatus was driving on roadways. The committee developed text to ensure that the fire department took steps to ensure that this would not happen. The committee also looked at the issue of buddy breathing as it relates to self-contained breathing apparatus (SCBA) use, and it developed cleaner text around the use of a buddy breathing system. The committee included new requirements stressing the need for a risk assessment to be conducted at every incident based on the nature of the incident and to also recognize the need for specialized crew members based on that incident. Another important update made in the 2013 edition was the use of the term *mayday* as a requirement when a fire department member finds him- or herself requiring immediate assistance. Lastly, the committee rewrote Chapters 11 and 12, both of which concern fire fighter health and wellness and exposure to atypical stressful events.

For the 2018 edition, the committee made several significant updates, including ruling out the approved use of external riding positions in wildland apparatus from Section 14.4 of NFPA 1906, *Standard for Wildland Fire Apparatus*. The committee also chose to strengthen the language prohibiting riding on any external section of an apparatus and requiring all occupants to be seat belted in vehicles. Also included was a section requiring the provision of appropriately fitted ballistic protection for any department members who respond to and/or are exposed to risks during civil unrest, active shooter incidents, or similar events where there are reasonably foreseen threats. Language requiring unified command for the purpose of managing incidents was revised and strengthened. The committee was reviewing research projects being conducted for the next revisions of the standard, but because these projects were incomplete, revisions were not made to this 2018 edition. Some of those research projects concern PPE, fire department apparatus, and respiratory protection. The committee included new requirements for the training, use, and limitations of PPE. The committee developed new requirements to include not only the ensemble but also ensemble elements, which would include anything that has been added to the ensemble as part of the requirements. The cleaning and care of PPE as well as station/work uniforms was also addressed with new or updated requirements. Lastly, as with the 2013 edition, the committee rewrote Chapters 11 and 12, both of which cover fire fighter health and wellness and exposure to atypical stressful events, an ever-evolving area.

For the 2021 edition, the technical committee has used the latest research and information about cleaning of equipment and personnel to enhance those sections of the standard. In Chapter 14, the term *preliminary exposure reduction* provides requirements that include science-based techniques for fire departments and their members to clean equipment and themselves after an exposure to a routine fire incident. Preliminary exposure reduction is separate from decontamination from a hazardous materials incident. Along those lines, the technical committee added more exposure reporting and tracking requirements for members and departments. It is intended that these requirements will create detailed records for members of when and how long they were exposed to contaminants — records that could assist in future research, medical needs, diagnoses, and more.

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Committee Scope: This Committee shall have primary responsibility for documents on occupational safety and incident command in the working environment of the fire service, not including hazardous materials or cross functional events. The committee shall also have responsibility for documents related to medical requirements for firefighters, and the professional qualifications for fire department safety officer. It shall coordinate its work with NFPA technical committees dealing with emergency responder safety and wellness.

Contents

Chapter 1 Administration	1500- 7	7.9 Protective Ensembles for Technical Rescue Operations.	1500- 22
1.1 Scope.	1500- 7	7.10 Protective Clothing and Equipment for Surface Water Operations.	1500- 23
1.2 Purpose.	1500- 7	7.11 Protective Clothing for Fire Investigators.	1500- 23
1.3 Application.	1500- 7	7.12 Respiratory Protection Program.	1500- 23
1.4 Equivalency.	1500- 7	7.13 Breathing Air.	1500- 24
1.5 Adoption Requirements.	1500- 7	7.14 Respiratory Protection Equipment.	1500- 24
Chapter 2 Referenced Publications	1500- 7	7.15 Fit Testing.	1500- 24
2.1 General.	1500- 7	7.16 Using Respiratory Protection.	1500- 24
2.2 NFPA Publications.	1500- 7	7.17 SCBA Cylinders.	1500- 25
2.3 Other Publications.	1500- 8	7.18 Personal Alert Safety System (PASS).	1500- 25
2.4 References for Extracts in Mandatory Sections.	1500- 9	7.19 Life Safety Rope and System Components.	1500- 25
Chapter 3 Definitions	1500- 9	7.20 Face and Eye Protection.	1500- 25
3.1 General.	1500- 9	7.21 Hearing Protection.	1500- 26
3.2 Official NFPA Definitions.	1500- 9	7.22 Ballistic Protective Equipment.	1500- 26
3.3 General Definitions.	1500- 9	7.23 New and Existing Protective Clothing and Protective Equipment.	1500- 26
Chapter 4 Fire Department Administration	1500- 13	Chapter 8 Emergency Operations	1500- 26
4.1 Fire Department Organizational Statement. ..	1500- 13	8.1 Incident Management.	1500- 26
4.2 Risk Management Plan.	1500- 14	8.2 Communications.	1500- 27
4.3 Safety and Health Policy.	1500- 14	8.3 Crew Resource Management (CRM) During Emergency Operations.	1500- 27
4.4 Roles and Responsibilities.	1500- 14	8.4 Risk Management During Emergency Operations.	1500- 27
4.5 Occupational Safety and Health Committee.	1500- 14	8.5 Personnel Accountability During Emergency Operations.	1500- 28
4.6 Records.	1500- 15	8.6 Members Operating at Emergency Incidents.	1500- 28
4.7 Appointment of the Health and Safety Officer.	1500- 15	8.7 Emergency Incident Hazard Control Zones. .	1500- 29
Chapter 5 Training, Education, and Professional Development	1500- 15	8.8 Rapid Intervention for Rescue of Members. ..	1500- 30
5.1 General Requirements.	1500- 15	8.9 Rehabilitation During Emergency Operations.	1500- 31
5.2 Member Qualifications.	1500- 16	8.10 Scenes of Violence, Civil Unrest, or Terrorism.	1500- 31
5.3 Training Requirements.	1500- 16	8.11 Post-Incident Analysis.	1500- 32
5.4 Special Operations Training.	1500- 17	Chapter 9 Traffic Incident Management	1500- 32
5.5 Member Proficiency.	1500- 17	9.1 Reserved.	1500- 32
5.6 Training Activities.	1500- 17	9.2 Emergency Operations at Traffic Incidents. ..	1500- 32
Chapter 6 Fire Apparatus, Equipment, and Drivers/Operators	1500- 17	9.3 Placement of Apparatus and Warning Devices.	1500- 32
6.1 Fire Department Apparatus.	1500- 17	9.4 Use of Apparatus as a Blocking Device.	1500- 32
6.2 Drivers/Operators of Fire Department Apparatus.	1500- 18	Chapter 10 Facility Safety	1500- 32
6.3 Riding in Fire Apparatus.	1500- 18	10.1 Safety Standards.	1500- 32
6.4 Inspection, Maintenance, and Repair of Fire Apparatus.	1500- 19	10.2 Inspections.	1500- 33
6.5 Tools and Equipment.	1500- 19	10.3 Maintenance and Repairs.	1500- 33
Chapter 7 Protective Clothing and Protective Equipment	1500- 19	10.4 Station Alerting.	1500- 33
7.1 General.	1500- 19	10.5 Contamination Control Inside Facilities.	1500- 33
7.2 Protective Clothing for Structural Fire Fighting.	1500- 20	Chapter 11 Medical and Physical Requirements	1500- 33
7.3 Protective Clothing for Proximity Fire-Fighting Operations.	1500- 20	11.1 Medical Requirements.	1500- 33
7.4 Protective Clothing for Emergency Medical Operations.	1500- 21	11.2 Physical Performance Requirements.	1500- 34
7.5 Protective Clothing and Equipment for Fire Inspections.	1500- 21	11.3 Health and Fitness.	1500- 34
7.6 Chemical-Protective Clothing for Hazardous Materials Emergency Operations.	1500- 21	11.4 Confidential Health Data Base.	1500- 34
7.7 Inspection, Maintenance, and Disposal of Chemical-Protective Clothing.	1500- 22	11.5 Infection Control.	1500- 34
7.8 Protective Clothing and Equipment for Wildland Fire Fighting.	1500- 22	11.6 Fire Department Physician.	1500- 34
		11.7 Fitness for Duty Evaluations.	1500- 34
		Chapter 12 Behavioral Health and Wellness Programs	1500- 35
		12.1 Behavioral Health Program.	1500- 35
		12.2 Wellness Program.	1500- 35

Chapter 13	Occupational Exposure to Potentially Traumatic Events	1500– 36	Annex B	Monitoring Compliance with a Fire Service Occupational Safety, Health, and Wellness Program	1500– 64
13.1	General	1500– 36			
Chapter 14	Exposure to Contaminants	1500– 36	Annex C	Building Hazard Assessment	1500– 83
14.1	Training.	1500– 36	Annex D	Risk Management Plan Factors	1500– 83
14.2	Prevention and Mitigation.	1500– 36	Annex E	Selection of Hazardous Materials and CBRN Protective Ensembles	1500– 85
14.3	Risk of Exposure to Contaminants.	1500– 36	Annex F	Sample Facility Inspector Checklists	1500– 92
14.4	Cleaning and Maintenance.	1500– 36	Annex G	Informational References	1500– 97
14.5	Mitigation of Contaminant Exposure.	1500– 36	Index		1500– 100
14.6	Incident Contaminant Reduction and Personal Hygiene.	1500– 36			
14.7	Exposure Reporting Requirements.	1500– 37			
14.8	Exposure Report Retention and Access.	1500– 37			
Annex A	Explanatory Material	1500– 37			

NFPA 1500

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Fire Department Occupational Safety, Health, and Wellness Program

2021 Edition

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

A reference in brackets [] following a section or paragraph indicates material that has been extracted from another NFPA document. Extracted text may be edited for consistency and style and may include the revision of internal paragraph references and other references as appropriate. Requests for interpretations or revisions of extracted text shall be sent to the technical committee responsible for the source document.

Information on referenced and extracted publications can be found in Chapter 2 and Annex G.

Chapter 1 Administration

1.1 Scope. This standard shall contain minimum requirements for a fire service–related occupational safety, health, and wellness program.

1.2 Purpose.

1.2.1 The purpose of this standard shall be to specify the minimum requirements for an occupational safety, health, and wellness program for a fire department.

1.2.2 This standard shall specify safety requirements for those members involved in rescue, fire suppression, emergency medical services, hazardous materials operations, special operations, fire investigations, fire inspections, and related activities.

1.2.3* The authority having jurisdiction shall identify which performance objectives of this standard existing programs or policies meet.

1.2.4 Nothing herein shall be intended to restrict any jurisdiction from exceeding these minimum requirements.

1.3 Application.

1.3.1 The requirements of this standard shall be applicable to organizations providing rescue, fire suppression, emergency medical services, hazardous materials mitigation, special operations, fire investigations, fire inspections, and other emergency services, including public, military, private, and industrial fire departments.

1.3.2 This standard shall not apply to industrial fire brigades that might also be known as emergency brigades, emergency response teams, fire teams, plant emergency organizations, or mine emergency response teams.

1.4 Equivalency.

1.4.1* The authority having jurisdiction shall be permitted to approve an equivalent level of qualifications for the requirements specified in Chapter 5 of this standard.

1.4.2 The fire department shall provide technical documentation to demonstrate equivalency.

1.5 Adoption Requirements.

1.5.1* When this standard is adopted by a jurisdiction, the authority having jurisdiction (AHJ) shall set a date or dates for achieving compliance with the requirements of this standard.

1.5.2* The AHJ shall be permitted to establish a phase-in schedule for compliance with specific requirements of this standard.

1.5.3 The fire department shall adopt a risk management plan as specified in Section 4.2 of this standard.

1.5.3.1 This risk management plan shall include a written plan for compliance with this standard.

Chapter 2 Referenced Publications

2.1 General. The documents or portions thereof listed in this chapter are referenced within this standard and shall be considered part of the requirements of this document.

2.2 NFPA Publications. National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471.

NFPA 10, *Standard for Portable Fire Extinguishers*, 2018 edition.

NFPA 96, *Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations*, 2017 edition.

NFPA 101®, *Life Safety Code®*, 2018 edition.

NFPA 472, *Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents*, 2018 edition.

NFPA 473, *Standard for Competencies for EMS Personnel Responding to Hazardous Materials/Weapons of Mass Destruction Incidents*, 2018 edition.

NFPA 1001, *Standard for Fire Fighter Professional Qualifications*, 2019 edition.

NFPA 1002, *Standard for Fire Apparatus Driver/Operator Professional Qualifications*, 2017 edition.

NFPA 1003, *Standard for Airport Fire Fighter Professional Qualifications*, 2019 edition.

NFPA 1006, *Standard for Technical Rescue Personnel Professional Qualifications*, 2017 edition.

NFPA 1021, *Standard for Fire Officer Professional Qualifications*, 2020 edition.

NFPA 1031, *Standard for Professional Qualifications for Fire Inspector and Plan Examiner*, 2014 edition.

NFPA 1033, *Standard for Professional Qualifications for Fire Investigator*, 2014 edition.

NFPA 1051, *Standard for Wildland Firefighting Personnel Professional Qualifications*, 2020 edition.

NFPA 1072, *Standard for Hazardous Materials/Weapons of Mass Destruction Emergency Response Personnel Professional Qualifications*, 2017 edition.

NFPA 1091, *Standard for Traffic Control Incident Management Personnel Professional Qualifications*, 2019 edition.

NFPA 1143, *Standard for Wildland Fire Management*, 2018 edition.

NFPA 1221, *Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems*, 2019 edition.

NFPA 1403, *Standard on Live Fire Training Evolutions*, 2018 edition.

NFPA 1404, *Standard for Fire Service Respiratory Protection Training*, 2018 edition.

NFPA 1407, *Standard for Training Fire Service Rapid Intervention Crews*, 2020 edition.

NFPA 1451, *Standard for a Fire and Emergency Service Vehicle Operations Training Program*, 2018 edition.

NFPA 1521, *Standard for Fire Department Safety Officer Professional Qualifications*, 2020 edition.

NFPA 1561, *Standard on Emergency Services Incident Management System and Command Safety*, 2020 edition.

NFPA 1581, *Standard on Fire Department Infection Control Program*, 2015 edition.

NFPA 1582, *Standard on Comprehensive Occupational Medical Program for Fire Departments*, 2018 edition.

NFPA 1583, *Standard on Health-Related Fitness Programs for Fire Department Members*, 2015 edition.

NFPA 1584, *Standard on the Rehabilitation Process for Members During Emergency Operations and Training Exercises*, 2015 edition.

NFPA 1670, *Standard on Operations and Training for Technical Search and Rescue Incidents*, 2017 edition.

NFPA 1710, *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments*, 2020 edition.

NFPA 1720, *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments*, 2020 edition.

NFPA 1851, *Standard on Selection, Care, and Maintenance of Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting*, 2020 edition.

NFPA 1852, *Standard on Selection, Care, and Maintenance of Open-Circuit Self-Contained Breathing Apparatus (SCBA)*, 2019 edition.

NFPA 1855, *Standard on Selection, Care, and Maintenance of Protective Ensembles for Technical Rescue Incidents*, 2018 edition.

NFPA 1901, *Standard for Automotive Fire Apparatus*, 2016 edition.

NFPA 1906, *Standard for Wildland Fire Apparatus*, 2016 edition.

NFPA 1911, *Standard for the Inspection, Maintenance, Testing, and Retirement of In-Service Emergency Vehicles*, 2017 edition.

NFPA 1912, *Standard for Fire Apparatus Refurbishing*, 2016 edition.

NFPA 1917, *Standard for Automotive Ambulances*, 2019 edition.

NFPA 1925, *Standard on Marine Fire-Fighting Vessels*, 2018 edition.

NFPA 1931, *Standard for Manufacturer's Design of Fire Department Ground Ladders*, 2020 edition.

NFPA 1932, *Standard on Use, Maintenance, and Service Testing of In-Service Fire Department Ground Ladders*, 2020 edition.

NFPA 1936, *Standard on Rescue Tools*, 2020 edition.

NFPA 1951, *Standard on Protective Ensembles for Technical Rescue Incidents*, 2020 edition.

NFPA 1952, *Standard on Surface Water Operations Protective Clothing and Equipment*, 2015 edition.

NFPA 1961, *Standard on Fire Hose*, 2020 edition.

NFPA 1962, *Standard for the Care, Use, Inspection, Service Testing, and Replacement of Fire Hose, Couplings, Nozzles, and Fire Hose Appliances*, 2018 edition.

NFPA 1964, *Standard for Spray Nozzles and Appliances*, 2018 edition.

NFPA 1971, *Standard on Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting*, 2018 edition.

NFPA 1975, *Standard on Emergency Services Work Clothing Elements*, 2019 edition.

NFPA 1977, *Standard on Protective Clothing and Equipment for Wildland Fire Fighting*, 2016 edition.

NFPA 1981, *Standard on Open-Circuit Self-Contained Breathing Apparatus (SCBA) for Emergency Services*, 2019 edition.

NFPA 1982, *Standard on Personal Alert Safety Systems (PASS)*, 2018 edition.

NFPA 1983, *Standard on Life Safety Rope and Equipment for Emergency Services*, 2017 edition.

NFPA 1984, *Standard on Respirators for Wildland Fire-Fighting Operations*, 2016 edition.

NFPA 1986, *Standard on Respiratory Protection Equipment for Tactical and Technical Operations*, 2017 edition.

NFPA 1989, *Standard on Breathing Air Quality for Emergency Services Respiratory Protection*, 2019 edition.

NFPA 1991, *Standard on Vapor-Protective Ensembles for Hazardous Materials Emergencies and CBRN Terrorism Incidents*, 2016 edition.

NFPA 1992, *Standard on Liquid Splash-Protective Ensembles and Clothing for Hazardous Materials Emergencies*, 2018 edition.

NFPA 1994, *Standard on Protective Ensembles for First Responders to Hazardous Materials Emergencies and CBRN Terrorism Incidents*, 2018 edition.

NFPA 1999, *Standard on Protective Clothing and Ensembles for Emergency Medical Operations*, 2018 edition.

NFPA 3000™, *Standard for an Active Shooter/Hostile Event Response (ASHER) Program*, 2021 edition.

2.3 Other Publications.

2.3.1 ANSI Publications. American National Standards Institute, Inc., 25 West 43rd Street, 4th Floor, New York, NY 10036.

ANSI Z87.1, *Practice for Occupational and Educational Eye and Face Protection*, 2003.

ANSI Z88.2, *Practices for Respiratory Protection*, 1992.

ANSI 107, *American National Standard for High-Visibility Safety Apparel and Accessories*, 2015.

2.3.2 UL Publications. Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, IL 60062-2096.

UL 325, *ANSI/CAN/UL Standard for Door, Drapery, Gate, Louver, and Window Operators and Systems*, 2017.

▲ **2.3.3 US Government Publications.** US Government Publishing Office, 732 North Capitol Street, NW, Washington, DC 20401-0001.

Americans with Disabilities Act (ADA), 2008.

Fair Labor Standards Act (FLSA), 2011.

NIOSH *Standard for Chemical, Biological, Radiological, and Nuclear (CBRN) Open Circuit Self-Contained Breathing Apparatus (SCBA)*, December 2001.

OSHA 3110, *Access to Medical and Exposure Records*, 2001.

Title 29, Code of Federal Regulations, Part 1910.132, “Personal Protective Equipment.”

Title 29, Code of Federal Regulations, Part 1910.134, “Respiratory Protection.”

Title 29, Code of Federal Regulations, Part 1910.1020, “Toxic and Hazardous Substances.”

Title 42, Code of Federal Regulations, Part 84, “Approval of Respiratory Protective Devices.”

▲ **2.3.4 Other Publications.**

Merriam-Webster's Collegiate Dictionary, 11th edition, Merriam-Webster, Inc., Springfield, MA, 2003.

▲ **2.4 References for Extracts in Mandatory Sections.**

NFPA 1, *Fire Code*, 2018 edition.

NFPA 472, *Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents*, 2018 edition.

NFPA 600, *Standard on Facility Fire Brigades*, 2015 edition.

NFPA 921, *Guide for Fire and Explosion Investigations*, 2017 edition.

NFPA 1002, *Standard for Fire Apparatus Driver/Operator Professional Qualifications*, 2017 edition.

NFPA 1006, *Standard for Technical Rescue Personnel Professional Qualifications*, 2017 edition.

NFPA 1404, *Standard for Fire Service Respiratory Protection Training*, 2018 edition.

NFPA 1451, *Standard for a Fire and Emergency Service Vehicle Operations Training Program*, 2018 edition.

NFPA 1521, *Standard for Fire Department Safety Officer Professional Qualifications*, 2015 edition.

NFPA 1561, *Standard on Emergency Services Incident Management System and Command Safety*, 2014 edition.

NFPA 1582, *Standard on Comprehensive Occupational Medical Program for Fire Departments*, 2018 edition.

NFPA 1600®, *Standard on Continuity, Emergency, and Crisis Management*, 2019 edition.

NFPA 1670, *Standard on Operations and Training for Technical Search and Rescue Incidents*, 2017 edition.

NFPA 1710, *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments*, 2016 edition.

NFPA 1901, *Standard for Automotive Fire Apparatus*, 2016 edition.

NFPA 1971, *Standard on Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting*, 2018 edition.

NFPA 1977, *Standard on Protective Clothing and Equipment for Wildland Fire Fighting*, 2016 edition.

NFPA 1981, *Standard on Open-Circuit Self-Contained Breathing Apparatus (SCBA) for Emergency Services*, 2019 edition.

NFPA 1984, *Standard on Respirators for Wildland Fire-Fighting Operations*, 2016 edition.

NFPA 1991, *Standard on Vapor-Protective Ensembles for Hazardous Materials Emergencies and CBRN Terrorism Incidents*, 2016 edition.

NFPA 1994, *Standard on Protective Ensembles for First Responders to Hazardous Materials Emergencies and CBRN Terrorism Incidents*, 2018 edition.

NFPA 5000®, *Building Construction and Safety Code®*, 2018 edition.

Chapter 3 Definitions

3.1 General. The definitions contained in this chapter shall apply to the terms used in this standard. Where terms are not defined in this chapter or within another chapter, they shall be defined using their ordinarily accepted meanings within the context in which they are used. *Merriam-Webster's Collegiate Dictionary*, 11th edition, shall be the source for the ordinarily accepted meaning.

3.2 Official NFPA Definitions.

3.2.1* Approved. Acceptable to the authority having jurisdiction.

3.2.2* Authority Having Jurisdiction (AHJ). An organization, office, or individual responsible for enforcing the requirements of a code or standard, or for approving equipment, materials, an installation, or a procedure.

3.2.3 Shall. Indicates a mandatory requirement.

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

3.2.5 Standard. An NFPA Standard, the main text of which contains only mandatory provisions using the word “shall” to indicate requirements and that is in a form generally suitable for mandatory reference by another standard or code or for adoption into law. Nonmandatory provisions are not to be considered a part of the requirements of a standard and shall be located in an appendix, annex, footnote, informational note, or other means as permitted in the NFPA Manuals of Style. When used in a generic sense, such as in the phrase “standards development process” or “standards development activities,” the term “standards” includes all NFPA Standards, including Codes, Standards, Recommended Practices, and Guides.

3.3 General Definitions.

3.3.1 Advanced Life Support (ALS). See 3.3.68.1.

3.3.2 Aerial Device. An aerial ladder, elevating platform, or water tower that is designed to position personnel, handle materials, provide continuous egress, or discharge water. [1901, 2016]

3.3.3* Air Transfer. The process of transferring air from one SCBA cylinder to another SCBA cylinder of the same rated pressure capacity by connecting them together with properly designed fittings and a high-pressure transfer line.

3.3.4* Aircraft Rescue and Fire Fighting. The fire-fighting actions taken to rescue persons and to control or extinguish fire involving or adjacent to aircraft on the ground.

3.3.5 Atmosphere.

3.3.5.1* Hazardous Atmosphere. Any atmosphere that is oxygen deficient or that contains a toxic or disease-producing contaminant.

3.3.5.2 Oxygen-Deficient Atmosphere. Air atmospheres containing less than 19.5 percent oxygen by volume at one standard atmosphere pressure.

3.3.6 Basic Life Support (BLS). See 3.3.68.2.

3.3.7 Biological Terrorism Agents. Liquid or particulate agents that can consist of a biologically derived toxin or pathogen to inflict lethal or incapacitating casualties, generally on a civilian population as a result of a terrorist attack. [1994, 2018]

3.3.8* Candidate. A person who has submitted an application to become a member of the fire department.

3.3.9 CBRN. An abbreviation for chemicals, biological agents, and radiological particulate hazards.

3.3.10* Chemical Flash Fire. The ignition of a flammable and ignitable vapor or gas that produces an outward expanding flame front as those vapors or gases burn. This burning and expanding flame front, a fireball, will release both thermal and kinetic energy to the environment. [1991, 2016]

3.3.11 Chemical Terrorism Agents. Liquid, solid, gaseous, and vapor chemical warfare agents and toxic industrial chemicals used to inflict lethal or incapacitating casualties, generally on a civilian population as a result of a terrorist attack. [1994, 2018]

3.3.12* Clear Text. The use of plain language in radio communications transmissions.

3.3.13 Closed-Circuit SCBA. See 3.3.99.1.

3.3.14 Cold Zone. See 3.3.21.1.

3.3.15 Collapse Zone. See 3.3.21.2.

3.3.16 Communicable Disease. See 3.3.28.1.

3.3.17* Company. A group of members (1) under the direct supervision of an officer; (2) trained and equipped to perform assigned tasks; (3) usually organized and identified as engine companies, ladder companies, rescue companies, squad companies, or multi-functional companies; (4) operating with one piece of fire apparatus (pumper, aerial fire apparatus, elevating platform, quint, rescue, squad, ambulance) except where multiple apparatus are assigned that are dispatched and arrive together, continuously operate together, and are managed by a single company officer; (5) arriving at the incident scene on fire apparatus.

3.3.18* Confined Space. An area large enough and so configured that a member can bodily enter and perform assigned work but which has limited or restricted means for entry and exit and is not designed for continuous human occupancy.

3.3.19* Contaminants. Harmful, irritating, or nuisance material foreign to the normal atmosphere.

N 3.3.20 Contaminated/Contamination. The presence or the reasonably anticipated presence of contaminants on an item or surface.

3.3.21 Control Zones. The areas at an incident that are designated based upon safety and the degree of hazard.

3.3.21.1 Cold Zone. The control zone of an incident that contains the command post and such other support functions as are deemed necessary to control the incident.

3.3.21.2 Collapse Zone. The area that is exposed to trauma, debris, and/or thrust should a building or part of a building collapse.

3.3.21.3 Hot Zone. The control zone immediately surrounding a hazardous area, which extends far enough to prevent adverse effects to personnel outside the zone.

3.3.21.4 No-Entry Zone. Those areas at an incident scene that no person(s) are allowed to enter, regardless of what personal protective equipment (PPE) they are wearing due to dangerous conditions. [1521, 2015]

3.3.21.5 Warm Zone. The control zone outside the hot zone where personnel and equipment decontamination and hot zone support takes place.

3.3.22 Crew. A team of two or more fire fighters.

3.3.23* Crew Resource Management (CRM). A program focused on improved situational awareness, sound critical decision-making, effective communication, proper task allocation, and successful teamwork and leadership.

3.3.24* Cryogenic Liquid. A fluid produced or stored at very low temperatures.

3.3.25 Debilitating Illness or Injury. A condition that temporarily or permanently prevents a member of the fire department from engaging in normal duties and activities as a result of illness or injury.

N 3.3.26 Decontamination. The act of removing or neutralizing contaminants by a mechanical, chemical, thermal, or combined process.

3.3.27 Defensive Operations. See 3.3.76.1.

3.3.28 Disease.

3.3.28.1* Communicable Disease. A disease that can be transmitted from one person to another.

3.3.28.2 Infectious Disease. An illness or disease resulting from invasion of a host by disease-producing organisms such as bacteria, viruses, fungi, or parasites.

3.3.29 Drug. Any substance, chemical, over-the-counter medication, or prescribed medication that can affect the performance of the fire fighter.

3.3.30 Emergency Incident. See 3.3.60.1.

3.3.31 Emergency Medical Services. The provision of treatment, such as first aid, cardiopulmonary resuscitation, basic life support, advanced life support, and other pre-hospital procedures including ambulance transportation, to patients.

3.3.32 Emergency Operations. See 3.3.76.2.

3.3.33 Eye Protection. See 3.3.82, Primary Eye Protection.

3.3.34* Faceshield. A protective device commonly intended to shield the wearer's face, or portions thereof, in addition to the eyes from certain hazards, depending on faceshield type.

3.3.35 Facility. See 3.3.40, Fire Department Facility.

3.3.36 Facility Fire Brigade. An organized group of employees at a facility who are knowledgeable, trained, and skilled in at least basic fire-fighting operations, and whose full-time occupation might or might not be the provision of fire suppression and related activities for their employer. [600, 2015]

3.3.37 Fire Apparatus. A vehicle designed to be used under emergency conditions to transport personnel and equipment or to support the suppression of fires and mitigation of other hazardous situations. [1901, 2016]

3.3.38 Fire Chief. The highest ranking officer in charge of a fire department.

3.3.39* Fire Department. An organization providing rescue, fire suppression, and related activities, including any public, governmental, private, industrial, or military organization engaging in this type of activity. [1002, 2017]

3.3.40* Fire Department Facility. Any building or area owned, operated, occupied, or used by a fire department on a routine basis.

3.3.41 Fire Department Member. See 3.3.70, Member.

3.3.42 Fire Department Physician. A licensed doctor of medicine or osteopathy who has been designated by the fire department to provide professional expertise in the areas of occupational safety and health as they relate to emergency services. [1582, 2018]

3.3.43 Fire Fighting.

3.3.43.1* Proximity Fire Fighting. Specialized fire-fighting operations that can include the activities of rescue, fire suppression, and property conservation at incidents involving fires producing high levels of radiant heat as well as conductive and convective heat. [1971, 2018]

3.3.43.2 Structural Fire Fighting. The activities of rescue, fire suppression, and property conservation in buildings or other structures, vehicles, rail cars, marine vessels, aircraft, or like properties. [1710, 2016]

3.3.43.3 Wildland Fire Fighting. The activities of fire suppression and property conservation in woodlands, forests, grasslands, brush, prairies, and other such vegetation, or any combination of vegetation, that is involved in a fire situation but is not within buildings or structures. [1977, 2016]

3.3.44 Fire Shelter. An item of protective equipment configured as an aluminized tent utilized for protection, by means of reflecting radiant heat, in a fire entrapment situation.

3.3.45* Fire Suppression. The activities involved in controlling and extinguishing fires.

3.3.46* Flame Resistance (Protective Apparel). The property of a material whereby combustion is prevented, terminated, or inhibited following application of a flaming or non-flaming source of ignition, with or without subsequent removal of the ignition source.

3.3.47 Fully Enclosed Personnel Area. A driver or passenger compartment on the fire apparatus that provides total enclosure on all sides, top, and bottom and has positive latching on all access doors. [1901, 2016]

3.3.48 Goggle. A protective device intended to fit the face surrounding the eyes in order to shield the eyes from certain hazards, depending on goggle type.

N 3.3.49* Gross Decontamination. A phase of the decontamination process where significant reduction of the amount of surface contamination takes place as soon as possible, most often accomplished by mechanical removal of the contaminant or initial rinsing from handheld hose lines, emergency showers, or other nearby sources of water.

3.3.50* Hazard. Any arrangement of materials that presents the potential for harm. [921, 2017]

3.3.51 Hazardous Area. An area of a structure or building that poses a degree of hazard greater than that normal to the general occupancy of the building or structure. [5000, 2018]

3.3.52 Hazardous Atmosphere. See 3.3.5.1.

Δ 3.3.53 Hazardous Material. A substance (solid, liquid, or gas) or energy that when released is capable of creating harm to people, the environment, and property, including weapons of mass destruction (WMD) as defined in 18 US Code, Section 2332a, as well as any other criminal use of hazardous materials, such as illicit labs, environmental crimes, or industrial sabotage. [472, 2018]

3.3.54 Hazardous Materials Operations. See 3.3.76.3.

3.3.55 Health and Fitness Coordinator. The person who, under the supervision of the fire department physician, has been designated by the department to coordinate and be responsible for the health and fitness programs of the department.

3.3.56* Health and Safety Officer. The member of the fire department assigned and authorized by the fire chief as the manager of the safety, health, and wellness program.

3.3.57 Health Data Base. A compilation of records and data that relates to the health experience of a group of individuals and is maintained in a manner such that it is retrievable for study and analysis over a period of time.

3.3.58 Hot Zone. See 3.3.21.3.

3.3.59 Immediately Dangerous to Life or Health (IDLH). Any condition that would pose an immediate or delayed threat to life, cause irreversible adverse health effects, or interfere with an individual's ability to escape unaided from a hazardous environment. [1670, 2017]

3.3.60 Incident.

3.3.60.1 Emergency Incident. Any situation to which an emergency services organization responds to deliver emergency services, including rescue, fire suppression, emergency medical care, special operations, law enforcement, and other forms of hazard control and mitigation. [1561, 2014]

3.3.60.2 Rescue Incident. An emergency incident that primarily involves the rescue of persons subject to physical danger and that can include the provision of emergency medical services.

3.3.60.3 Traffic Incident. An emergency road user occurrence, a natural disaster, or other unplanned event that affects or impedes the normal flow of traffic.

3.3.61 Incident Action Plan. The objectives reflecting the overall incident strategy, tactics, risk management, and member safety that are developed by the incident commander. Incident action plans are updated throughout the incident.

3.3.62 Incident Commander (IC). The individual responsible for all incident activities, including the development of strategies and tactics and the ordering and the release of resources. [472, 2018]

3.3.63* Incident Management System (IMS). A system that defines the roles and responsibilities to be assumed by responders and the standard operating procedures to be used in the management and direction of emergency incidents and other functions.

3.3.64* Infection Control Program. The fire department's formal policy and implementation of procedures relating to the control of infectious and communicable disease hazards where employees, patients, or the general public could be exposed to blood, body fluids, or other potentially infectious materials in the fire department work environment.

3.3.65 Infectious Disease. See 3.3.28.2.

3.3.66 Interface Component. Any material, part, or subassembly used in the construction of the compliant product that provides limited protection to interface areas.

3.3.67 Life Safety Rope. Rope dedicated solely for the purpose of supporting people during rescue, fire-fighting, other emergency operations, or during training evolutions.

3.3.68 Life Support.

3.3.68.1 Advanced Life Support (ALS). Emergency medical treatment beyond basic life support level as defined by the medical authority having jurisdiction.

3.3.68.2 Basic Life Support (BLS). Emergency medical treatment at a level as defined by the medical authority having jurisdiction.

3.3.69* Liquefied Gas. A gas that, under its charged pressure, is partially liquid at 70°F (21°C).

3.3.70* Member. A person involved in performing the duties and responsibilities of a fire department, under the auspices of the organization.

3.3.71 Member Assistance Program (MAP). A generic term used to describe the various methods used in the fire department for the control of alcohol and other substance abuse, stress, and personal problems that adversely affect member performance.

3.3.72 Member Organization. An organization formed to represent the collective and individual rights and interests of the members of the fire department, such as a labor union or fire fighters' association.

3.3.73 Occupational Illness. An illness or disease contracted through or aggravated by the performance of the duties, responsibilities, and functions of a fire department member.

3.3.74 Occupational Injury. An injury sustained during the performance of the duties, responsibilities, and functions of a fire department member.

3.3.75 Offensive Operations. See 3.3.76.4.

3.3.76 Operations.

3.3.76.1* Defensive Operations. Actions that are intended to control a fire by limiting its spread to a defined area, avoiding the commitment of personnel and equipment to dangerous areas.

3.3.76.2 Emergency Operations. Activities of the fire department relating to rescue, fire suppression, emergency medical care, and special operations, including response to the scene of the incident and all functions performed at the scene.

3.3.76.3 Hazardous Materials Operations. All activities performed at the scene of a hazardous materials incident that expose fire department members to the dangers of hazardous materials.

3.3.76.4 Offensive Operations. Actions generally performed in the interior of involved structures that involve a direct attack on a fire to directly control and extinguish the fire.

3.3.76.5* Special Operations. Those emergency incidents to which the fire department responds that require specific and advanced training and specialized tools and equipment.

3.3.77 Oxygen-Deficient Atmosphere. See 3.3.5.2.

3.3.78* Particulates. Solid matter that is dispersed in air as a mixture.

N 3.3.79 Peer Supporter. Trained members of the fire service who talk with other peers about behavioral health concerns and connect members with helpful services.

3.3.80 Personnel Accountability System. A system that readily identifies both the location and function of all members operating at an incident scene.

N 3.3.81* Power-Assisted Patient Cot. An elevated patient conveyance device on which the primary patient is transported, also known as a transporter, gurney, stretcher, and carrier, engineered and manufactured with an automated and powered lifting system that is integrated with an ambulance mounted self-loading system.

3.3.82 Primary Eye Protection. A protective device specifically intended to shield the eyes from certain hazards while permitting vision. (See also 3.3.34, *Faceshield*; 3.3.48, *Goggles*; and 3.3.102, *Spectacles*.)

3.3.83 Procedure. An organizational directive issued by the authority having jurisdiction or by the department that establishes a specific policy that must be followed. [1561, 2014]

3.3.84* Protective Ensemble. Multiple elements of compliant protective clothing and equipment that when worn together provide protection from some risks, but not all risks, of emergency incident operations.

3.3.85 Proximity Fire Fighting. See 3.3.43.1.

3.3.86 Qualified Person. A person who, by possession of a recognized degree, certificate, professional standing, or skill, and who, by knowledge, training, and experience, has demonstrated the ability to deal with problems related to a particular subject matter, the work, or project. [1451, 2018]

3.3.87* Rapid Intervention Crew/Company (RIC). A minimum of two fully equipped personnel on site, in a ready state,

for immediate rescue of disoriented, injured, lost, or trapped rescue personnel. [1006, 2017]

3.3.88 Related Activities. Any and all functions that fire department members can be called upon to perform in the execution of their duties.

3.3.89 Rescue. Those activities directed at locating endangered persons at an emergency incident, removing those persons from danger, treating the injured, and providing for transport to an appropriate health care facility. (See also 3.3.104, *Technical Rescue*.)

3.3.90 Rescue Incident. See 3.3.60.2.

3.3.91 Rescue Task Force. A resource comprised of fire department and/or EMS personnel together with law enforcement personnel providing force protection, assigned and deployed in a portion of the scene that does not pose an immediate threat of active violence, but has not been deemed to be free of all possible threats of violence, to provide lifesaving interventions and rapid extraction of victims during an active violence incident.

3.3.92* Respiratory Protection Equipment (RPE). Devices that are designed to protect the respiratory system against exposure to gases, vapors, or particulates. [1404, 2018]

3.3.93 Risk. A measure of the probability and severity of adverse effects that result from an exposure to a hazard. [1451, 2018]

3.3.94 Risk Assessment. The process of identifying threats and hazards to life, property, operations, the environment, and entities, and the analysis of probabilities, vulnerabilities, and impacts. [1600, 2019]

▲ **3.3.95 Risk Management.** The process of planning, organizing, directing, and controlling the resources and activities of an organization in order to minimize detrimental effects on that organization.

▲ **3.3.96* Safety Officer.** A generic title given to a member within a fire department or emergency service organization who performs the functions of a health and safety officer, an incident safety officer, or who serves as an assistant to a person in either of those positions.

3.3.97 SCBA. Abbreviation for self-contained breathing apparatus. [See 3.3.99, *Self-Contained Breathing Apparatus (SCBA)*.] [1981, 2019]

3.3.98 Seat Belt. A two-point lap belt, a three-point lap/shoulder belt, or a four-point lap/shoulder harness for vehicle occupants designed to limit their movement in the event of an accident, rapid acceleration, or rapid deceleration by securing individuals safely to a vehicle in a seated position. (See also 3.3.107, *Vehicle Safety Harness*.)

3.3.99 Self-Contained Breathing Apparatus (SCBA). An atmosphere-supplying respirator that supplies a respirable air atmosphere to the user from a breathing air source that is independent of the ambient environment and designed to be carried by the user. [1981, 2019]

3.3.99.1 Closed-Circuit SCBA. A recirculation-type SCBA in which the exhaled gas is rebreathed by the wearer after the carbon dioxide has been removed from the exhalation gas and the oxygen content within the system has been restored from sources such as compressed breathing air, chemical

oxygen, and liquid oxygen, or compressed gaseous oxygen. [1981, 2019]

3.3.100 Service Test. The regular, periodic inspection and testing of apparatus and equipment, according to an established schedule and guideline, to ensure that they are in safe and functional operating condition.

3.3.101 Special Operations. See 3.3.76.5.

3.3.102* Spectacles. A protective device intended to shield the wearer's eyes from certain hazards depending on the spectacle type.

3.3.103 Structural Fire Fighting. See 3.3.43.2.

• **3.3.104 Technical Search and Rescue.** The application of special knowledge, skills, and equipment to safely resolve unique and/or complex search and rescue situations. [1670, 2017]

3.3.105 Traffic Incident. See 3.3.60.3.

3.3.106 Upstream/Downstream Traffic. Traffic that is entering or approaching the incident scene (upstream); traffic that is departing or past the incident (downstream).

3.3.107 Vehicle Safety Harness. A restraint device for vehicle occupants designed to limit their movement in the event of an accident, rapid acceleration, or rapid deceleration by securing individuals safely to a vehicle either in a seated position or tethered to the vehicle. (See also 3.3.98, *Seat Belt*.)

3.3.108 Warm Zone. See 3.3.21.5.

3.3.109 Wildland Fire Fighting. See 3.3.43.3.

3.3.110 Wildland Fire-Fighting Respirator. A respirator that has been certified for providing respiratory protection during wildland fire-fighting operations by NIOSH under 42 CFR 84, "Approval of Respiratory Protective Devices," and certified as compliant with NFPA 1984. [1984, 2016]

Chapter 4 Fire Department Administration

4.1 Fire Department Organizational Statement.

4.1.1* The fire department shall prepare and maintain a written statement or policy that establishes the existence of the fire department, the services the fire department is authorized and expected to perform, and the basic organizational structure.

4.1.2* The fire department shall prepare and maintain written policies and standard operating procedures that document the organization structure, membership, roles and responsibilities, expected functions, emergency operations, and training requirements, including the following:

- (1) The types of standard evolutions that are expected to be performed and the evolutions that must be performed simultaneously or in sequence for different types of situations
- (2) The minimum number of members who are required to perform each function or evolution and the manner in which the function is to be performed in accordance with NFPA 1710 or NFPA 1720
- (3) The number and types of apparatus and the number of personnel that will be dispatched to different types of incidents in accordance with NFPA 1710 or NFPA 1720

- (4) The procedures that will be employed to initiate and manage operations at the scene of an emergency incident
- (5) Post-incident control and mitigation of emergency scene contaminants

4.1.3 The organizational statement and procedures shall be available for inspection by members or their designated representative.

4.1.4 The fire department shall evaluate current trends and research to determine if policies and procedures are appropriate at least annually or following a near miss or catastrophic event.

4.1.5* Fire departments shall develop pre-incident plans as determined by the AHJ.

4.1.5.1* Fire departments shall develop a construction or demolition fire safety program(s) as determined by the AHJ.

4.2 Risk Management Plan.

4.2.1* The fire department shall develop and adopt a comprehensive written risk management plan.

4.2.2 The risk management plan shall at least cover the risks associated with the following:

- (1) Administration
- (2) Facilities
- (3) Training
- (4) Vehicle operations, both emergency and non-emergency
- (5) Protective clothing and equipment
- (6) Operations at emergency incidents (*see Annex C*)
- (7)* Non-emergency services or activities
- (8) Products of combustion, carcinogens, and other incident-related health hazards
- (9) Other related activities

4.2.3* The risk management plan shall include at least the following components (*see Annex D*):

- (1) Risk identification — actual and potential hazards
- (2) Risk evaluation — likelihood of occurrence of a given hazard and severity of its consequences
- (3) Establishment of priorities for action — the degree of a hazard based upon the frequency and risk of occurrence
- (4) Risk control techniques — solutions for elimination or mitigation of potential hazards; implementation of best solution
- (5) Risk management monitoring — evaluation of effectiveness of risk control techniques

4.3 Safety and Health Policy.

4.3.1* The fire department shall adopt an official written departmental occupational safety, health, and wellness policy that identifies specific goals and objectives for the prevention and elimination of accidents and occupational injuries; exposure to communicable disease; exposure to products of combustion, carcinogens, contaminants, and other incident-related health hazards; illnesses; and fatalities.

4.3.2 It shall be the policy of the fire department to seek and to provide for its members an occupational safety, health, and wellness program that complies with this standard.

4.3.3* The fire department shall evaluate the effectiveness of the occupational safety, health, and wellness program at least once every 3 years or following a catastrophic or near miss event.

4.3.3.1 An audit report of the findings shall be submitted to the fire chief and to the members of the occupational safety and health committee.

4.4 Roles and Responsibilities.

4.4.1 It shall be the responsibility of the fire department to research, develop, implement, and enforce an occupational safety, health, and wellness program that recognizes and reduces the inherent risks involved in the operations of a fire department.

4.4.2 The fire department shall be responsible for compliance with all applicable laws and legal requirements with respect to member safety and health.

4.4.3* The fire department shall establish and enforce rules, regulations, and standard operating procedures to meet the objectives of this standard.

4.4.4 The fire department shall be responsible for developing and implementing an accident investigation procedure.

4.4.5* All accidents, near misses, injuries, fatalities, occupational illnesses, and exposures involving members shall be investigated.

4.4.5.1 All accidents involving fire department vehicles, equipment, or fire department facilities shall be investigated.

4.4.5.2 The fire department shall take the corrective action necessary to avoid repetitive occurrences of accidents and exposure to communicable diseases.

4.4.5.3 Records of such investigations shall be kept in accordance with the applicable provisions of 4.6.1.

4.4.5.4* The fire department shall develop, adopt, and maintain a written policy related to the documentation and dissemination of information related to internal near-miss investigations and provide information to members.

4.4.6 Each individual member of the fire department shall cooperate, participate, and comply with the provisions of the occupational safety, health, and wellness program.

4.4.7 It shall be the right of each member to be protected by an effective occupational safety, health, and wellness program and to participate or be represented in the research, development, implementation, evaluation, and enforcement of the program.

4.4.8 The member organization, where such an organization exists, shall cooperate with the fire department by representing the interests and the welfare of the members in the research, development, implementation, and evaluation of the occupational safety, health, and wellness program.

4.4.8.1 The member organization shall have the right to represent the individual and collective rights of its members in the occupational safety, health, and wellness program.

4.5 Occupational Safety and Health Committee.

4.5.1* An occupational safety and health committee shall be established and shall serve the fire chief in an advisory capacity.

4.5.1.1 The committee shall include the following members:

- (1) The designated fire department health and safety officer
- (2) Representatives of fire department management

(3) Individual members or representatives of member organizations

4.5.1.2 The committee shall also be permitted to include other persons.

4.5.1.3 Representatives of member organizations shall be selected by their respective organizations, but other committee members shall be appointed to the committee by the fire chief.

4.5.2 The purpose of this committee shall be to conduct research, develop recommendations, and study and review matters pertaining to occupational safety and health within the fire department.

4.5.3* The committee shall hold regularly scheduled meetings and shall be permitted to hold special meetings whenever necessary.

4.5.3.1 Regular meetings shall be held at least once every 6 months.

4.5.3.2 Written minutes of each meeting shall be retained and shall be made available to all members.

4.5.4 Orientation training on best practices for safety committee processes and the duties and responsibilities of members, in addition to specific training on relevant NFPA standards governing the committee's areas of responsibility or specific tasks of individuals serving on the committee, shall be provided to the committee members by the fire department.

4.6 Records.

4.6.1* The fire department shall establish a data collection system and maintain permanent records of all accidents, injuries, illnesses, exposures to infectious agents and communicable diseases, or deaths that are job related.

4.6.1.1 The data collection system shall include the items identified in the national fire service database system.

▲ **4.6.2*** The data collection system shall also maintain overall incident exposure data, as well as individual records of any occupational exposure to known or suspected products of combustion, carcinogens, contaminants, or other incident-related health hazards; toxic products; or infectious or communicable diseases.

4.6.3 The fire department shall ensure that a confidential health record for each member and a health data base are maintained.

4.6.4* The fire department shall maintain training records for each member indicating dates, subjects covered, satisfactory completion, and, if any, certifications achieved.

4.6.5 The fire department shall ensure that inspection, maintenance, repair, and service records are maintained for all vehicles and equipment used for emergency operations and training.

4.7 Appointment of the Health and Safety Officer.

4.7.1 The fire chief shall appoint a designated fire department health and safety officer.

4.7.2 The health and safety officer shall meet the qualifications defined in NFPA 1521.

4.7.3 The fire chief shall ensure that the fire department health and safety officer is given the authority to administer the health and safety program.

4.7.4 The health and safety officer shall perform the functions defined in NFPA 1521.

4.7.5 The fire department health and safety officer shall be responsible for the management of the occupational safety, health, and wellness program.

4.7.6 The fire chief shall make available such additional safety officers and resources as required to fulfill the requirements of the occupational safety, health, and wellness program to meet the requirements of NFPA 1521.

Chapter 5 Training, Education, and Professional Development

5.1 General Requirements.

5.1.1* The fire department shall establish and maintain a training, education, and professional development program with a goal of preventing occupational deaths, injuries, and illnesses.

5.1.2 The fire department shall provide training, education, and professional development for all department members commensurate with the duties and functions that they are expected to perform.

5.1.3 The fire department shall establish training and education programs that provide new members initial training, proficiency opportunities, and a method of skill and knowledge evaluation for duties assigned to the member prior to engaging in emergency operations.

5.1.4* The fire department shall restrict the activities of new members during emergency operations until the member has demonstrated the skills and abilities to complete the tasks expected.

5.1.5 The fire department shall provide all members with training and education on the department's risk management plan.

5.1.6 The fire department shall provide all members with training and education on the department's written procedures.

5.1.7 The fire department shall provide all members with a training, education, and professional development program commensurate with the emergency medical services that are provided by the department.

5.1.8* The fire department shall provide all members with a documented training and education program that covers all assigned personal protective equipment (PPE).

5.1.8.1 Training shall comply with applicable governing standards and follow the manufacturer's instructions and guidelines to include the following topics:

- (1) The organization's overall program for the selection and use of protective ensembles, ensemble elements, and SCBAs
- (2) Technical data package (TDP) where applicable
- (3) Proper overlap and fit
- (4) Proper donning and doffing (including emergency doffing)

- (5) Construction features and function
- (6) Usage and performance limitations (including physiological effects on user and effects of heat transfer on the protective ensemble)
- (7) Recognizing and responding to indications of protective ensemble and SCBA failure
- (8) Routine inspection cleaning, maintenance, and retirement
- (9) Special incident procedure operation
- (10) Proper storage

5.1.8.2 Maintenance of structural and proximity protective ensembles and ensemble elements shall be completed in accordance with NFPA 1851.

5.1.8.3 Maintenance of SCBA shall be completed in accordance with NFPA 1852.

5.1.8.4 Maintenance of protective ensembles for technical rescue incidents shall be completed in accordance with NFPA 1855.

5.1.9 As a duty function, members shall be responsible to maintain proficiency in their skills and knowledge, and to avail themselves of the professional development provided to the members through department training and education programs.

5.1.10 Training programs for all members engaged in emergency operations shall include procedures for the safe exit and accountability of members during rapid evacuation, equipment failure, or other dangerous situations and events.

N 5.1.11 Rapid intervention crew (RIC) and fire-fighter self-rescue training and exercises shall be conducted in accordance with NFPA 1407.

N 5.1.12 Members conducting fire inspections shall be trained in hazard identification, risk mitigation, and PPE selection that is relevant to the hazard.

5.1.13 All members who are likely to be involved in emergency operations shall be trained in the incident management and accountability system used by the fire department.

5.2 Member Qualifications.

5.2.1 All members who engage in structural fire fighting shall meet the requirements of NFPA 1001.

5.2.2* All driver/operators shall meet the requirements of NFPA 1002.

5.2.3 All aircraft rescue fire fighters (ARFF) shall meet the requirements of NFPA 1003.

5.2.4 All fire officers shall meet the requirements of NFPA 1021.

5.2.5 All wildland fire fighters shall meet the requirements of NFPA 1051.

5.2.6* All members responding to hazardous materials incidents shall meet the operations level as required in NFPA 472.

5.2.7 All members who engage in fire investigations shall meet the requirements of NFPA 1033.

5.2.8 All members who engage in fire inspections shall meet the requirements of NFPA 1031.

5.3 Training Requirements.

5.3.1* The fire department shall adopt or develop training and education curriculums that meet the minimum requirements outlined in professional qualification standards covering a member's assigned function.

5.3.2 The fire department shall provide training, education, and professional development programs as required to support the minimum qualifications and certifications expected of its members.

5.3.3 Members shall practice assigned skill sets on a regular basis but not less than annually.

5.3.4 The fire department shall provide specific training to members when written policies, practices, procedures, or guidelines are changed and/or updated.

5.3.5* The respiratory protection training program shall meet the requirements of NFPA 1404.

5.3.6 Members who perform wildland fire fighting shall be trained at least annually in the proper deployment of an approved fire shelter.

5.3.7 All live fire training and exercises shall be conducted in accordance with NFPA 1403.

5.3.8 All training and exercises shall be conducted under the direct supervision of a qualified instructor.

5.3.9* All members who are likely to be involved in emergency medical services shall meet the training requirements of the AHJ.

5.3.10* Members shall be fully trained in the use, limitations, care, and maintenance of the protective ensembles and ensemble elements assigned to them or available for their use.

5.3.11 All members shall meet the training requirements as outlined in NFPA 1561.

5.3.12 All members shall meet the training requirements as outlined in NFPA 1581.

Δ 5.3.13 All members shall be provided initial and ongoing training in the risks associated with workplace exposure to products of combustion, carcinogens, contaminants, and other incident-related health hazards.

5.3.13.1* Members shall be trained to recognize when a workplace exposure has occurred and to know the control methods for personal decontamination, decontamination of protective clothing and equipment, and the risks of cross-contamination.

N 5.3.14 The fire department shall provide all members with training and education on behavioral health issues in the fire service to include the importance of addressing behavioral health problems, including, but not limited to, the impact of stigma associated with behavioral health and how to overcome it, substance use disorder, depression, post-traumatic stress, family and relationship concerns, factors that enhance resilience, suicide prevention, and available resources for behavioral health treatment.

N 5.3.15 The fire department shall provide all members with training and education on safe ground ladder and aerial ladder climbing in accordance with 6.1.10.

5.4 Special Operations Training.

5.4.1 The fire department shall provide specific and advanced training to members who engage in special operations as a technician.

5.4.2 The fire department shall provide specific training to members who are likely to respond to special operations incidents in a support role to special operations technicians.

5.4.3 Members expected to perform hazardous materials mitigation activities shall meet the training requirements of a technician as outlined in NFPA 472 and NFPA 1072.

5.4.4 Members expected to perform technical operations at the technician level as defined in NFPA 1670 shall meet the training requirements specified in NFPA 1006.

5.5 Member Proficiency.

5.5.1 The fire department shall develop a recurring proficiency cycle with the goal of preventing skill degradation and potential for injury and death of members.

5.5.2 The fire department shall develop and maintain a system to monitor and measure training progress and activities of its members.

5.5.3* The fire department shall provide an annual skills check to verify minimum professional qualifications of its members.

5.6 Training Activities.

5.6.1* All training and exercises shall be conducted under the direct supervision of a qualified instructor.

5.6.2* All live fire training and exercises shall be conducted in accordance with NFPA 1403.

5.6.2.1 Emergency medical services shall be provided for live fire training exercises in accordance with Section 4.11 of NFPA 1403.

5.6.3* For non-live fire training exercises, fire departments shall conduct a risk assessment to determine the appropriate emergency medical capabilities to be available at the training site.

Chapter 6 Fire Apparatus, Equipment, and Drivers/Operators

6.1 Fire Department Apparatus.

6.1.1* The fire department shall consider safety and health as primary concerns in the specification, design, construction, acquisition, operation, maintenance, inspection, and repair of all fire department apparatus.

6.1.1.1 If the fire apparatus is equipped with a vehicle data recorder, the AHJ shall develop operating procedures for uploading, monitoring, and reviewing the data.

6.1.2 All new fire apparatus shall be specified and ordered to meet the applicable requirements of NFPA 1901.

▲ 6.1.3 All new wildland fire apparatus shall be specified and ordered to meet the requirements of NFPA 1906.

6.1.4 All new automotive ambulances shall be specified and ordered to meet the requirements of NFPA 1917.

N 6.1.4.1 Fire departments that provide EMS transport shall use a power-assisted patient cot to load patients into an automotive ambulance.

N 6.1.4.2 Power-assisted patient cot or self-loading cot shall be installed, mounted, and retained in accordance with the provisions in NFPA 1917.

6.1.5 All new marine fire-fighting vessels shall be specified and ordered to meet the requirements of NFPA 1925.

6.1.6* Where tools, equipment, or respiratory protection are carried within enclosed seating areas of fire apparatus or the patient compartment of an ambulance, such items shall be secured in accordance with NFPA 1901, NFPA 1906, and NFPA 1917.

6.1.7 When fire apparatus is refurbished, it shall be specified and ordered to meet the applicable requirements of NFPA 1912.

6.1.8 Fire departments that operate their own fixed-wing or rotary aircraft for fire department operations shall provide four-point restraints for all pilots and passengers, not including any EMS patients.

6.1.8.1 Members performing hoist rescue in the passenger area of the aircraft shall be secured by a vehicle safety harness or seat belt system.

6.1.9 All apparatus shall have hose storage areas that are equipped with a positive means to prevent unintentional deployment of the hose from the top, sides, front, and rear of the hose storage area while the apparatus is under way in normal operations.

N 6.1.10 Each person ascending or descending the ladder on the aerial apparatus shall do the following:

- (1) Use a ladder belt and tether that meets the requirements of NFPA 1983.
- (2) Use the three points of contact climbing method — one hand and two feet or two hands and one foot in contact at all times.
- (3) At high ladder angles, ascend or descend by grasping the rungs and not the handrails.

N 6.1.10.1 Each aerial apparatus shall carry correctly sized ladder belts and tethers to accommodate all members authorized to climb the ladder or ride in the platform of the apparatus.

N 6.1.10.2 Persons working on a ladder shall be anchored to a structural feature of the ladder or platform when one of the following occurs:

- (1) The device is in motion.
- (2) They are not actively entering or exiting the platform.
- (3) They are not actively climbing or descending the ladder.

N 6.1.10.3 Personnel ascending or descending aerial or ground ladders with equipment shall have that equipment tethered to themselves in a way that allows them full use of both feet and both hands.

N 6.1.11 Fire departments shall ensure that when operating at emergency incidents, engine exhaust is directed away from members operating at the incident.

6.2 Drivers/Operators of Fire Department Apparatus.

6.2.1* Fire apparatus shall be operated only by members who have successfully completed an approved driver training program commensurate with the type of apparatus the member will operate or by trainee drivers who are under the supervision of a qualified driver.

6.2.1.1 The AHJ shall be responsible for providing driver training instruction that complies with NFPA 1451 to members on the operation of specific fire department-owned pumpers and mobile water supply apparatus that hold greater than 999 gal (3782 L) of on-board water supply.

Δ 6.2.1.2 The AHJ shall establish the maximum speed that the apparatus shall operate at and post that speed on a placard mounted on the dash within view of the driver, stating "Do not exceed max speed of XX mph."

6.2.2* The driver of a fire department vehicle shall be required to possess a valid driver's license for the class of vehicle, as specified by the AHJ.

6.2.2.1 Fire department vehicles shall be operated in compliance with all applicable traffic laws, including special provisions pertaining to emergency vehicles as established by the AHJ, as well as specific rules, regulations, and procedures adopted by the fire department.

6.2.2.2 Pumpers and mobile water supply apparatus that do not have anti-lock brake systems (ABS) and carry over 999 gal (3782 L) of on-board water supply shall be operated in non-emergency mode at all times.

6.2.3* The fire department shall establish specific rules, regulations, and procedures relating to the operation of fire department vehicles in an emergency mode, including guidelines to establish when emergency response is authorized and when emergency response is not authorized.

6.2.4* Drivers of fire apparatus shall be directly responsible for the safe and prudent operation of the vehicles under all conditions.

6.2.4.1 When the driver is under the direct supervision of an officer, that officer shall also assume responsibility for the driver's actions.

6.2.5 Drivers shall not move fire apparatus until all persons on the vehicle are seated and secured with seat belts in approved riding positions, other than as specifically allowed in this chapter.

6.2.6 Drivers of fire apparatus shall obey all traffic control signals and signs and all laws and rules of the road of the jurisdiction for the operation of motor vehicles.

6.2.7* The fire department shall develop standard operating procedures for safely driving fire apparatus during non-emergency travel and emergency response and shall include specific criteria for vehicle speed, crossing intersections, traversing railroad grade crossings, the use of emergency warning devices, and the backing of fire apparatus.

6.2.7.1* Procedures for all responses shall emphasize that the safe arrival of fire apparatus to the incident scene is the first priority.

6.2.8* During emergency response, drivers of fire apparatus shall bring the vehicle to a complete stop under any of the following circumstances:

- (1) When directed by a law enforcement officer
- (2) At red traffic lights
- (3) At stop signs
- (4) At negative right-of-way intersections
- (5) At blind intersections
- (6) When the driver cannot account for all lanes of traffic in an intersection
- (7) When other intersection hazards are present
- (8) When encountering a stopped school bus with flashing warning lights

6.2.9 Drivers shall proceed through intersections only when the driver can account for all lanes of traffic in the intersection.

6.2.10* Upon arriving at unguarded railroad grade crossings during either emergency response or non-emergency travel, drivers of fire apparatus shall come to a complete stop and ensure that it is safe to proceed before crossing the railroad track(s).

6.2.11 Drivers shall use caution when approaching and crossing any guarded railroad grade crossing.

6.2.12 The fire department shall include information on the potential hazards of retarders, such as engine, transmission, and driveline retarders, in the driver training program and shall develop written procedures pertaining to the use of such retarders.

6.2.13 The fire department shall develop written procedures requiring drivers to discontinue the use of manual brake limiting valves, frequently labeled as a "wet road/dry road" switch, and requiring that the valve/switch remains in the "dry road" position.

6.2.14* Where members are authorized to respond to incidents or to fire stations in private vehicles, the fire department shall establish specific rules, regulations, and procedures relating to the operation of private vehicles in an emergency mode.

6.2.14.1 These rules and regulations shall be at least equal to the provisions regulating the operation of fire department vehicles.

6.2.14.2* These rules and regulations shall also apply to the use of emergency lighting equipment, audible warning devices, or both on private vehicles.

6.2.14.2.1 The rules and regulations shall specify the procedures for use of emergency lighting equipment and audible warning devices and shall be in compliance with the motor vehicle laws of the jurisdiction.

6.2.14.2.2 Emergency lighting equipment and audible warning devices shall not be installed without the fire department's approval.

6.3 Riding in Fire Apparatus.

6.3.1* All persons riding in fire apparatus shall be seated and belted securely by seat belts in approved riding positions at any time the vehicle is in motion other than as allowed in 6.3.4, 6.3.5, and 6.3.6.

6.3.2 Standing or riding on tail steps, sidesteps, running boards, fully enclosed personnel areas, or in any other exposed position shall be specifically prohibited.

6.3.3 Seat belts shall not be released or loosened for any purpose while the vehicle is in motion, including the donning of respiratory protection equipment or protective clothing.

6.3.4* Members actively performing necessary emergency medical care while the vehicle is in motion shall be secured to the vehicle by a seat belt, or by a vehicle safety harness designed for occupant restraint, to the extent consistent with the effective provision of such emergency medical care.

6.3.4.1 All other persons in the vehicle shall be seated and belted in approved riding positions while the vehicle is in motion.

6.3.5* Fire departments permitting hose loading operations while the vehicle is in motion shall develop written standard operating procedures addressing all safety aspects.

6.3.6* Fire departments permitting tiller training, where both the instructor and the trainee are at the tiller position, shall develop written standard operating procedures addressing all safety aspects.

6.3.7* Helmets shall be provided for and used by members riding in open cab apparatus or open tiller seats.

6.3.7.1 Helmets shall not be worn by persons riding in an enclosed cab.

6.3.8* Eye protection shall be provided for members riding in open cab apparatus or open tiller seats.

6.3.9* On existing fire apparatus where there is an insufficient number of seats available for the number of members assigned to or expected to ride on that piece of apparatus, alternate means of transportation that provide seated and belted positions shall be used.

6.4 Inspection, Maintenance, and Repair of Fire Apparatus.

6.4.1* All fire apparatus shall be inspected, maintained, and tested in accordance with the applicable requirements of NFPA 1911.

6.4.2 Fire pumps on apparatus shall be service tested in accordance with the applicable requirements of NFPA 1911.

6.4.3 All aerial devices shall be inspected and service tested in accordance with the applicable requirements of NFPA 1911.

6.4.4 All fire apparatus shall be cleaned and disinfected in accordance with NFPA 1581.

6.5 Tools and Equipment.

6.5.1 The fire department shall consider safety and health as primary concerns in the specification, design, construction, acquisition, operation, maintenance, inspection, and repair of all tools and equipment.

6.5.2 The hearing conservation objectives of this standard shall be taken into account in the acquisition of new power tools and power equipment.

6.5.3 All new fire department ground ladders shall be specified and ordered to meet the applicable requirements of NFPA 1931.

6.5.4 All new fire hose shall be specified and ordered to meet the applicable requirements of NFPA 1961.

6.5.5 All new fire department spray nozzles shall be specified and ordered to meet the applicable requirements of NFPA 1964.

6.5.6* All equipment carried on fire apparatus or designated for training shall be inspected at least weekly and within 24 hours after any use.

6.5.7 Inventory records shall be maintained for the equipment carried on each vehicle and for equipment designated for training.

6.5.8 All equipment carried on fire apparatus or designated for training shall be tested at least annually in accordance with manufacturers' instructions and applicable standards.

6.5.9 Fire-fighting equipment found to be defective or in unserviceable condition shall be removed from service and repaired or replaced.

6.5.10 All fire department equipment and tools shall be cleaned and disinfected in accordance with NFPA 1581.

6.5.11 All ground ladders shall be inspected and service tested in accordance with the applicable requirements of NFPA 1932.

6.5.12 All fire hose shall be inspected and service tested in accordance with the applicable requirements of NFPA 1962.

6.5.13 All fire extinguishers shall be inspected and tested in accordance with the applicable requirements of NFPA 10.

6.5.14 All fire department powered rescue tools shall meet the requirements of NFPA 1936.

6.5.15 All fire hose deployed during fire suppression operations that are exposed to contaminants shall be decontaminated in accordance with NFPA 1962 and the manufacturer's recommendations prior to being returned to service.

Chapter 7 Protective Clothing and Protective Equipment

7.1 General.

7.1.1* The fire department shall provide each member with protective ensembles, ensemble elements, and protective equipment designed to provide protection from hazards to which the member is likely to be exposed and that is suitable for the tasks the member is expected to perform.

7.1.1.1 A risk assessment for the need and, if necessary, selection of protective ensembles, ensemble elements, and protective equipment shall be conducted in accordance with 29 CFR 1910.132, "Personal Protective Equipment."

7.1.1.2 The selection of applicable protective ensembles, ensemble elements, and other protective equipment shall be based on a selection program containing a risk assessment in compliance with 29 CFR 1910.132, "Personal Protective Equipment," and all applicable NFPA standards.

7.1.2 Protective ensembles, ensemble elements, and other protective equipment shall be used whenever the member is exposed or potentially exposed to the hazards for which it is provided.

7.1.3 The fire department shall require all members to wear or use all protective ensembles, ensemble elements, and other protective equipment specific to the operation in which members are engaged.

7.1.4 Structural fire-fighting and proximity fire-fighting protective ensembles and ensemble elements shall be cleaned as specified in NFPA 1851.

7.1.4.1 While on duty, members shall not wear personal clothing, accessories, or personal equipment that might not be suitable and appropriate to protect the member from the hazards to which the member could be exposed.

7.1.5* Where station/work uniforms are worn by members, such station/work uniforms shall meet the requirements of NFPA 1975.

7.1.6 The fire department shall provide for the inspection, care, and maintenance of protective ensembles, ensemble elements, and components according to the manufacturer's instructions unless specialized care and maintenance requirements are specified by NFPA standards for specific types of protective ensembles, ensemble elements, or components; in which case the specialized care and maintenance requirements in the applicable NFPA standard shall apply.

7.1.6.1* When the fire department implements a care and maintenance operation, the fire department shall create procedures for advanced inspection, advanced cleaning, sanitization or disinfection, and specialized cleaning of protective ensembles and ensemble elements in accordance with NFPA 1851.

7.1.6.2 Where such cleaning is conducted in fire stations, the fire department shall provide a designated cleaning area that meets the requirements specified in NFPA 1581.

7.1.6.3* Where the organization implements an on-site care and maintenance operation, the organization shall follow applicable governing standards that provide for exposure control and protection of members performing the tasks associated with care and maintenance.

7.1.6.4 Specific roles, responsibilities, and authorities shall be assigned for inspection, care, and maintenance of protective clothing and equipment.

7.1.7 The fire department shall provide training for its protective clothing and equipment program.

7.2 Protective Clothing for Structural Fire Fighting.

7.2.1* Members who engage in or are exposed to the hazards of structural fire fighting shall be provided with and shall use a protective ensemble that shall meet the applicable requirements of NFPA 1971.

N 7.2.1.1* The member shall be provided with correctly sized and fitted protective clothing in accordance with manufacturer's recommendations.

7.2.2* The protective coat and the protective trousers shall have at least a 2 in. (50 mm) overlap of all layers so there is no gaping of the total thermal protection when the protective garments are worn.

7.2.2.1 The minimum overlap shall be determined by measuring the garments on the wearer, without SCBA, in both of the following positions:

- (1) Position A — standing, hands together reaching overhead as high as possible
- (2) Position B — standing, hands together reaching overhead, with body bent forward at a 90-degree angle, to the side (either left or right), and to the back

7.2.3 Single-piece protective coveralls shall not be required to have an overlap of all layers, provided there is continuous composite protection.

7.2.4 Gloves.

7.2.4.1 Fire departments that provide protective coats with protective resilient wristlets secured through a thumb opening shall be permitted to provide gloves of the gauntlet type for use with these protective coats.

7.2.4.2* Fire departments that do not provide such wristlets attached to all protective coats shall provide gloves of the wristlet type or other interface component for use with these protective coats.

7.2.5 The fire department shall adopt and maintain a protective clothing and protective equipment program that addresses the selection, care, maintenance, and use of structural fire-fighting protective ensembles, and training in its use.

7.2.5.1 The selection, care, and maintenance of protective ensembles for structural fire fighting shall be as specified in NFPA 1851.

7.2.5.2 Specific roles, responsibilities, and authorities shall be assigned for inspection and maintenance.

7.2.6* The fire department shall develop specific procedures for rapid extrication of a downed fire fighter that involves the use of specific equipment worn by the fire fighter.

7.3 Protective Clothing for Proximity Fire-Fighting Operations.

7.3.1* When determining the need for proximity ensembles, the organization shall perform a risk assessment as required by Chapter 5 of NFPA 1851.

7.3.2 When it is determined proximity protective ensembles and ensemble elements are required, members shall be provided with and shall use proximity fire-fighting protective ensembles and ensemble elements that are compliant with the proximity requirements of NFPA 1971.

7.3.2.1 The minimum overlap shall be determined by measuring the garments on the wearer, without SCBA, in both of the following positions:

- (1) Position A — standing, hands together reaching overhead as high as possible
- (2) Position B — standing, hands together reaching overhead, with body bent forward at a 90-degree angle, to the side (either left or right), and to the back

7.3.3 Single-piece proximity protective coveralls shall not be required to have an overlap of all layers, provided there is continuous full thermal and radiant heat protection.

7.3.4 Where SCBA is worn over or outside the proximity protective garment, the fire department shall inform the member of the potential high levels of radiant heat that can result in the failure of the SCBA.

7.3.4.1 The fire department shall require additional approved radiant reflective criteria, including but not limited to a protective cover, for the expected proximity fire-fighting exposures when the SCBA is worn over or outside the proximity protective garment.

7.4* Protective Clothing for Emergency Medical Operations.

7.4.1 The fire department shall develop standard operating procedures outlining the minimum required levels of protection based on a risk assessment of the medical care activities involved.

7.4.1.1 Members who perform emergency medical care or are otherwise likely to be exposed to blood or other body fluids shall be provided with emergency medical garments, emergency medical eye and face protection devices, emergency medical examination gloves, emergency medical gloves, emergency medical helmets, emergency medical CBRN protective ensembles, and emergency medical footwear that are compliant with NFPA 1999.

7.4.1.2 Fire department members who are issued and use protective equipment during medical incidents to protect from infectious agents shall be trained in the appropriate donning and doffing procedures in accordance with manufacturer's specifications.

7.4.2* Members shall wear emergency medical examination gloves when providing emergency medical care.

7.4.2.1 Patient care shall not be initiated before the gloves are in place.

7.4.2.2 Emergency medical work gloves shall be permitted to be used in place of emergency medical examination gloves in situations involving physical hazards.

7.4.3 Each member shall use emergency medical garments and emergency medical face protection devices, including particulate filtering masks, prior to any patient care during which large splashes of body fluids can occur, such as childbirth or situations involving spurting blood.

7.4.4 Contaminated emergency medical protective clothing shall be cleaned and disinfected or disposed of as specified in NFPA 1581 and in accordance with the manufacturer's directions.

7.4.4.1 Emergency medical examination gloves and emergency medical footwear covers shall not be reused and shall be disposed of after use.

7.4.4.2 Any item of emergency medical protective clothing that is not designated for "multiple use" shall not be reused and shall be disposed of after use.

7.5 Protective Clothing and Equipment for Fire Inspections.

7.5.1 The fire department shall conduct a risk assessment of all fire inspection activities.

7.5.2 The fire department shall develop standard operating procedures (SOPs) outlining the minimum required levels of protection.

7.6* Chemical-Protective Clothing for Hazardous Materials Emergency Operations.

7.6.1 Members who engage in operations during hazardous materials emergencies shall be provided with and shall use

chemical protective ensembles that meet the applicable requirements of NFPA 1991, NFPA 1992, or NFPA 1994.

7.6.1.1* A risk assessment for the need, and, if necessary, selection of chemical protective clothing, ensembles, and ensemble elements shall be conducted.

7.6.2* For a given hazardous materials incident, the following approach shall be used:

- (1) Perform a site-specific hazard and risk assessment: Identify all primary hazards that can cause potential harm to response personnel while taking into consideration the likelihood and consequences of exposure to the specific hazards.
- (2) Determine known threats: If entry into the site is determined to be necessary and the hazards are not identifiable, select NFPA 1991 ensembles with both flash fire escape and liquefied gas options.
- (3) Determine flash fire threats:
 - (a) If monitoring equipment or circumstances indicate an environment that is greater than 10 percent of the lower explosive limit, the environment is considered a flash fire or explosive risk.
 - (b) If skin toxic threats do not exist and there is no threat of an explosion, select protective ensembles certified in accordance with NFPA 1971 or NFPA 2112.
 - (c) If skin toxic threats do exist and there is no threat of an explosion, select protective ensembles certified in accordance with NFPA 1991 with optional flash fire protection.
- (4) Determine CBRN threats:
 - (a) If the agent is radiological/nuclear in nature and is limited to contaminated particles that are of relatively low radiation levels, select ensembles certified in accordance with NFPA 1994 Class 4 or 4R.
 - (b) If the agent is chemical, follow the gas/vapor or liquid/particulate guidance.
 - (c) If the agent is biological, follow the biological threats guidance.
- (5) Determine gas/vapor chemical threats:
 - (a) If the substance is a liquefied gas and is flammable, choose an NFPA 1991 ensemble with the optional liquefied gas protection and flash fire protection.
 - (b) If the substance is a liquefied gas but is not flammable, choose an NFPA 1991 ensemble with the optional liquefied gas protection.
 - (c) If the gas or vapor is not skin toxic, choose structural fire-fighting clothing or other flash fire protective clothing that conforms to NFPA 1971 or NFPA 2112, respectively.
 - (d) If the substance is flammable vapor at a concentration over 10,000 ppm or 1 percent, choose an NFPA 1991 ensemble that also meets the optional flash fire protection requirements.
 - (e) If the substance is vapor at a concentration over 10,000 ppm or 1 percent that is not flammable, choose an NFPA 1991 ensemble.
 - (f) If the substance is flammable vapor at a concentration over 350 ppm but at or less than 10,000 ppm or 1 percent, choose either an NFPA 1994 Class 1 ensemble that also meets the optional flash fire protection requirements.

- (g) If the substance is vapor at a concentration over 350 ppm but at or less than 10,000 ppm or 1 percent that is not flammable, choose an NFPA 1994 Class 1 ensemble.
- (h) If the substance is flammable vapor at a concentration over 40 ppm but at or less than 350 ppm, choose an NFPA 1994 Class 2 or 2R ensemble that also meets the optional flash fire protection.
- (i) If the substance is vapor at a concentration over 40 ppm but at or less than 350 ppm that is not flammable, choose an NFPA 1994 Class 2 or 2R ensemble.
- (j) If the substance is below IDLH conditions and flame hazard exists, choose an NFPA 1994 Class 3 or 3R ensemble that also meets the optional flash fire protection.
- (k) If the substance is below IDLH conditions and there is no flame hazard, choose an NFPA 1994 Class 3 or 3R ensemble.
- (6) Determine liquid/particulate chemical threats:
 - (a) If severe liquid splash or repeated/extended exposure liquid hazards exist, choose an NFPA 1992 or NFPA 1994 Class 2 or 2R ensemble.
 - (b) If low volume or infrequent liquid exposure hazards exist, choose an NFPA 1994 Class 3 or 3R ruggedized ensemble.
 - (c) If exposure is only expected to be solid particles, choose an NFPA 1994 Class 4 or Class 4R ensemble.
- (7) Determine biological threats:
 - (a) If the primary hazard is from airborne or aerosolized biological substances that are considered dangerous for skin contact, choose an NFPA 1994 Class 4 or Class 4R ensemble.
 - (b) If the primary hazard is from airborne or aerosolized biological substances that are not transmissible through skin contact, choose an appropriate respirator such as an air-purifying respirator (APR) with P100 filters or a powered air-purifying respirator (PAPR) with HEPA filter.
 - (c) If the primary hazard is from highly hazardous liquid-borne biological substances, choose either an NFPA 1994 Class 4 or 4R or a single-use or multiple-use NFPA 1999 ensemble.
 - (d) If the primary hazard is from potentially infectious blood or body fluids, choose protective NFPA 1999 garments, gloves, footwear and face/eyewear to protect those portions of the wearer's body where exposure is expected.
 - (e) Determine optimal stealth, equipment interoperability, and design/conformity configurations.
- (8) Prior to the use of the ensemble, consult the technical data package, manufacturers' instructions, and manufacturers' recommendations as provided to ensure that the ensemble is designed to provide the member protection from the specific hazardous materials emergency.
- (9) In many cases, an organization might not have all the different types of ensembles available. When this occurs, a higher performing ensemble should be selected.

7.7 Inspection, Maintenance, and Disposal of Chemical-Protective Clothing.

7.7.1 All chemical-protective clothing shall be inspected and maintained as required by the technical data package, manufacturers' instructions, and manufacturers' recommendations.

7.7.2 All chemical-protective clothing that receives an exposure to a chemical or a chemical mixture shall be disposed of if decontamination will not stop the chemical assault on the garment and the protective qualities will be diminished or nullified.

7.7.2.1 Disposal shall be in accordance with applicable state or federal regulations.

7.8 Protective Clothing and Equipment for Wildland Fire Fighting.

7.8.1* The fire department shall establish SOPs for the use of wildland protective clothing and equipment.

7.8.2 Members who engage in or are exposed to the hazards of wildland fire-fighting operations shall be provided with and use protective garments and protective equipment that meet the requirements of NFPA 1977.

7.8.3* Members who engage in or are exposed to the hazards of wildland fire-fighting operations shall be provided with a fire shelter, in a crush-resistive case, and wear it in such a way as to allow for rapid deployment.

7.8.4* The fire department shall ensure that personnel engaged in wildland fire-fighting operations have continuous access to potable water.

7.9 Protective Ensembles for Technical Rescue Operations.

7.9.1 The selection, care, and maintenance of protective ensembles for technical rescue operations shall be as specified in NFPA 1855.

7.9.2 Members of special teams whose primary function is search, rescue, recovery, and site stabilization operations for technical rescue incidents other than wilderness or water rescue incidents shall be provided with and shall use a protective ensemble that is certified as compliant with NFPA 1951.

7.9.2.1 Before emergency response personnel are assigned to technical rescue incidents, the incident commander shall perform a risk assessment of the expected hazards to determine the type of protective ensembles and other protective equipment that is needed.

7.9.2.2 Where the risk assessment indicates exposure to physical and thermal hazards are expected, utility technical rescue protective ensembles and ensemble elements shall be used.

7.9.2.3 Where the risk assessment indicates exposure to physical, thermal, liquid, and body fluid-borne pathogen hazards are expected, rescue and recovery technical rescue protective ensembles and ensemble elements shall be used.

7.9.2.4 Where the risk assessment indicates exposure to physical, thermal, liquid, and body fluid-borne pathogen hazards and CBRN agents in vapor, liquid splash, and particulate forms are expected during terrorism incident operations, CBRN technical rescue protective ensemble and ensemble elements requirements shall be used.

7.9.3 The protective coat and protective trousers shall have at least a 2 in. (50 mm) overlap of all layers so there is no gaping of the total thermal and barrier protection when the protective garments are worn.

7.9.3.1 The minimum overlap shall be determined by measuring the garments on the wearer, without respiratory protection, in both of the following conditions:

- (1) Position A — standing, hands together reaching overhead as high as possible
- (2) Position B — standing, hands together reaching overhead, with the body bent forward at a 90-degree angle, to the side (either left or right), and to the back

7.9.3.2 Single-piece protective coveralls shall not be required to have an overlap of all layers, provided there is continuous composite protection.

7.9.4 Members engaged in technical rescue operations that require respiratory protection shall be provided with and shall use respirators that are certified by NIOSH to 42 CFR 84, “Approval of Respiratory Protective Devices.”

7.9.4.1* Where air-purifying respirators (APRs) and powered air-purifying respirators (PAPRs) are selected to provide the respiratory protection, the APRs and PAPRs shall be provided with the chemical or particulate filter elements that provide protection against the specific contaminants based upon the anticipated level of exposure risk associated with different response situations.

7.9.4.2* Where it cannot be determined that an APR or PAPR will provide effective protection against the contaminant, or if the identity of the contaminant is not known, SCBA shall be worn until it can be determined that other respiratory protection can be used.

7.9.4.3 Where SCBA are selected to provide the respiratory protection, the SCBA shall meet the applicable requirements of 7.14.1.

7.9.5 Members who engage in or are exposed to the hazards of search, rescue, recovery, and site stabilization for technical rescue shall be provided with and shall use primary eye protection that meets the requirements of NFPA 1951.

7.9.6 Technical rescue protective clothing and protective equipment shall be used and maintained in accordance with the manufacturer's instructions.

7.9.6.1 The fire department shall establish a maintenance and inspection program for technical rescue protective clothing and equipment.

7.9.6.2 Proper decontamination procedures for all technical rescue protective clothing and equipment shall be followed to prevent contamination of the user or support personnel.

7.10* Protective Clothing and Equipment for Surface Water Operations.

7.10.1 Members of special teams whose primary function is surface water search and rescue operations or other surface water incident operations, including operations in surface water, swift water, tidal water, surf, and ice, shall be provided with and shall use a protective ensemble that is certified as compliant with NFPA 1952.

7.10.2 Surface water operations protective clothing and protective equipment shall be used and maintained in accordance with the manufacturer's instructions.

7.10.3 The fire department shall establish a maintenance and inspection program for surface water operations protective clothing and equipment.

7.10.4 Proper decontamination procedures for all surface water protective clothing and equipment shall be followed to prevent contamination of the user or support personnel.

N 7.11 Protective Clothing for Fire Investigators.

N 7.11.1 The fire department shall conduct a risk assessment of all fire investigation activities.

N 7.11.2 The fire department shall develop SOPs outlining the minimum required levels of protection based on the timeline and type of activities that are occurring on the fireground.

N 7.11.3 When exposed to chemicals or particulates at the fire investigation scene, outer layer garments shall be doffed at the fire investigation scene.

N 7.11.4 Outer layer garments shall be discarded or cleaned in accordance with 7.1.6.

7.12 Respiratory Protection Program.

7.12.1 The fire department shall adopt and maintain a respiratory protection program that addresses the selection, care, maintenance, and use of respiratory protection equipment (RPE), medical surveillance, training in respirator use, and the assurance of air quality.

7.12.1.1* The selection, care, and maintenance of open-circuit SCBA shall be as specified in NFPA 1852.

7.12.1.2 Training in respirator use shall include knowledge of hazards, hazard assessment, selection of RPE based on hazard exposure levels, fit testing of respirators, and respirator inspection.

7.12.2 The fire department shall develop and maintain standard operating procedures that are compliant with this standard and that address the use of respiratory protection.

7.12.3 Members shall be qualified at least annually in the use of RPE that they are authorized to use.

7.12.4* Reserve SCBA shall be provided to maintain the required number in service when maintenance or repairs are being conducted.

7.12.5 A reserve air supply shall be provided by use of reserve cylinders or by an on-scene refill capability, or both.

7.12.6 RPE shall be stored in a ready-for-use condition and shall be protected from damage or exposure to rough handling, excessive heat or cold, moisture, or other elements.

7.12.7* When engaged in any operation where members could encounter atmospheres that are IDLH or potentially IDLH, or where the atmosphere is undefined or hazardous (including overhaul), the fire department shall provide and require all members to use SCBA that has been certified as being compliant with NFPA 1981 or NFPA 1986 (for non-fire-fighting operations).

7.12.8* Members using SCBA shall not compromise the protective integrity of the SCBA for any reason when operating in IDLH, potentially IDLH, or undefined or hazardous atmospheres (including overhaul) by removing the facepiece or disconnecting any portion of the SCBA that would allow the ambient atmosphere to be breathed.

▲ **7.12.9*** Respiratory protection for any entry into the post-fire environment before or after overhaul shall be at least a NIOSH-certified self-contained breathing apparatus for at least the first 2 hours post-extinguishment.

7.13 Breathing Air. Breathing air used to fill SCBA cylinders shall meet the requirements specified in NFPA 1989.

7.14 Respiratory Protection Equipment.

7.14.1 SCBA.

7.14.1.1 All open-circuit SCBA that are purchased new shall be certified as compliant with NFPA 1981 (for fire-fighting operations) or NFPA 1986 (non-fire-fighting operations) and shall also be certified by NIOSH as compliant with NIOSH *Standard for Chemical, Biological, Radiological, and Nuclear (CBRN) Open Circuit Self-Contained Breathing Apparatus (SCBA)*.

▲ **7.14.1.2** Open-circuit SCBA shall be removed from fire service use in accordance with NFPA 1852.

7.14.1.3* Closed-circuit SCBA shall be permitted when long-duration SCBA is required.

■ **7.14.1.3.1** Closed-circuit SCBAs shall not be permitted for use with NFPA 1991 ensembles.

7.14.1.4 Closed-circuit SCBA shall be NIOSH certified with a minimum rated service life of at least 2 hours and shall operate in the positive-pressure mode only.

7.14.2 Supplied-Air Respirators.

7.14.2.1 Supplied-air respirator units used shall be of the type and manufacture employed by the AHJ.

7.14.2.2 Supplied-air respirators other than SCBA shall not be used in IDLH atmospheres unless equipped with a NIOSH-certified emergency escape air cylinder and a pressure-demand facepiece.

7.14.2.3 Supplied-air respirators, Type C Pressure-Demand Class, shall not be used in IDLH atmospheres unless they meet manufacturers' specifications for that purpose.

7.14.3 Air-Purifying Respirators.

7.14.3.1 Fit-tested air-purifying respirators (APRs) shall be used only in non-IDLH atmospheres for those contaminants that NIOSH certifies them against.

7.14.3.2 The AHJ shall provide NIOSH-certified respirators that protect the user and ensure compliance with all other OSHA requirements.

7.14.3.3* The AHJ shall establish a policy to ensure canisters and cartridges are changed before the end of their service life.

7.14.3.4* Wildland fire-fighting respirators shall be compliant with NFPA 1984.

▲ **7.15 Fit Testing.**

7.15.1* The facepiece seal capability of each member qualified to use RPE shall be verified by quantitative fit testing following procedures set forth in 29 CFR 1910.134, "Respiratory Protection," and ANSI Z88.2, *Practices for Respiratory Protection*, on an annual basis and whenever new types of RPE or facepieces are issued.

7.15.2 The fit of the RPE of each new member shall be tested before the members are permitted to use RPE in a hazardous atmosphere.

7.15.2.1 Only members with a properly fitting facepiece shall be permitted by the fire department to function in a hazardous atmosphere with RPE.

7.15.3 Fit testing of tight-fitting atmosphere-supplying respirators and tight-fitting powered air-purifying respirators shall be accomplished by performing quantitative fit testing in the negative-pressure mode, regardless of the mode of operation (negative or positive pressure) that is used for respiratory protection.

7.15.4 Records of facepiece fitting tests shall include at least the following information:

- (1) Name of the member tested
- (2) Type of fitting test performed
- (3) Specific make and model of facepieces tested
- (4) Pass/fail results of the tests

7.15.5* The protection factor produced shall be at least 500 for negative-pressure facepieces for the person to pass the fitting test with that make of full facepiece.

7.15.6* If a satisfactory fit cannot be achieved for an individual with one design of facepiece, the fire department shall work with the manufacturer of the respiratory protection equipment (RPE) to find a facepiece design that fits satisfactorily for that member.

7.16 Using Respiratory Protection.

7.16.1 Respirators shall not be worn when a member has any conditions that prevent a good face seal.

7.16.2 Nothing shall be allowed to enter or pass through the area where the respiratory protection facepiece is designed to seal with the face, regardless of the specific fitting test measurement that can be obtained.

7.16.3* Members who have a beard or facial hair at any point where the facepiece is designed to seal with the face or whose hair could interfere with the operation of the unit shall not be permitted to use respiratory protection at emergency incidents or in hazardous or potentially hazardous atmospheres.

7.16.3.1 These restrictions shall apply regardless of the specific fitting test measurement that can be obtained under test conditions.

7.16.4 When a member must wear spectacles while using full facepiece respiratory protection, the facepiece shall be fitted with spectacles in such a manner that they shall not interfere with the facepiece-to-face seal.

7.16.5* Spectacles with any strap or temple bars that pass through the facepiece-to-face seal area shall be prohibited.

7.16.6* Use of contact lenses shall be permitted during full facepiece respiratory protection use, provided that the member has previously demonstrated successful long-term contact lens use.

7.16.7 Any head covering that passes between the sealing surface of the respiratory protection facepiece and the member's face shall be prohibited.

7.16.8 The respiratory protection facepiece and head harness with straps shall be worn under the protective hoods.

7.16.9 The respiratory protection facepiece and head harness with straps shall be worn under the head protection of any hazardous chemical-protective clothing.

7.16.10 Helmets shall not interfere with the respiratory protection facepiece-to-face seal.

7.17 SCBA Cylinders.

7.17.1* SCBA cylinders made of aluminum alloy 6351-T6 shall be inspected annually, both externally and internally, by a qualified person.

7.17.2 SCBA cylinders shall be hydrostatically tested as required by the manufacturers and applicable governmental agencies.

7.17.3 SCBA cylinders used for structural fire fighting shall have a minimum gas capacity of 59.99 ft³ (1699 L) of air.

7.17.4 In-service SCBA cylinders shall be stored fully charged.

7.17.5 In-service SCBA cylinders shall be inspected weekly, monthly, and prior to filling, according to NIOSH requirements, CGA standards, and manufacturers' recommendations.

7.17.6* During filling of SCBA cylinders, all personnel and operators shall be protected from catastrophic failure of the cylinder, except as provided in 7.17.8.

7.17.7* Fire departments utilizing rapid filling of SCBA cylinders shall identify those unique emergency situations where rapid filling shall be permitted to occur.

7.17.8 The fire department risk assessment process shall incorporate standard operating procedures to identify those situations in 7.17.7.

7.17.9 Rapid refilling of SCBA while being worn by the user shall only be used under the following conditions:

- (1) Manufacturer permitted, NIOSH-approved fill options are used.
- (2) The risk assessment process has identified procedures for limiting personnel exposure during the refill process and has provided for adequate equipment inspection and member safety.
- (3) An imminent life-threatening situation occurs that requires immediate action to prevent the loss of life or serious injury.
- (4) Prior to a life-threatening situation occurring that could require immediate action to prevent the loss of life or serious injury.

7.17.10 An emergency escape breathing support system (EEBSS), also known as buddy breathing, shall be utilized where it is accomplished through the use of a NIOSH-approved connection that does not compromise the system integrity of either of the users giving or receiving air.

7.17.10.1 An EEBSS shall not be initiated if the "donor" cylinder has less than 21.18 ft³ (600 L) of air remaining.

7.17.11 If a supplied source is not immediately available, transfilling of cylinders shall be done in accordance with the manufacturers' instructions.

7.17.12* Standardized IDLH exiting shall require that an exit strategy will be practiced when the SCBA cylinder reaches a level of 21.18 ft³ (600 L) or more.

7.18 Personal Alert Safety System (PASS).

7.18.1* PASS devices shall meet the requirements of NFPA 1982.

Δ 7.18.2* Each member shall be provided with, use, and activate his or her PASS devices in all emergency situations that could jeopardize that person's safety due to atmospheres that could be IDLH, in incidents that could result in entrapment, in structural collapse of any type, or as directed by the incident commander or safety officer.

7.18.3 Each PASS device shall be tested at least weekly and prior to each use and shall be maintained in accordance with the manufacturers' instructions.

7.19 Life Safety Rope and System Components.

7.19.1 All life safety ropes, harnesses, and hardware used by fire departments shall meet the applicable requirements of NFPA 1983.

7.19.2 Rope used to support the weight of members or other persons during rescue, fire fighting, other emergency operations, or training evolutions shall be life safety rope and shall meet the requirements of NFPA 1983.

7.19.2.1 Life safety rope used for any other purpose shall be removed from service and destroyed.

7.19.3* Life safety rope used for rescue at fires or other emergency incidents or for training shall be permitted to be reused if inspected before and after each such use in accordance with the manufacturers' instructions and provided that the following criteria are met:

- (1) The rope has not been visually damaged by exposure to heat, direct flame impingement, chemical exposure, or abrasion.
- (2) The rope has not been subjected to any impact load.
- (3) The rope has not been exposed to chemical liquids, solids, gases, mists, or vapors of any material known to deteriorate rope.

7.19.3.1 If the rope used for rescue at fires or other emergency incidents or for training does not meet the criteria set forth in 7.19.3(1), 7.19.3(2), or 7.19.3(3) or fails the visual inspection, it shall be destroyed.

7.19.3.2 If there is any question regarding the serviceability of the rope after consideration of the criteria listed in 7.19.3, the rope shall be taken out of service.

7.19.4 Rope inspection shall be conducted by qualified inspectors in accordance with rope inspection procedures established and recommended by the rope manufacturer to assure rope is appropriate for reuse.

7.19.5 Records shall be maintained to document the use of each life safety rope used at fires and other emergency incidents or for training.

7.20 Face and Eye Protection.

7.20.1 Primary eye protection appropriate for a given specific hazard shall be provided for and used by members exposed to that specific hazard.

7.20.1.1* Primary eye protection shall meet the requirements of ANSI Z87.1, *Practice for Occupational and Educational Eye and Face Protection*.

7.20.1.2 Face protection shall be in addition to primary eye protection unless SCBA is being used.

7.20.1.3 The helmet faceshield alone shall not be considered and shall not be used as primary eye protection.

7.20.2 The full facepiece of SCBA shall constitute face and eye protection when worn.

7.20.2.1 SCBA that has a facepiece-mounted regulator that when disconnected provides a direct path for flying objects to strike the face or eyes shall have the regulator attached in order to be considered face and eye protection.

7.20.3 When operating in the hazardous area at an emergency scene without the full facepiece of respiratory protection being worn, members shall wear primary eye protection that is designed to protect the member's eyes from the expected hazards.

7.21 Hearing Protection.

7.21.1* Hearing protection shall be provided for and used by all members operating or riding on fire apparatus when subject to noise in excess of 90 dBA.

7.21.2* Hearing protection shall be provided for and used by all members when exposed to noise in excess of 90 dBA caused by power tools or equipment, other than in situations where the use of such protective equipment would create an additional hazard to the user.

7.21.3* The fire department shall engage in a hearing conservation program to identify and reduce or eliminate potentially harmful sources of noise in the work environment.

▲ 7.22 Ballistic Protective Equipment. In accordance with the requirements of NFPA 3000, the fire department shall provide ballistic protective equipment to personnel exposed to ballistic risks, or other hostile threats, consistent with expected duties.

7.23 New and Existing Protective Clothing and Protective Equipment.

7.23.1 All new protective clothing and protective equipment shall meet the requirements of the current edition of the respective NFPA standard for that protective clothing or protective equipment.

7.23.2 Existing protective clothing and protective equipment shall have been in compliance with the edition of the respective NFPA standard that was current when the protective clothing or protective equipment was manufactured.

7.23.3 Protective ensembles for structural fire fighting and protective ensembles for proximity fire fighting shall be retired in accordance with NFPA 1851.

7.23.4 Open circuit SCBA for emergency services shall be retired in accordance with NFPA 1852.

7.23.5 The fire department shall establish a program for retirement and disposal of all protective clothing and equipment.

7.23.6 Unless otherwise subject to retirement requirements by an applicable NFPA standard(s), the fire department shall use the retirement criteria provided by the manufacturer.

Chapter 8 Emergency Operations

8.1 Incident Management.

8.1.1* Emergency operations and other situations that pose similar hazards, including but not limited to training exercises, shall be conducted in a manner that recognizes hazards and prevents accidents and injuries.

8.1.2 An incident management system that meets the requirements of NFPA 1561 shall be established with written standard operating procedures applying to all members involved in emergency operations.

8.1.3 The incident management system shall be utilized at all emergency incidents.

8.1.4 The incident management system shall be applied to drills, exercises, and other situations that involve hazards similar to those encountered at actual emergency incidents and to simulated incidents that are conducted for training and familiarization purposes.

8.1.5* At an emergency incident, the incident commander shall be responsible for the overall management of the incident and the safety of all members involved at the scene.

8.1.6 As incidents escalate in size and complexity, the incident commander shall divide the incident into divisions or groups and assign a safety officer to assess the incident scene for hazards or potential hazards.

8.1.7* At an emergency incident, the incident commander shall establish an organization with sufficient supervisory personnel to control the position and function of all members operating at the scene and to ensure that safety requirements are satisfied.

8.1.8* At an emergency incident, the incident commander shall have the responsibility for the following:

- (1) Arrive on scene before assuming command
- (2) Assume and confirm command of an incident and take an effective command position
- (3) Perform situation evaluation that includes risk assessment
- (4) Initiate, maintain, and control incident communications
- (5) Develop an overall strategy and an incident action plan and assign companies and members consistent with the standard operating procedures
- (6) Initiate and maintain a tactical worksheet or system, which maintains resource and personnel accountability and functions as the initial incident plan
- (7) Assign or assume responsibility of the safety officer in accordance with NFPA 1561
- (8) Develop an effective incident organization by managing resources, maintaining an effective span of control, and maintaining direct supervision over the entire incident, and designate supervisors in charge of specific areas or functions
- (9) Review, evaluate, and revise the incident action plan as required
- (10) Continue, transfer, and terminate command

- (11) On incidents under the command authority of the fire department, provide for liaison and coordination with all other cooperating agencies
- (12) On incidents where other agencies have jurisdiction, implement a plan that designates one incident commander or that provides for unified command
- (13) Determine the need for, and appoint a safety officer in accordance with NFPA 1561, 5.9.6

8.1.8.1 Interagency coordination shall meet the requirements of NFPA 1561.

N 8.1.9 The responsibilities of a safety officer, which shall apply to any incident, include the following:

- (1) Communicate to the incident commander changing incident conditions, activities, operations, hazards, and unacceptable risk-taking circumstances that warrant a change in the incident action plan.
- (2) Exercise emergency authority to stop, alter, or suspend activities that are judged to present an imminent threat to responder safety.
- (3) Establish emergency incident hazard control zones, including collapse zones, based on current and changing fire conditions, building construction/structural factors, hazardous energy integrity, and incident operational effectiveness.
- (4) Communicate emergency incident hazard control zones to the incident commander and responders in accordance with Section 8.7.
- (5) Ensure that members operating in IDLH environments have adequate means of rapid egress.
- (6) Ensure that personnel safety systems have been established including required PPE levels, “mayday” rapid intervention crew(s), and a personal accountability system that is in accordance with NFPA 1561, Section 8.5.
- (7) Monitor radio traffic so that barriers to effective communications are corrected.
- (8) Ensure that effective responder rehabilitation efforts have been established in accordance with NFPA 1584.
- (9) Communicate to the incident commander the need for assistant safety officers.
- (10) Develop preventive measures for incident commander consideration to further reduce responder exposure to hazards.
- (11) Ensure that contaminated personnel, tools, hose, equipment, and PPE are processed in accordance with contamination-reduction SOPs prior to being returned to service.
- (12) Begin investigation procedures for accidents that have occurred within the incident area.
- (13) Document safety officer actions, interventions, and post-incident follow-up needs.

8.2 Communications.

8.2.1 The fire department shall establish and ensure the maintenance of a fire dispatch and incident communications system that meets the requirements of NFPA 1561 and NFPA 1221.

8.2.2 While operating in a hot or warm zone, all personnel shall be equipped with a portable radio provided by the fire department.

8.2.3* The fire department standard operating procedures shall provide direction in the use of clear text radio messages for emergency incidents.

8.2.3.1 The standard operating procedures shall use “emergency traffic” as a designator to clear the radio traffic for an emergency affecting the incident.

8.2.3.2 This “emergency traffic” shall be permitted to be declared by any member who becomes aware of an emergency affecting the incident.

8.2.4* When a member has declared “emergency traffic,” that person shall use clear text to identify the type of emergency, change in conditions, or tactical operations.

8.2.4.1 The member who has declared the “emergency traffic” shall conclude the “emergency traffic” message by transmitting “all clear, resume radio traffic” to end the emergency situation or to re-open the radio channels to communication after announcing the emergency message.

8.2.4.2 The standard operating procedures shall use “mayday” as a designator to identify when a member is in a life-threatening situation and in need of immediate assistance.

8.2.4.3 This “mayday” shall be permitted to be declared by any member who is in or who becomes aware of a member who is in a life-threatening situation and in need of immediate assistance.

8.2.4.4 The incident commander shall conclude the “mayday” by transmitting “Mayday cleared, resume normal radio traffic.”

8.2.5* The fire department communications center shall start an incident clock when the first arriving unit is on-scene of a working structure fire or hazardous materials incident, or when other conditions appear to be time sensitive or dangerous.

8.2.5.1* The dispatch center shall notify the incident commander at every 10-minute increment with the time that resources have been on the incident until the fire is knocked down or the incident becomes static.

8.2.5.2 The incident commander shall be permitted to cancel the incident clock notification through the fire department communications center based on the incident conditions.

8.3 Crew Resource Management (CRM) During Emergency Operations.

8.3.1* The incident commander shall integrate Crew Resource Management (CRM) into the regular functions of incident command.

8.4 Risk Management During Emergency Operations.

8.4.1* The incident commander shall integrate risk management into the regular functions of incident command.

8.4.2 The incident commander shall determine the life safety profile of the incident and apply the most appropriate level of risk to first responders consistent with the principles in 8.4.2.1.

8.4.2.1* The concept of risk management shall be utilized on the basis of the following principles:

- (1) Activities that present a significant risk to the safety of members shall be limited to situations where there is a potential to save endangered lives.
- (2) Activities that are routinely employed to protect property shall be recognized as inherent risks to the safety of members, and actions shall be taken to reduce or avoid these risks.

- (3) No risk to the safety of members shall be acceptable when there is no possibility to save lives or property.
- (4) In situations where the risk to fire department members is excessive, activities shall be limited to defensive operations.

8.4.3* The incident commander shall evaluate the risk to members with respect to the purpose and potential results of their actions in each situation.

8.4.4 Risk management principles shall be routinely employed by supervisory personnel at all levels of the incident management system to define the limits of acceptable and unacceptable positions and functions for all members at the incident scene.

8.4.5* At significant incidents and special operations incidents, the incident commander shall assign a safety officer who has the expertise to evaluate hazards and provide direction with respect to the overall safety of personnel.

8.4.6 At terrorist incidents or other incidents involving potential CBRN exposure, the incident commander shall assess the risk to members and ensure that protective equipment appropriate for the risk is available for and used by members.

8.4.7* Fire departments shall conduct a risk assessment to determine the need to provide appropriate chemical antidote kits for members in the event of a CBRN incident.

8.5 Personnel Accountability During Emergency Operations.

8.5.1* The fire department shall establish written standard operating procedures for a personnel accountability system that is in accordance with NFPA 1561.

8.5.2 The fire department shall consider local conditions and characteristics in establishing the requirements of the personnel accountability system.

8.5.3 It shall be the responsibility of all members operating at an emergency incident to actively participate in the personnel accountability system.

8.5.4 The incident commander shall maintain an awareness of the location and function of all companies or crews at the scene of the incident.

8.5.5 Officers assigned the responsibility for a specific **division or group** at an incident shall directly supervise and account for the companies and/or crews operating in their specific area of responsibility.

8.5.6 Company officers shall maintain an ongoing awareness of the location and condition of all company members.

8.5.7 Where assigned as a company, members shall be responsible to remain under the supervision of their assigned company officer.

8.5.8 Members shall be responsible for following personnel accountability system procedures.

8.5.9 The personnel accountability system shall be used at all incidents.

8.5.10* The fire department shall develop, implement, and utilize the system components required to make the personnel accountability system effective.

8.5.11* The standard operating procedures shall provide the use of additional accountability officers based on the size, complexity, or needs of the incident.

8.5.12 The incident commander and members who are assigned a supervisory responsibility for a **division or group** that involves multiple companies or crews under their command shall have assigned a member(s) to facilitate the ongoing tracking and accountability of assigned companies and crews.

8.6 Members Operating at Emergency Incidents.

8.6.1 The fire department shall provide an adequate number of personnel to safely conduct emergency scene operations.

8.6.1.1 Career fire departments shall meet the requirements of 5.2.4 of NFPA 1710.

8.6.1.2 Volunteer fire departments shall meet the requirements of Section 4.3 of NFPA 1720.

8.6.1.3* Operations shall be limited to those that can be safely performed by the personnel available at the scene.

8.6.2 No member or members shall commence or perform any fire-fighting function or evolution that is not within the established safety criteria of the organizational statement as specified in 4.1.1.

8.6.3 When inexperienced members are working at an incident, direct supervision shall be provided by more experienced officers or members.

8.6.3.1 The requirement of 8.6.3 shall not reduce the training requirements contained in 5.1.3 and 5.1.4.

8.6.4* Members operating in hazardous areas at emergency incidents shall operate in crews of two or more.

8.6.5* Crew members operating in hazardous areas shall be in communication with each other through visual, audible, or physical means or safety guide rope, in order to coordinate their activities.

8.6.6 Crew members shall be in proximity to each other to provide assistance in case of emergency.

8.6.7 In accordance with the requirements of 8.8.2, at least two members shall be present outside the hazardous area available for assistance or rescue at emergency operations where members are operating inside a hazardous area.

8.6.8* At aircraft rescue fire-fighting incidents, the initial IDLH shall be identified as the area from wingtip to wingtip for the specific aircraft.

8.6.8.1 After size-up, the incident commander shall adjust the IDLH designation as the situation dictates, to meet operational needs.

8.6.8.2 Aircraft rescue fire-fighting operations inside the area identified as the IDLH shall be in accordance with 8.6.4.

8.6.9* When members are operating at a structure fire or performing special operations, the highest available level of emergency medical care shall be standing by at the scene with medical equipment and transportation capabilities.

8.6.9.1 Basic life support (BLS) shall be the minimum level of emergency medical care.

8.6.10 Emergency medical care and medical monitoring at hazardous materials incidents shall be provided by or supervised by personnel who meet the minimum requirements of NFPA 473.

8.6.11 At all emergency operations, except as required in 8.6.9 and 8.6.10, the incident commander shall evaluate the risk to the members operating at the scene and, if necessary, request that at least BLS personnel and patient transportation be available.

8.6.12 When members are operating from aerial devices, they shall be secured to the aerial device with a system in compliance with NFPA 1983.

8.6.13 The incident commander shall ensure that personnel working in an IDLH atmosphere or hazardous area use applicable protective clothing and SCBA for risks that could be encountered.

8.6.13.1 Members performing overhaul operations shall wear applicable protective clothing and a supplied-air respirator.

8.6.13.2 When overhaul is not actively taking place, fire investigators or other members who enter the fire area following extinguishment shall wear protective clothing and a supplied-air respirator or an appropriate air-purifying respirator for respiratory hazards that could be encountered.

8.6.14* Members involved in water rescue shall be issued and wear personal flotation devices that meet US Coast Guard requirements.

8.6.15 Fire departments shall develop a standard operating procedure for operating near hazardous energy sources.

8.6.15.1* Procedures shall be developed for isolating personnel from the energized conductor.

8.6.15.2 All fire fighters shall be made aware of the increased danger involving downed power lines when working, especially in limited visibility.

8.6.15.3 Fire department personnel shall not be permitted to move or cut electrical meters.

8.6.15.4 Fire fighters shall locate and isolate downed electrical wires and wait for utility company personnel to disconnect the power to those wires.

8.6.15.4.1 In cases of known immediate life-threatening situations, properly trained and equipped personnel shall be permitted to mitigate the hazard.

8.6.15.5* Fire fighters shall keep a minimum safe distance from an overhead or downed power line until the line is de-energized and always function under the premise that a line is hot.

8.6.15.6 The incident commander shall convey and continually re-evaluate strategic decisions related to fireground electrical hazards to all personnel on the scene.

8.6.15.7 All fire fighters shall be made aware of the hazards of applying a solid-stream water application around energized electrical conductors.

8.6.15.8 All fire fighters shall be repeatedly trained in safety-related practices for working around electrical energy.

8.6.15.9 Fire departments shall develop a standard operating procedure for operating near rooftop photovoltaic (PV) generators.

8.6.15.9.1* Procedures shall be developed for isolating personnel from the energized equipment.

8.6.15.9.2 All fire fighters shall be made aware of the increased danger involving rooftop PV equipment when working, especially in limited visibility.

8.6.15.9.3 Fire department personnel shall notify the incident commander of any PV electrical generators on the premises.

8.6.15.9.4 In cases of known immediate life-threatening situations, properly trained and equipped personnel shall be permitted to mitigate the hazard.

8.6.15.9.5* Fire fighters shall keep a minimum distance from PV electrical generators until the system is de-energized and shall always function under the premise that the array is hot.

8.6.15.9.6 The incident commander shall convey to all personnel on the scene and continually re-evaluate strategic decisions related to fireground electrical hazards involving PV systems.

8.6.15.9.7 All fire fighters shall be made aware of the hazards of applying a solid-stream water application around energized PV systems.

8.6.15.9.8 All fire fighters shall be repeatedly trained in safety-related practices for working around PV systems.

N 8.6.16 Fire departments shall develop an SOP for operations during a wildland fire in accordance with NFPA 1143.

8.7 Emergency Incident Hazard Control Zones.

8.7.1 Emergency incident hazard control zones shall be established at every emergency incident to identify the level of risk to emergency responders and the appropriate level of PPE.

N 8.7.1.1 Hazard control zones shall be utilized for the purpose of emergency incident contamination control.

8.7.2 The perimeters of the emergency incident hazard control zones shall be designated by the incident commander.

8.7.3 If the perimeters change during the course of the incident, these changes shall be communicated to all members on the scene.

8.7.4* Emergency incident hazard control zones shall be as follows:

- (1) Designated as no-entry, hot, warm, and cold (similar to hazardous materials incidents)
- (2) Marked with the applicable colored hazard tape, signage, or other appropriate means wherever possible
- (3) Communicated to all personnel attending the incident prior to being assigned to a hazard zone

Δ 8.7.4.1* Hot zone (red tape) is the area that presents the greatest risk of injury and contamination exposure to members and will often be classified as an IDLH atmosphere; therefore all members shall wear all of the PPE appropriate for the risks that might be encountered while in the hot zone.

8.7.4.1.1* All members operating within the hot zone shall have an assigned task.

8.7.4.2* Warm zone (yellow tape) shall serve as a limited access area for members directly aiding or in support of operations in the hot zone where significant risk of human injury can still exist.

N 8.7.4.2.1* The warm zone shall serve as a limited access area where preliminary exposure reduction strategies are employed and the threat of cross contamination persists.

8.7.4.3 Cold zone (green tape) shall establish the public exclusion or clean zone where there are minimal risks for human injury or exposure, or both, in this zone.

N 8.7.4.3.1 The cold zone shall be established outside the area where contamination is being mitigated.

8.7.4.4 No-entry zone (red/white chevron tape) is the area at an incident scene that no person(s) shall be permitted to enter due to imminent hazard(s), dangerous conditions, or the need to protect evidence.

8.7.4.4.1* Where a no-entry zone is designated, no personnel shall enter regardless of PPE.

8.7.4.4.2* Where red/white chevron tape is not readily available, no-entry zones shall be marked using three horizontal strands of yellow barrier tape, spaced 18 to 24 in. (460 to 610 mm) apart and securely fixed to stationary supports.

8.7.4.4.3* No-entry zones shall be illuminated to enhance nighttime visibility.

8.7.4.4.4 Where the threat of a building collapse exists, a collapse zone shall be established.

8.7.4.4.4.1 A collapse zone shall be a No-Entry Zone.

8.7.4.4.4.2* Collapse zones shall be established around the perimeter of the building at a distance that is equal to a minimum of 1.5 times the height of the building.

8.7.5 The incident commander shall ensure that the designation of the **correct** protective clothing and equipment is commensurate with the hazard in the zone the member will be operating in.

8.7.6 All officers and members shall ensure the **correct** use of **PPE** within that zone.

8.7.7 The process of utilizing **emergency incident** hazard control zones shall continue until the incident hazards have been mitigated or the incident is over.

Δ 8.8 Rapid Intervention for Rescue of Members.

8.8.1 The fire department shall provide personnel for the rescue of members operating at emergency incidents.

8.8.1.1 Personnel assigned to perform the function of the initial rapid intervention crew (IRIC) or the rapid intervention crew (RIC) shall be trained on the requirements of NFPA 1407.

8.8.2* In the initial stages of an incident where only one crew is operating in the hazardous area at a working structural fire, a minimum of four individuals shall be required, consisting of two members working as a crew in the hazardous area and two standby members present outside this hazardous area available for assistance or rescue at emergency operations where entry into the danger area is required.

8.8.2.1 The “initial stages” of an incident shall encompass the tasks undertaken by the first arriving company with only one crew assigned or operating in the hazardous area.

8.8.2.2 The standby members shall be responsible for maintaining a constant awareness of the number and identity of members operating in the hazardous area, their location and function, and time of entry.

8.8.2.3 The standby members shall remain in radio, visual, voice, or signal line communication with the crew.

8.8.2.4* One standby member shall be permitted to perform other duties outside of the hazardous area, such as apparatus operator, incident commander, or technician or aide, provided constant communication is maintained between the standby member and the members of the crew.

8.8.2.5 The assignment of any personnel, including the incident commander, the safety officer, or operators of fire apparatus, shall not be permitted as standby personnel if by abandoning their critical task(s) to assist or, if necessary, perform rescue, they clearly jeopardize the safety and health of any fire fighter working at the incident.

8.8.2.5.1 No one shall be permitted to serve as a standby member of the fire-fighting crew when the other activities in which the fire fighter is engaged inhibit the fire fighter's ability to assist in or perform rescue, if necessary, or are of such importance that they cannot be abandoned without placing other fire fighters in danger.

8.8.2.6 The standby member shall be provided with full protective clothing, protective equipment, and SCBA appropriate for the risk that might be encountered.

8.8.2.6.1 The full protective clothing, protective equipment, and SCBA shall be immediately accessible for use by the outside crew if the need for rescue activities inside the hazardous area occurs.

8.8.2.7 The standby members shall don full protective clothing, protective equipment, and SCBA prior to entering the hazardous area.

8.8.2.8 When only a single crew is operating in the hazardous area in the initial stages of the incident, this standby member shall be permitted to assist with, or if necessary perform, rescue for members of his or her crew, provided that abandoning his or her task does not jeopardize the safety or health of the crew.

8.8.2.9 Once a second crew is assigned or operating in the hazardous area, the incident shall no longer be considered in the “initial stage,” and at least one rapid intervention crew shall be deployed that complies with the requirements of 8.8.2.

8.8.2.10 Initial attack operations shall be organized to ensure that if, on arrival at the emergency scene, initial attack personnel find an imminent life-threatening situation where immediate action could prevent the loss of life or serious injury, such action shall be permitted with less than four personnel.

8.8.2.10.1 No exception as permitted in 8.8.2.10 shall be allowed when there is no possibility to save lives.

8.8.2.10.2 Any such actions taken in accordance with 8.8.2.10 shall be thoroughly investigated by the fire department with a written report submitted to the fire chief.

8.8.3 As the incident expands in size or complexity, which includes an incident commander's requests for additional resources beyond a fire department's initial attack assignment, the dedicated rapid intervention crew (RIC) shall on arrival of these additional resources be either one of the following:

- (1) On-scene members designated and dedicated as an RIC
- (2) On-scene crew/company or crews/companies located for rapid deployment and dedicated as RICs

8.8.3.1 During fire fighter rescue operations each crew/company shall remain intact.

8.8.4 An RIC shall consist of at least two members and shall be available for immediate rescue of a member or a crew.

8.8.4.1 Each RIC shall be fully equipped with protective clothing, protective equipment, SCBA, and any specialized rescue equipment that could be needed given the specifics of the operation under way.

8.8.5 At incidents where any SCBA being used is equipped with an RIC universal air connection (UAC), the RIC shall have the specialized rescue equipment necessary to complete the RIC UAC connection to a supplied air source.

8.8.5.1 Where applicable, the breathing air source and any hoses and connections shall meet the requirements of NFPA 1981 and be NIOSH certified to 42 CFR 84, "Approval of Respiratory Protective Devices."

8.8.5.2 The breathing air source shall have no less than 42.37 ft³ (1200 L) of breathing air before entering the hazard area.

8.8.6 The composition and structure of a RIC shall be permitted to be flexible based on the type of incident and the size and complexity of operations.

8.8.7* The incident commander shall evaluate the situation and the risks to operating crews and shall provide one or more RICs commensurate with the needs of the situation.

8.8.8 In the early stages of an incident, which includes the deployment of a fire department's initial attack assignment, the RIC shall be in compliance with 8.2.5.1 and 8.8.2.5 and be either one of the following:

- (1) On-scene members designated and dedicated as an RIC
- (2) On-scene members performing other functions but ready to redeploy to perform RIC functions

8.8.9 The assignment of any personnel shall not be permitted as members of the RIC if abandoning their critical task(s) to perform rescue clearly jeopardizes the safety and health of any member operating at the incident.

8.8.10 During fire fighter rescue operations each crew/company shall remain intact.

8.8.11 At least one dedicated RIC shall be standing by with equipment to provide for the rescue of members that are performing special operations or for members that are in positions that present an immediate danger of injury in the event of equipment failure or collapse.

8.9 Rehabilitation During Emergency Operations.

8.9.1* Personnel shall undergo rehabilitation in accordance with NFPA 1584.

8.9.1.1* Personnel shall not be permitted to use more than two SCBA cylinders before they are sent to rehabilitation operations.

N 8.9.2 Gross decontamination of PPE shall be performed prior to demobilization.

N 8.9.3 The rehabilitation process shall include on-scene personal hygiene immediately following the removal of PPE.

8.10 Scenes of Violence, Civil Unrest, or Terrorism.

8.10.1* Fire department members shall not become involved in any activities at the scene of domestic disturbance, civil unrest, an active shooter, or similar situations where there is ongoing violence, without the confirmed presence of law enforcement personnel who have deemed the scene secure.

8.10.2 Under no circumstances shall fire department equipment or personnel be used for crowd control or **dispersion** purposes.

8.10.3* The fire department shall develop and maintain, in conjunction with the local law enforcement agency/agencies, written standard operating procedures that establish a standardized approach to the safety of members, and that shall govern the roles and responsibilities at incidents that involve violence, active shooters, unrest, or civil disturbance.

8.10.3.1* Standard operating procedures shall include at a minimum the following objectives:

- (1) In accordance with NIMS guidance, the establishment by fire departments and law enforcement of a single command post (CP) and operate using unified command (UC)
- (2) Training with local law enforcement agencies that occurs at least annually
- (3) Use of common communications and clear text terminology
- (4) Consideration of secondary devices at the main scene and secondary scenes in close proximity to the main scene
- (5) For events including incendiary or explosive devices, consideration of fire hazards secondary to the initial blast

8.10.4 The fire department shall be responsible for developing an interagency agreement with its law enforcement agency counterpart to provide protection for fire department members at situations that involve violence.

8.10.5* The fire department shall develop a standard communication method that indicates that an incident crew is faced with a life-and-death situation requiring immediate law enforcement intervention.

8.10.6 Such violent situations shall be considered essentially a law enforcement event, and the fire department shall coordinate with the law enforcement incident commander throughout the incident.

8.10.7 The fire department incident commander shall identify and react to situations that do involve or are likely to involve violence.

8.10.8 In such violent situations, the fire department incident commander shall communicate directly with the law enforcement incident commander to ensure the safety of fire department members.