

# NFPA® 600

## Standard on Facility Fire Brigades

### 2015 Edition



NFPA®, 1 Batterymarch Park, Quincy, MA 02169-7471, USA  
An International Codes and Standards Organization

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**NFPA® 600**  
**Standard on**  
**Facility Fire Brigades**  
**2015 Edition**

This edition of NFPA 600, *Standard on Facility Fire Brigades*, was prepared by the Technical Committee on Loss Prevention Procedures and Practices. It was issued by the Standards Council on November 11, 2014, with an effective date of December 1, 2014, and supersedes all previous editions.

This edition of NFPA 600 was approved as an American National Standard on December 1, 2014.

**Origin and Development of NFPA 600**

In 1902 NFPA adopted *Suggestions for Organizing Private Fire Departments* recommended by the Committee on Private Fire Department Regulations. In 1912 NFPA adopted two pamphlets, *Organization and Execution of Exit Drills* and *Organization and Drilling of Private Fire Brigades*, on the recommendation of the Committee on Private Fire Departments and Fire Drills. In 1924 the NFPA adopted *Suggestions for the Organization, Drilling and Equipment of Private Fire Brigades* on the recommendation of the Committee on Field Practice, and revisions were adopted in 1930, 1937, and 1949.

Jurisdiction for the publication was transferred in 1948 to the new Committee on Fire Brigades and Watchmen, and a revised edition was published in 1955. The guide was completely revised in 1967.

In 1969 the committee was reorganized as the Technical Committee on Loss Prevention Procedures and Practices, and the guide was reconfirmed in 1975. In 1981 a complete revision was accomplished, and a partial revision was made in the 1986 edition, as well as a redesignation from NFPA 27 to NFPA 600.

In 1992 the document was completely revised as a standard to provide a minimum level of occupational safety and health for industrial fire brigade members consistent with the Occupational Safety and Health Administration (OSHA). The standard incorporated the concepts of advanced exterior fire fighting and site-specific hazards for the first time. These concepts were needed for industrial fire brigades to properly address the types of situations they encounter.

In 1996 the document was revised to include industrial fire departments, which were previously addressed in NFPA 1500, *Standard on Fire Department Occupational Safety and Health Program*. This reorganization assisted the authority having jurisdiction and owner/operators in determining the standard they must comply with and if they are in compliance. Other changes made the document more user friendly and better clarified the requirements of the standard.

Changes to the 2000 edition were mainly editorial or were provided for clarification. A noteworthy exception was the change in the number of industrial fire brigade members for interior structural fire fighting. Two industrial fire brigade members were now required to be available for rescue, whereas the previous edition required only one.

The 2005 edition incorporated revised definitions that correspond to preferred terms found in the Glossary of Terms. One of the definition changes incorporated a broader scope for the medical professionals who assess medical and physical fitness of fire brigade members. The term “qualified physician” was replaced by “qualified health care professional” to reflect actual practice.

The 2005 edition added references to the professional qualification standard, NFPA 1081, *Standard for Industrial Fire Brigade Member Professional Qualifications*, which was adopted after the effective date of the 2000 edition. The standard was also revised and reorganized in accordance with the *Manual of Style for NFPA Technical Committee Documents*.

For the 2015 edition, the standard has been reorganized. The Committee believes that the hazards to a fire brigade from interior structural and advanced exterior fire fighting are the same, including the potential for an IDLH environment, and therefore the consolidated requirements from the two separate chapters into one chapter applicable to both. In addition, the Committee has changed the title of the document from *Industrial Fire Brigades* to *Facility Fire Brigades*, recognizing that fire brigades exist beyond industrial settings. The word *facility* now replaces *industrial* throughout the standard.

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

**Committee Scope:** This Committee shall have primary responsibility for documents on fire brigades, guard services, and techniques for securing effective fire loss prevention programs in industrial, commercial, institutional, and similar properties.

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Facility Fire Brigades****2015 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. As an aid to the user, the complete title and edition of the source documents for extracts in mandatory sections of the document are given in Chapter 2 and those for extracts in informational sections are given in Annex B. 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 publications can be found in Chapter 2 and Annex B.

**Chapter 1 Administration****1.1\* Scope.**

**1.1.1** This standard contains minimum requirements for organizing, operating, training, and equipping facility fire brigades when responding to fires in industrial, commercial, institutional, and similar properties.

**1.1.2** This standard provides minimum requirements for the occupational safety and health of facility fire brigade members while performing fire fighting and related response activities.

**1.2\* Purpose.** The purpose of this standard is to provide minimum requirements for organization, operation, training, and occupational safety and health for facility fire brigades.

**1.3 Application.**

**1.3.1\*** This standard shall apply to any organized, group of employees having fire-fighting response duties, such as emergency brigades, emergency response teams, fire teams, and plant emergency organizations.

**1.3.2\*** This standard shall not apply to facility fire brigades that respond to fire emergencies outside the boundaries of the site where the off-site fire involves unfamiliar hazards or enclosed structures with layout and contents that are unknown to the facility fire brigade.

**1.3.3** This standard shall not apply to medical response, confined space rescue response, and hazardous material response activities.

**1.3.4** This standard shall not apply to fire departments complying with NFPA 1500.

**1.4\* Equivalency.** The authority having jurisdiction shall be permitted to approve organization, operations, training, and occupational safety and health requirements that provide an equivalent level of safety to the level of safety provided by the requirements of this standard.

**1.5 Units and Formulas.**

**1.5.1** The units of measure in this standard are presented in the International System (SI) of Units. Where presented, U.S. customary units (inch-pound units) follow the SI units in parentheses.

**1.5.2** Where both systems of units are presented, either system shall be acceptable for satisfying the requirements in this standard.

**1.5.3** Where both systems of units are presented, users of this standard shall apply one set of units consistently and shall not alternate between units.

**1.5.4** The values presented for measurements in this standard are expressed with a degree of precision appropriate for practical application and enforcement. It is not intended that the application or enforcement of these values be more precise than the precision expressed.

**1.5.5** Where extracted text contains values expressed in only one system of units, the values in the extracted text have been retained without conversion to preserve the values established by the responsible technical committee in the source document.

**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 30, *Flammable and Combustible Liquids Code*, 2015 edition.

NFPA 1081, *Standard for Industrial Fire Brigade Member Professional Qualifications*, 2012 edition.

NFPA 1403, *Standard on Live Fire Training Evolutions*, 2012 edition.

NFPA 1500, *Standard on Fire Department Occupational Safety and Health Program*, 2013 edition.

NFPA 1911, *Standard for the Inspection, Maintenance, Testing, and Retirement of In-Service Automotive Fire Apparatus*, 2012 edition.

NFPA 1971, *Standard on Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting*, 2013 edition.

NFPA 1981, *Standard on Open-Circuit Self-Contained Breathing Apparatus (SCBA) for Emergency Services*, 2013 edition.

NFPA 1982, *Standard on Personal Alert Safety Systems (PASS)*, 2013 edition.

**2.3 Other Publications.**

**2.3.1 ASTM Publications.** ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959.

ASTM D 323, *Standard Test Method for Vapor Pressure of Petroleum Products (Reid Method)*, 2008.



### 2.3.2 Other Publications.

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

### 2.4 References for Extracts in Mandatory Sections.

NFPA 30, *Flammable and Combustible Liquids Code*, 2015 edition.

NFPA 1500, *Standard on Fire Department Occupational Safety and Health Program*, 2013 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.

## 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 NFPA Official 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\* Combustible Liquid.** Any liquid that has a closed-cup flash point at or above 37.8°C (100°F), as determined by the test procedures and apparatus set forth in Section 4.4 of NFPA 30. Combustible liquids are classified according to Section 4.3 of NFPA 30. [30, 2015]

**3.3.2\* Control Zones.** The areas at an incident that are designated based upon safety and the degree of hazard. [1500, 2013]

**3.3.2.1 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. [1500, 2013]

**3.3.2.2 Hot Zone.** The control zone immediately surrounding a hazardous area, which extends far enough to prevent adverse effects to personnel outside the zone. [1500, 2013]

**3.3.2.3 Warm Zone.** The control zone outside the hot zone where personnel and equipment decontamination and hot zone support takes place. [1500, 2013]

**3.3.3 Designated Employee.** An employee who is not a member of an facility fire brigade but who has been trained to use portable fire extinguishers or small hose lines to fight incipient fires in the employee's immediate work area.

**3.3.4 Drill.** An exercise involving a credible simulated emergency that requires personnel to perform emergency response operations for the purpose of evaluating the effectiveness of the training and education programs and the competence of personnel in performing required response duties and functions.

**3.3.5 Drug.** Any substance, chemical, over-the-counter medication, or prescribed medication that can affect performance.

**3.3.6\* Education.** The process of imparting knowledge or skill through systematic instruction.

**3.3.7 Emergency Response Operations.** Activities related to emergency incidents, including response to the scene of the incident and specific response duties performed at the scene.

**3.3.8 Enclosed Structure.** A structure with a roof or ceiling and at least two walls that can present fire hazards to employees, such as accumulations of smoke, toxic gases, and heat, similar to those found in buildings.

**3.3.9\* Facility.** Any location or structure including industrial, commercial, mercantile, warehouse, power plant (utility), areas of assembly, institutional or similar occupancy, public and private as well as for-profit, not-for-profit, and governmental facilities.

**3.3.10 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.

**3.3.10.1 Facility Fire Brigade Leader.** An individual responsible for overseeing the performance or activity of other members.

**3.3.11 Facility Fire Brigade Apparatus.** A facility fire brigade emergency response vehicle designed and intended primarily for fire suppression, rescue, or other specialized function that includes pumpers, foam apparatus, aerial ladders, rescue vehicles, and other such apparatus.

**3.3.12 Facility Fire Brigade Management.** The individual designated by top management to be responsible for the organization, management, and functions of the facility fire brigade.

**3.3.13 Facility Fire Brigade Training Coordinator.** The designated company representative with responsibility for coordinating effective, consistent, and quality training within the facility fire brigade training and education program.

### 3.3.14 Fire Fighting.

**3.3.14.1\* Advanced Exterior Fire Fighting.** Offensive fire fighting performed outside of an enclosed structure when the fire is beyond the incipient stage.



**3.3.14.2 Defensive Fire Fighting.** The mode of manual fire control in which the only fire suppression activities taken are limited to those required to keep a fire from extending from one area to another.

**3.3.14.3 Incipient Fire Fighting.** Fire fighting performed inside or outside of an enclosed structure or building when the fire has not progressed beyond incipient stage.

**3.3.14.4\* Interior Structural Fire Fighting.** The physical activity of fire suppression, rescue, or both, inside of buildings or enclosed structures that are involved in a fire beyond the incipient stage.

**3.3.14.5 Offensive Fire Fighting.** The mode of manual fire control in which manual fire suppression activities are concentrated on reducing the size of a fire to accomplish extinguishment.

### 3.3.15 Fit.

**3.3.15.1 Medically Fit.** As determined by a qualified healthcare professional, there are no known medical limitations that would interfere with the process of making decisions and providing direction while exposed to a stressful environment.

**3.3.15.2 Physically Fit.** As determined by a qualified healthcare professional, there are no known physical or medical limitations that would interfere with the performance of strenuous heavy lifting and pulling or with the use of self-contained breathing apparatus that can be required during emergency response organizations.

**3.3.16\* Flammable Liquid.** Any liquid that has a closed-cup flash point below 37.8°C (100°F), as determined by the test procedures and apparatus set forth in Section 4.4 of NFPA 30 and a Reid vapor pressure that does not exceed an absolute pressure of 276 kPa (40 psi) at 37.8°C (100°F), as determined by ASTM D 323, *Standard Test Method for Vapor Pressure of Petroleum Products (Reid Method)*. Flammable liquids are classified according to Section 4.3 of NFPA 30. [30, 2015]

**3.3.17\* 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. [1561, 2014]

**3.3.18\* Incipient Stage Fire.** A fire which is in the initial or beginning stage and which can be controlled or extinguished by portable fire extinguishers, Class II standpipe or small hose systems without the need for protective clothing or breathing apparatus.

**3.3.19 Master Stream.** A portable or fixed fire-fighting appliance supplied by either hose lines or fixed piping and that has the capability of flowing in excess of 1140 L/min (300 gpm) of water or water-based extinguishing agent.

**3.3.20 Performance Standards.** Minimum requirements for knowledge and skills that must be provided to or demonstrated by the facility fire brigade member upon completion of a training or education session.

**3.3.21\* Qualified Healthcare Professional.** A licensed medical doctor or other licensed healthcare professional qualified to provide professional expertise in the areas of occupational safety and health as related to emergency response activities.

**3.3.22 Response Duty.** A fire-related service, function, or task identified in the facility fire brigade organizational statement and assigned to a member to perform.

**3.3.23 Site-Specific Hazard.** A hazard that is present at the specific facility for which the facility fire brigade has been organized.

**3.3.24 Specialized Agents.** Fire-extinguishing agents, such as dry chemicals, dry powders, carbon dioxide, halon, and other such non-water-based agents.

**3.3.25 Standard Operating Procedure.** A written organizational directive that establishes or prescribes specific operational or administrative methods to be followed routinely for the performance of designated operations or actions. [1521, 2015]

**3.3.26\* Support Members.** Personnel assigned to the facility fire brigade to perform specific response duties, including those people who have specific technical knowledge or skills or who have been given specific assignments that indirectly support manual fire suppression efforts.

**3.3.27 Thermal Protective Clothing.** Protective clothing such as helmets, footwear, gloves, hoods, trousers, and coats that are designed and manufactured to protect the facility fire brigade member from the adverse effects of fire.

**3.3.28 Training.** The process of achieving proficiency through instruction and hands-on practice in the operation of equipment and systems that are expected to be used in the performance of assigned response duties.

## Chapter 4 Facility Fire Brigade Fundamentals

### 4.1 General.

**4.1.1** This chapter applies to all types of facility fire brigades.

**4.1.2\*** At facilities where designated workers are trained to respond to incipient fires, the facility fire brigade shall assume command of the incident upon arrival.

**4.1.3\*** Facility fire brigades shall be classified into one or more of the following types:

- (1) Incipient stage fire fighting
- (2) Advanced exterior fire fighting only
- (3) Interior structural fire fighting only
- (4) Both advanced exterior and interior structural fire fighting

**4.1.4\*** The actions and responsibilities of the facility fire brigade shall be limited.

**4.1.4.1** The potential exposure to a hazardous environment and the extent of training shall determine the limits of facility fire brigade actions and responsibilities.

**4.1.4.2** The written facility fire brigade organizational statement and standard operating procedures shall define these limits.

**4.1.4.3\*** The minimum number of facility fire brigade members required to operate at an incident shall be established.

**4.1.5\*** Facility fire brigade members shall be issued identification.

### 4.2 Organization and Administration.

**4.2.1** Corporate or local management shall be responsible for all of the following:

- (1) Evaluating site-specific conditions and hazards
- (2)\*Assigning site-specific duties for the facility fire brigade

- (3)\*Establishing a written policy for occupational safety and health of facility fire brigade members
- (4)\*Establishing a written policy for the medical and job-related physical performance requirements for facility fire brigade members
- (5) Developing or adopting performance-based standards that establish baseline levels of proficiency in skills, knowledge, and the safety measures necessary for facility fire brigade members to accomplish assigned response duties
- (6) Maintaining a system to advise facility fire brigade management of changes in a worker's eligibility for participation in a facility fire brigade
- (7) Establishing a policy to maintain records required in this standard
- (8)\*Budgeting funds for equipment, vehicles, training and education, medical and job-related physical performance evaluations, and other necessary items for operation of the facility fire brigade
- (9) A means for facility fire brigade communications to achieve the following:
  - (a) Notification of facility fire brigade members of an incident
  - (b) Communications between facility fire brigade members during an incident

**4.2.2\*** Management shall establish, review, and maintain a written facility fire brigade organizational statement.

**4.2.2.1\*** The existence of the facility fire brigade shall be established in the organizational statement.

**4.2.2.2** The organizational statement shall include all of the following:

- (1)\*Basic organizational structure
- (2) The type, amount, and frequency of training and education to be provided
- (3) The expected number of members in the brigade
- (4)\*The response duties that the brigade is expected to perform
- (5) The shifts during which the brigade members are available for response

**4.2.2.3** The organizational statement shall be available for inspection by the authority having jurisdiction, the facility fire brigade members, and their designated representatives.

**4.2.3** Management shall establish lines of authority and assign responsibilities for operation of the facility fire brigade.

**4.2.3.1** Management shall designate the responsible individual for the administration of the facility fire brigade including the training and education program.

**4.2.3.2** Management shall establish responsibility for initiating, maintaining, and enforcing standard operating procedures to ensure the safety and health of facility fire brigade members.

**4.2.3.3** Management shall establish a policy to ensure that each facility fire brigade member cooperates, participates, and complies with the provisions of the facility fire brigade organizational statement and the training and education program.

**4.2.4\*** Management shall identify specific goals and objectives for the prevention and elimination of accidents, injuries, illness, and fatalities while performing facility fire brigade duties.

**4.2.4.1** Management shall include facility fire brigade members on corporate or local company occupational safety and health committees.

**4.2.4.2\*** Management shall delegate the duties and responsibilities of the facility fire brigade safety program to qualified individuals.

**4.2.4.3** The safety program shall include the following:

- (1) Records and data management
- (2) Liaison with management, equipment suppliers, site or corporate safety, and medical and health departments
- (3) Development and maintenance of standard operating procedures
- (4) Accident prevention
- (5) Equipment specification and maintenance
- (6) Accident investigation
- (7) Incident scene safety
- (8) Training and education

**4.2.5\*** Records required in this standard shall be maintained in a location available for inspection by the authority having jurisdiction.

### **4.3 Standard Operating Procedures (SOP).**

**4.3.1** Standard operating procedures (SOP) shall be developed, reviewed, and maintained in written form.

**4.3.1.1** The SOP shall cover site-specific conditions and hazards.

**4.3.1.2** The SOP shall identify procedures for management of critical processes to be followed during incidents.

**4.3.1.3** Procedures shall be written for the site-specific duties identified in the facility fire brigade organizational statement.

**4.3.1.4** The SOP and pre-incident plans shall be reviewed periodically and updated to reflect changes at the site including, but not limited to, changes in special hazards.

**4.3.2\*** The SOP shall list special hazards, such as storage and use of flammable liquids and gases, toxic chemicals, radioactive sources, and water reactive substances, that facility fire brigade members can be exposed to during fire and other emergencies.

**4.3.2.1** Facility fire brigade members shall be advised of any changes that occur in relation to the special hazards.

**4.3.2.2** Facility fire brigade members shall receive training and education on how to handle site-specific special hazards.

**4.3.2.3** NFPA 1081 shall be used to establish minimum levels of proficiency in both skills and knowledge to permit facility fire brigade members to safely accomplish the site-specific response duties.

**4.3.3** The SOP shall include all of the following for facility fire brigades:

- (1) Organization and operation (incident and non-response duties)
- (2) Site-specific limitations
- (3) Pre-incident planning
  - (a) Implementation
  - (b) Periodic review and updates
  - (c) Pre-incident plan accessible to incident command

**4.3.4** The SOP shall be accessible to all facility fire brigade members.

**4.3.5** The SOP shall have procedures for activation, control, and use of fire protection systems and equipment.



**4.3.6** The facility fire brigade leader or deputy facility fire brigade leader on duty shall be notified of fire protection systems and equipment status including those that are out of service.

**4.4 Incident Management System (IMS).** An incident management system (IMS) shall be utilized during incidents beyond the incipient stage and in training operations.

**4.4.1\*** An incident management system shall be established with written procedures.

**4.4.1.1** Facility fire brigade members shall be familiar with the incident management system.

**4.4.1.2** The incident management system shall identify roles and responsibilities of leadership.

**4.4.1.2.1** There shall be an incident commander at each incident where the incident management system is used.

**4.4.1.2.2** Leadership shall be responsible for safety during facility fire brigade operations.

**4.4.2** Safety responsibilities shall be assigned to supervisory personnel at each level of the organization.

**4.4.3** The incident management system shall include the roles and responsibilities of any responding public fire department and other outside agencies.

**4.4.4\*** A standard system shall be used to identify and account for each facility fire brigade member present at the scene of the incident.

**4.4.5** The incident commander shall ensure that the risk to members is evaluated prior to taking action.

**4.4.5.1** In situations where the risk to facility fire brigade members is unacceptable, the incident response activities shall be limited to defensive fire fighting.

**4.4.5.2** Regardless of the risk, actions shall not exceed the scope of the organizational statement and standard operating procedures.

#### **4.5 Risk Management Policy.**

**4.5.1\*** A risk management policy for incident response shall be established by facility fire brigade management.

**4.5.1.1** The following are recognized principles of risk management policy:

- (1) Some risk to the safety of facility fire brigade members shall be acceptable where saving human lives is possible.
- (2) Minimal risk to the safety of the facility fire brigade members, and only in a calculated manner, shall be acceptable where saving endangered property is possible.
- (3) No risk to the safety of facility fire brigade members shall be acceptable where saving lives or property is not possible.

**4.5.1.2** The risk management policy shall be routinely reviewed with facility fire brigade members.

**4.5.1.3** Corrective action plans shall be established for non-compliance with the risk management policy.

**4.5.2\*** Incident operations scenarios and drills shall be used to evaluate the risks.

**4.5.3** The incident commander shall maintain control of all zones.

#### **4.6 Training and Education.**

**4.6.1\*** A training and education program shall be established and maintained.

**4.6.1.1** The goals for training and education shall include, but not be limited to, all of the following:

- (1)\*Preventing accidents which can result in injury, illness, or death of facility fire brigade members as a result of performing their duties
- (2)\*Developing competency in life safety, property conservation, and reduction of business interruption
- (3) Controlling the fire within the limitations of the Risk Management Policy established under Section 4.5

**4.6.1.2** The training and education program shall include, but not be limited to, all of the following:

- (1)\*A review of the applicable provisions of this standard
- (2) Basic fire chemistry
- (3) The principles and practices of fire fighting and emergency response to the extent required for the type of facility fire brigade and member's assignment within the brigade
- (4) New hazards, equipment, and procedures introduced into the facility
- (5) Site-specific hazards

**4.6.2\*** A facility fire brigade training coordinator shall be designated to manage the training and education program.

**4.6.2.1** The training coordinator shall conduct training and education or delegate the training and education to qualified instructors.

**4.6.2.2** The training coordinator shall verify the qualifications of instructors.

**4.6.3** Members shall be trained to a level of competency commensurate with the response duties and functions that they are expected to perform including the operation of fire-fighting and rescue equipment and systems.

**4.6.4\*** Members shall meet the minimum job performance requirements of NFPA 1081 for each site-specific task expected to be performed by brigade members before their participation in emergency response operations.

**4.6.5** Members shall be trained for site-specific tasks expected to be performed by brigade members.

**4.6.6** The skills and knowledge of members shall be verified prior to their participation in emergency response operations.

**4.6.7** Facility fire brigade members shall perform only those response duties that they have been trained and educated to perform.

**4.6.8\*** Training and education shall be conducted periodically.

**4.6.9\*** Facility fire brigade members designated as leaders shall receive training and education commensurate with their response duties.

**4.6.10** Facility fire brigade leader training and education shall be more comprehensive than training provided to facility fire brigade members.

#### **4.7 Drills.**

**4.7.1\*** A performance standard for drills shall be established.



**4.7.1.1\*** Drill scenarios shall be representative of conditions encountered during an actual fire.

**4.7.1.2\*** Drills shall be conducted periodically.

**4.7.1.3\*** A fire brigade leader or a deputy fire brigade leader shall oversee the conduct of fire drills.

**4.7.2\*** Fire brigade members shall perform or simulate actions necessary to fight simulated fires consistent with the fire drill scenario and the type of facility fire brigade.

**4.7.3** Drills shall be evaluated for all of the following:

- (1) Training and education program
- (2) Fire brigade member performance

**4.7.3.1** A corrective action plan shall be created to improve efficiency in the training and education program.

**4.7.3.2\*** Fire brigade member performance shall be assessed to the standards established in 4.7.1.

**4.7.3.3** Drill evaluations shall be documented.

**4.7.3.4\*** The competence of facility fire brigade members shall be evaluated by the facility fire brigade leader or a deputy facility fire brigade leader.

**4.7.3.4.1** Only facility fire brigade members meeting the performance standard established in 4.7.1 shall be permitted to perform response duties.

**4.7.3.4.2** Additional training shall be provided as necessary to improve performance that is below established standards.

**4.7.3.4.3\*** After completion of additional training, the facility fire brigade member's performance shall be re-evaluated.

#### **4.8 Training and Drill Records.**

**4.8.1** Training and drill records shall be maintained for each member of the facility fire brigade.

**4.8.2** Training records shall include, but not be limited to, the following:

- (1) Courses completed
- (2) Subjects studied
- (3) Refresher courses completed
- (4) Evaluations of skills and knowledge
- (5) Drill attendance records
- (6) Leadership or other special accomplishments

**4.8.3** Training and drill records shall be available for inspection by the authority having jurisdiction.

**4.8.4** Training and drill records shall be reviewed at least annually by facility fire brigade management and the facility fire brigade training coordinator to evaluate:

- (1) Training needs
- (2) Equipment needs
- (3) Fire-fighting operations effectiveness

#### **4.9 Responsibilities in the Facility Fire Brigade Organization.**

**4.9.1 Facility Fire Brigade Management.** Facility fire brigade management shall be responsible for the following:

- (1) Establishing programs to accomplish the items identified in the facility fire brigade organizational statement
- (2) Coordinating and scheduling necessary meetings
- (3) Establishing and maintaining fire protection equipment inspection programs for facility fire brigade equipment

- (4) Coordinating the maintenance and review of necessary reports and records
- (5)\*Maintaining liaison with local fire authorities
- (6)\*Select facility fire brigade members

**4.9.2 Facility Fire Brigade Leader.** The facility fire brigade leader shall be responsible for the following:

- (1) Establishing a chain of command within the brigade to act in the absence of the brigade leader
- (2)\*Evaluating brigade members' qualifications
- (3) Establishing and maintaining a brigade roster
- (4) Selecting deputy facility fire brigade leaders as appropriate to the size of the brigade and keeping them informed of all operations of the brigade
- (5) For site-specific hazards, hazardous materials, and processes to which the facility fire brigade can be exposed:
  - (a) Develop pre-incident plans
  - (b) Inform facility fire brigade members
- (6) Providing training for assigned response duties of fire brigade members and support members
- (7) Selecting and maintaining equipment used by the brigade
- (8) Issuing written reports on the status of the facility fire brigade to management, at least annually
- (9) Assisting in fire investigations

**4.9.3 Deputy Facility Fire Brigade Leaders.** The deputy facility fire brigade leader shall do all of the following:

- (1) Complete tasks assigned by the facility fire brigade leader
- (2) Substitute in the leader's absence

**4.9.4 Facility Fire Brigade Members.** Each facility fire brigade member shall cooperate, participate, and comply with the provisions of the facility fire brigade organizational statement, standard operating procedures, and the training and education program.

#### **4.9.5 Support Members.**

**4.9.5.1** Prior to an incident, support members shall demonstrate all of the following:

- (1) Awareness of the pre-incident plan
- (2) Ability to perform assigned response duties consistent with the training provided

**4.9.5.2** Support members shall not enter the warm zone or the hot zone.

#### **4.10 Medical and Job-Related Physical Requirements.**

##### **4.10.1 General Fitness.**

**4.10.1.1\*** Prior to acceptance for facility fire brigade membership, workers who are expected to perform advanced exterior or interior structural fire fighting shall be examined and certified as medically and physically fit by a qualified healthcare professional.

**4.10.1.2** The medical and physical fitness requirements shall be based on the risks and tasks associated with the assigned facility fire brigade response duties.

**4.10.1.3** Facility fire brigade members who are under the influence of alcohol or drugs shall not participate in facility fire brigade operations.

**4.10.2 Medical Requirements.** Facility fire brigade members who perform advanced exterior fire fighting or interior structural fire fighting shall be medically evaluated annually and



after each medical leave of absence by a qualified healthcare professional.

#### **4.10.3\* Job-Related Physical Performance Requirements.**

**4.10.3.1\*** Facility fire brigade members shall meet the job-related physical performance requirements of 4.2.1(4) prior to assignment to the facility fire brigade.

**4.10.3.2** Facility fire brigade members who are expected to perform advanced exterior or interior structural fire fighting shall be evaluated annually to ensure that they continue to meet the job-related physical performance requirements of 4.2.1(4).

**4.10.3.3** When the evaluation required in 4.10.3.2 concludes that a facility fire brigade member does not meet the job-related physical performance requirements of 4.2.1(4), the member shall not continue to perform those task-specific activities.

**4.10.4\* Physical Fitness.** Facility fire brigade members shall report to management any changes in their physical condition that could impact their performance as a facility fire brigade member.

#### **4.11 Facility Fire Brigade Equipment.**

**4.11.1** The facility fire brigade shall be provided with the appropriate equipment to enable performance of the response duties assigned in the organizational statement.

**4.11.2\*** The equipment shall be selected based on the needs presented by the type of facility and the site-specific hazards.

**4.11.3** Storage space shall be provided for the facility fire brigade equipment.

**4.11.3.1** The storage space shall be accessible when the fire-fighting equipment is needed.

**4.11.3.2** Storage space shall meet the environmental recommendations of the fire-fighting equipment manufacturers.

**4.11.4** There shall be an inventory of facility fire brigade equipment meeting all of the following:

- (1) Written list maintained on-site
- (2) Equipment location
- (3) Reviewed annually
- (4) Updated as needed for accuracy and new acquisitions

**4.11.5** Methods for requisitioning the equipment as needed shall be part of the standard operating procedures.

**4.11.6** Facility fire brigade equipment shall be inspected and maintained in accordance with manufacturers' recommendations and applicable standards and at least annually.

**4.11.7** Operation and maintenance manuals for facility fire brigade equipment shall be available to the facility fire brigade.

**4.11.8** Maintenance reports of facility fire brigade equipment shall be available to the facility fire brigade.

#### **4.12 Facility Fire Brigade Apparatus.**

**4.12.1** Facility fire brigade management shall include facility fire brigade health and safety as primary concerns in the specification, design, construction, acquisition, operation, maintenance, inspection, and repair of all apparatus.

**4.12.2\*** Only qualified facility fire brigade members shall operate facility fire brigade apparatus.

**4.12.2.1** Qualified apparatus operators shall have completed formal training using performance-based standards.

**4.12.2.2** Facility fire brigade apparatus operators shall have valid driver's licenses for the type of vehicle as required by state law or corporate policy.

**4.12.2.3** Apparatus shall be operated in compliance with applicable traffic laws.

**4.12.2.4** Facility fire brigade apparatus drivers shall be directly responsible for safe and prudent operation under all conditions.

**4.12.3\*** All persons riding on facility fire brigade apparatus shall be seated and secured with seat belts.

**4.12.4** Facility fire brigade apparatus shall be maintained in accordance with the manufacturer's recommendations.

**4.12.4.1\*** Facility fire brigade apparatus shall be inspected at least weekly and prior to returning to service after any use or repair.

**4.12.4.2** Facility fire brigade apparatus found unsafe shall be placed out of service until repaired.

**4.12.5** Fire pumps on apparatus shall be service tested in accordance with the frequency and procedures specified in NFPA 1911.

**4.12.6** Aerial devices shall be inspected and service tested in accordance with the frequency and procedures specified in NFPA 1911.

## **Chapter 5 Facility Fire Brigades That Perform Incipient Stage Fire Fighting**

**5.1 General.** Facility fire brigades organized to perform incipient stage fire fighting shall meet the requirements of Sections 5.3 through 5.5 in addition to all applicable requirements of Chapters 1 and 4 of this standard.

**5.2 Limits for Facility Fire Brigades Assigned Incipient Fire-Fighting Response Duties.** Interior and exterior fires shall be considered incipient stage when facility fire brigade members function as follows:

- (1) They are able to safely fight the fire in normal work clothing.
- (2) They are not required to crawl or take other evasive action to avoid smoke and heat.
- (3) They are not required to wear thermal protective clothing or self-contained breathing apparatus (SCBA).
- (4) They are able to fight the fire effectively with portable extinguishers or handlines flowing up to 473 L/min (125 gpm).

#### **5.3 Education, Training, and Drills.**

**5.3.1\*** All facility fire brigade members shall receive training and education at least annually.

**5.3.2** All facility fire brigade members shall participate in a drill at least annually.

**5.3.3\*** Training and drills involving live fire evolutions shall be performed in accordance with recognized safety precautions.

**5.4 Protective Clothing and Protective Equipment.** Thermal protective clothing and SCBA shall not be required.

**5.5 Medical.** Each facility fire brigade member shall meet the medical and job-related physical performance requirements as specified in Section 4.10.

## Chapter 6 Facility Fire Brigades That Perform Advanced Exterior or Interior Structural Fire Fighting

**6.1 General.** Facility fire brigades organized to perform advanced exterior or interior structural fire fighting shall meet the requirements of Sections 6.2 through 6.6 in addition to all applicable requirements of Chapters 1 and 4 of this standard.

**6.1.1** Facility fire brigades organized to perform advanced exterior fire fighting shall perform only advanced exterior fire-fighting duties.

**6.1.2** Facility fire brigades organized to perform interior structural fire fighting shall perform only interior structural fire-fighting duties.

**6.1.3** Facility fire brigades organized to perform advanced exterior and interior structural fire fighting shall perform advanced exterior fire-fighting duties and interior structural fire-fighting duties.

### 6.2 Limits of Facility Fire Brigades Assigned Both Advanced Exterior and Interior Structural Fire-Fighting Response Duties.

**6.2.1** Both exterior fires and interior structural fires shall be considered appropriate for offensive action within the hot zone for facility fire brigade members who have been assigned both advanced exterior and interior fire-fighting response duties when the following occur:

- (1) The organizational statement lists it as a response duty of the facility fire brigade, and it is covered by the standard operating procedures.
- (2) The facility fire brigade has received training for that activity.
- (3) SCBA and thermal protective clothing are provided.
- (4) The facility fire brigade is able to perform offensive action effectively, using handlines flowing up to 1140 L/min (300 gpm), master streams, or similar devices for the manual application of specialized agents.

**6.2.2** Exterior fires shall be considered appropriate for defensive action outside of the hot and warm zones by facility fire brigade members who have been assigned fire-fighting response duties when the following occur:

- (1) The organizational statement lists it as a response duty of the facility fire brigade, and it is covered by the standard operating procedures.
- (2) The facility fire brigade has received training for that activity.
- (3) SCBA and thermal protective clothing are not required.
- (4) Personal evasive action is not required.
- (5) The facility fire brigade is able to perform defensive action effectively using handlines flowing up to 1140 L/min (300 gpm), master streams, or similar devices for the manual application of specialized agents.

**6.2.3** Protective clothing for proximity fire fighting shall not be worn for interior structural fire fighting.

**6.3 Operational Requirements.** Operational safety requirements shall be established for facility fire brigade members

responding to a fire emergency including, but not limited to, the following:

- (1) Personnel who are not trained in accordance with this standard are not permitted to enter the warm or hot zones established for a fire emergency.
- (2)\*SCBA and thermal protective clothing are worn by facility fire brigade members entering the hot zone.
- (3) Thermal protective clothing is worn by facility fire brigade members entering the warm zone.
- (4) Facility fire brigade members operate in teams of two or more in response to fires that have advanced beyond the incipient stage.
- (5) Facility fire brigade members operating in the hot and warm zones have an established communications system.
- (6) When facility fire brigade members are operating in the hot zone, at least one facility fire brigade member with the capability to call for assistance remains outside the hot zone and maintains an awareness of the safety of facility fire brigade members located inside the hot zone.
- (7) When facility fire brigade members are operating in the hot zone, additional brigade members are standing by in the warm zone with approved equipment to provide assistance or rescue.
- (8) Facility fire brigade members positioned in the warm zone are visible to command positions at all times.
- (9) Personnel and facility fire brigade members positioned in any fire zone have opportunity to relocate to an alternate position should fire conditions change.
- (10) Experienced facility fire brigade members oversee activities of less experienced brigade members during fire-fighting operations.

### 6.4 Education, Training, and Drills.

**6.4.1** All facility fire brigade members shall receive training and education at least quarterly to meet the requirements of Section 4.6.

**6.4.2** All facility fire brigade members shall participate in a drill at least semiannually to meet the requirements of Section 4.6.

**6.4.3** Live fire training shall be conducted at least annually. Training and drills involving a live fire evolution shall be performed in accordance with NFPA 1403.

**6.4.4** Live fire training shall include props that are representative of and that simulate as closely as possible the hazards and conditions that could be encountered by the facility fire brigade member.

### 6.5 Protective Clothing and Protective Equipment.

**6.5.1** Thermal protective clothing and protective equipment for structural fire fighting shall be available in sufficient quantities and sizes to fit each facility fire brigade member expected to enter the hot and warm zones.

**6.5.2\*** Thermal protective clothing and protective equipment meeting the requirements of 6.5.2.1 through 6.5.2.4 shall be required to be worn by all facility fire brigade members entering the hot and warm zones.

**6.5.2.1** Protective clothing, helmets, gloves, and footwear shall be in accordance with NFPA 1971.

**6.5.2.2** PASS devices shall be in accordance with NFPA 1982.

**6.5.2.3** Open-circuit-type self-contained breathing devices shall be in accordance with NFPA 1981.



**6.5.2.4** Closed-circuit-type self-contained breathing devices shall be approved by the National Institute for Occupational Health and Safety (NIOSH) and the Mine Safety and Health Administration (MSHA) with a minimum service duration of 30 minutes.

**6.5.2.5** Closed-circuit-type self-contained breathing devices shall operate in the positive pressure mode only.

**6.5.3** All facility fire brigade members entering the hot zone shall be provided with approved hoods that provide protection for the ears and neck and interface with the SCBA facepiece, protective coat for structural fire fighting, and helmet.

**6.5.4** Thermal protective clothing and protective equipment shall be used and maintained in accordance with manufacturers' instructions.

**6.5.4.1** A maintenance and inspection program shall be established for thermal protective clothing and protective equipment.

**6.5.4.2** Specific responsibilities shall be assigned for inspection and maintenance.

**6.5.5\*** Facility fire brigade members using SCBA shall operate in teams of two or more members who are in communication with each other through visual, audible, or physical means or safety guide rope, in order to provide assistance in case of an emergency.

**6.5.5.1** Where facility fire brigade members are involved in operations that require the use of SCBA, at least two members shall be assigned to remain outside the area where respiratory protection is required.

**6.5.5.2** One member shall be responsible for maintaining a constant awareness of the number and identity of personnel using SCBA, their location, function, and time of entry.

**6.5.5.3** The members assigned in 6.5.5.1 shall be trained, equipped with SCBA, and available for rescue.

**6.6 Medical.** Each facility fire brigade member shall meet the medical and job-related physical performance requirements specified in Section 4.10.

## Annex A Explanatory Material

*Annex A is not a part of the requirements of this NFPA document but is included for informational purposes only. This annex contains explanatory material, numbered to correspond with the applicable text paragraphs.*

**A.1.1** A major concern of industrial fire protection professionals is the protection of employees and property from the threat of fire in the workplace. In 1980 the Occupational Safety and Health Administration (OSHA) defined its requirements for facility fire brigades. These requirements apply to facility fire brigades once corporate or local management, in the role as an authority having jurisdiction, has determined that they want an facility fire brigade at a facility.

In OSHA, 29 CFR 1910.156, Subpart L, two types of facility fire brigades are defined in an attempt to establish levels of facility fire brigade function and to identify the training and safety requirements for each of those levels. Fire protection professionals have wrestled with categorizing every existing facility fire brigade into either the incipient stage category or the interior structural category.

In attempting to develop a state-of-the-art facility fire brigade standard, the Technical Committee on Loss Prevention Procedures and Practices has followed OSHA's lead in setting requirements based on the incipient and interior structural facility fire brigade definitions.

The adoption of NFPA 1500 by the NFPA in 1987 brought about an entirely new perspective — that of inclusion of the facility fire brigades in the same category as municipal fire departments. Although the work done by the Technical Committee on Fire Department Occupational Safety and Health is admirable and is intended to safeguard all fire fighters, the Technical Committee on Loss Prevention Procedures and Practices believes that a separate facility fire brigade standard is needed.

Although every facility fire brigade is unique, just as every municipal fire department is unique, facility fire brigades, including those that can be referred to as facility fire departments, have far different needs in many respects from those of municipal fire departments.

The primary difference between facility fire brigades and municipal fire departments is that facility fire brigades must deal with conditions and hazards that are limited to those that exist within a given facility that is generally privately owned and operated. Although these site-specific hazards can and do represent the same degree of hazard to both facility fire brigade members and municipal fire fighters, facility fire brigade members are not usually concerned with, nor are they expected to deal with, hazards and emergencies beyond the boundaries of the facility that the brigade serves.

In addition to this primary difference, it must be remembered that at a facility a program of occupational safety and health has already been established for all personnel including members of the facility fire brigade. Further, facility fire brigades constituted in accordance with this standard will, of necessity, have a much more thorough knowledge of the buildings and facilities where they respond than do municipal fire fighters who must respond to a significantly greater variety of buildings and facilities, many of which have unidentified and undisclosed hazards.

A municipal fire department, as a local government function, must provide a service to a very broad-based municipality with a multitude of unknown factors at every given response. Variables such as property size and accessibility; building size, construction, and contents; manufacturing process hazards; fixed fire-extinguishing systems and special agent availability; and storage and use of solvents, oils, chemicals, or other hazardous materials are all potential unknown factors that can hinder the effectiveness of any municipal fire department and place a greater safety risk on the fire fighters.

This distinct advantage of familiarity achieves a higher level of facility fire brigade safety and allows for the fundamental difference between a municipal fire department and an facility fire brigade.

**A.1.2** To meet the intent of this standard, all the requirements of the standard should be followed.

**A.1.3.1** This standard is intended to meet or exceed the facility fire brigade-related requirements of OSHA, 29 CFR 1910, Chapter XVII, Subpart L, "Fire Protection." Further, this standard is intended to assure the facility fire brigade member with an appropriate degree of occupational safety and health while performing facility fire brigade response duties, just as NFPA 1500 assures an appropriate degree of occupational safety and health for the municipal fire department member.



For additional information on facility fire brigade organization, see Chapter 4 in the NFPA *Industrial Fire Hazards Handbook*.

**A.1.3.2** It is the intent that facility fire brigade members who are trained and qualified under the guidance of this standard respond to familiar hazards that are common to the facility being protected.

Facility fire brigades complying with the requirements of this standard should be permitted to respond to fires outside the boundaries of the facility only when the fire brigade is trained and familiar with the hazards associated with the fire. For example, a facility fire brigade having appropriate training in accordance with this standard can respond to a fire involving an enclosed structure outside the boundaries of the facility, if such response was anticipated and preplanned by the fire brigade management. Each facility fire brigade member should be familiar with the layout and contents of the structure and should be provided with the opportunity to tour the structure at least quarterly.

**A.1.4** The application of the performance objectives of this standard can vary for many facility fire brigade operations.

**A.3.2.1 Approved.** The National Fire Protection Association does not approve, inspect, or certify any installations, procedures, equipment, or materials; nor does it approve or evaluate testing laboratories. In determining the acceptability of installations, procedures, equipment, or materials, the authority having jurisdiction may base acceptance on compliance with NFPA or other appropriate standards. In the absence of such standards, said authority may require evidence of proper installation, procedure, or use. The authority having jurisdiction may also refer to the listings or labeling practices of an organization that is concerned with product evaluations and is thus in a position to determine compliance with appropriate standards for the current production of listed items.

**A.3.2.2 Authority Having Jurisdiction (AHJ).** The phrase “authority having jurisdiction,” or its acronym AHJ, is used in NFPA documents in a broad manner, since jurisdictions and approval agencies vary, as do their responsibilities. Where public safety is primary, the authority having jurisdiction may be a federal, state, local, or other regional department or individual such as a fire chief; fire marshal; chief of a fire prevention bureau, labor department, or health department; building official; electrical inspector; or others having statutory authority. For insurance purposes, an insurance inspection department, rating bureau, or other insurance company representative may be the authority having jurisdiction. In many circumstances, the property owner or his or her designated agent assumes the role of the authority having jurisdiction; at government installations, the commanding officer or departmental official may be the authority having jurisdiction.

**A.3.3.1 Combustible Liquid.** Combustible liquids are defined in NFPA 30. Combustible liquids are classified in accordance with the following:

- (1) Class II Liquid — Any liquid that has a flash point at or above 37.8°C (100°F) and below 60°C (140°F)
- (2) Class III Liquid — Any liquid that has a flash point at or above 60°C (140°F)
  - (a) Class IIIA Liquid — Any liquid that has a flash point at or above 60°C (140°F), but below 93°C (200°F)

- (b) Class IIIB Liquid — Any liquid that has a flash point at or above 93°C (200°F)

**A.3.3.2 Control Zones.** The definitions from NFPA 1500 were extracted to provide conformity at fire ground operations between the documents. It is foreseeable that a fire department operating under the NFPA 1500 standard would work alongside a facility fire brigade at a fire incident. For the safety of both groups, they should operate under the same assumptions in fire ground definitions.

Decontamination as used in the definitions of cold, hot, or warm zones should not contradict the non-applicability of this standard to hazardous material response activities. Decontamination as related to NFPA 600 requirements should apply to products of combustion.

**A.3.3.6 Education.** It does not necessarily require formal classroom instruction.

**A.3.3.9 Facility.** The extent or limits for the location or facility at which a fire brigade operates might not coincide with property boundaries. The boundaries could be set by the authority having jurisdiction or in the organizational statement. The fire brigade can respond to fire incidents at locations that are familiar work places or have been pre-fire planned. At a facility or complex, there might be many different hazards or occupancy uses of structures. A fire brigade can respond at part of a site or at multiple structures at one location. Here are some examples:

- (1) Nuclear Power Plant. The fire brigade at a nuclear power plant responds inside the protected area. Beyond these limits, to the site property lines, is a security area that might contain structures. Typically these structures in the security area would be protected by a fire department complying with NFPA 1500.
- (2) College or University Campus. A science laboratory might need a fire brigade dedicated to the special hazards of the laboratory. Other occupancy uses on campus, including large assembly spaces and dormitories, might have fire brigades separate from the one at the science laboratory.
- (3) Recreational Areas. A recreational area such as a state or national park might have several lodge areas within the limits of the park. Due to distance, each lodging facility could have its own fire brigade.
- (4) Industrial Park. There might be several structures at an industrial park that could be protected by a fire brigade.

**A.3.3.14.1 Advanced Exterior Fire Fighting.** Advanced exterior fire fighting often requires facility fire brigade members to contain, control, and extinguish exterior fires involving site-specific hazards, such as flammable and combustible liquid spills or leaks, liquefied petroleum gas releases, and electrical substations. Advanced exterior fire fighting is usually performed using handlines flowing up to 1140 L/min (300 gpm), master streams, or similar devices for the manual application of specialized agents. Thermal protective clothing is required and the use of SCBA could be required.

**A.3.3.14.4 Interior Structural Fire Fighting.** This definition is extracted from OSHA, 29 CFR 1910.

Rescue is the activity of removing victims by a facility fire brigade as part of fire-fighting activities. Rescue activities requiring specialized equipment and training, such as confined space and high-angle rescue, are not included in this standard.



**A.3.3.16 Flammable Liquid.** Flammable liquids are defined in NFPA 30. Flammable liquids (Class I) are classified as Class I liquids and are further subclassified in accordance with the following:

- (1) Class IA Liquid — Any liquid that has a flash point below 22.8°C (73°F) and a boiling point below 37.8°C (100°F).
- (2) Class IB Liquid — Any liquid that has a flash point below 22.8°C (73°F) and a boiling point at or above 37.8°C (100°F).
- (3) Class IC Liquid — Any liquid that has a flash point at or above 22.8°C (73°F) but below 37.8°C (100°F).

**A.3.3.17 Incident Management System (IMS).** The system is also referred to as an incident command system (ICS).

The implementation of HSPD-5 led to the development of the National Incident Management System (NIMS). The NIMS is a system mandated by HSPD-5 that provides a consistent nationwide approach for federal, state, local, and tribal governments; the private sector; and nongovernmental organizations to work effectively and efficiently together to prepare for, respond to, and recover from domestic incidents, regardless of cause, size, or complexity. To provide for interoperability and compatibility among federal, state, local, and tribal capabilities, the NIMS includes a core set of concepts, principles, and terminology. HSPD-5 identifies these as the ICS; multi-agency coordination systems; training; identification and management of resources (including systems for classifying types of resources); qualification and certification; and the collection, tracking, and reporting of incident information and incident resources.

In addition to the NIMS, the process also incorporates the National Response Plan. The National Response Plan is defined as a plan mandated by HSPD-5 that integrates federal domestic prevention, preparedness, response, and recovery plans into one all-discipline, all-hazards plan. [1561: A.3.3.30]

**A.3.3.18 Incipient Stage Fire.** A fire is considered to be beyond the incipient stage when the use of thermal protective clothing or self-contained breathing apparatus is required or a facility fire brigade member is required to crawl on the ground or floor to stay below smoke and heat.

**A.3.3.21 Qualified Healthcare Professional.** Individuals who meet the definition of Physician or Other Licensed Healthcare Professional (PLHCP) as defined by OSHA standards and who have professional expertise in the areas of occupational safety and health as they relate to emergency response activities would meet this requirement.

**A.3.3.26 Support Members.** When organizing the facility fire brigade, management should take into consideration the need for specialized response duties required in the event of a fire or related emergency and should assign personnel to the brigade to ensure that these response duties are accomplished.

In most cases, personnel are not expected to perform manual fire suppression activities in the event of an emergency but are expected to perform only those specialized tasks for which they have been chosen. Some of these specialized assignments include the following:

- (1) Building evacuation: Personnel are expected to perform specialized response duties to ensure that personnel are safely evacuated from an enclosed structure or the facility in the event of fire. They can be known as facility fire brigade wardens or by a variety of other titles.

- (2) Sprinkler system control: Personnel are assigned to perform specialized response duties to ensure that control of the automatic sprinkler protection system within the fire area or the facility is maintained by facility personnel in the event of fire. These personnel can be known as facility fire brigade sprinkler valve operators or a variety of other titles.
- (3) Electrical power control: Personnel are expected to perform specialized response duties to ensure that control of electrical power within the fire area or the facility is maintained by facility personnel in the event of fire. These personnel can be known as facility fire brigade electricians or by a variety of other titles.
- (4) Utility control: Personnel are expected to perform specialized response duties to ensure that control of plant utilities within the fire area or the facility — for example, steam, water, natural gas, and other liquid or vapor piping systems — is maintained by facility personnel in the event of fire. These personnel can be known as facility fire brigade utility control technicians or by a variety of other titles.
- (5) Fire pump operation: Personnel are expected to perform specialized response duties to ensure that stationary fire pumps are placed into operation or are operating properly in the event of fire. They can be known as facility fire brigade fire pump operators or by a variety of other titles.
- (6) Salvage: Personnel are expected to perform specialized response duties to ensure that actions are taken during and after manual fire suppression activities to minimize the resultant damage from the fire. These personnel can be known as facility fire brigade salvage personnel or by a variety of other titles.
- (7) Traffic control: Personnel are expected to perform specialized response duties to ensure that control of foot and vehicular traffic in and around the fire area or the facility is maintained in the event of fire and to ensure that any responding agency is directed to the fire area. These operations can be accomplished by facility security personnel who have been assigned to the facility fire brigade.

**A.4.1.2** Designated workers who are intended to respond to incipient fires in their immediate work area should receive training commensurate with the response duties they are expected to perform. Their responsibilities normally are limited to sounding an alarm, taking immediate action to extinguish the fire, and evacuating the area.

**A.4.1.3** A facility fire brigade operating in multiple types should clearly identify each brigade member to show the type of fire incident activities for which they are trained.

**A.4.1.4** The potential exposure and training separates an organized facility fire brigade from designated workers (as defined by OSHA) who have some fire response duties in the general work area. The scope of facility fire brigade actions and responsibilities should be based on the specific response duties that the facility fire brigade members are expected to perform. If a facility fire brigade member is not expected to perform a particular fire-fighting function, then management should not have an obligation to train or equip the facility fire brigade member to perform that function.

**A.4.1.4.3** The minimum number varies depending on the operational limits of the facility fire brigade. As the duties increase, the number of members might need to be increased.

A facility fire brigade doing interior structural fire fighting should logically have at least five members; two for work in the hot zone, two for relief and safety in the warm zone, and one managing the fire-fighting activities.

**A.4.1.5** Identification serves the following purposes:

- (1) Assistance in reaching the incident in an emergency
- (2) Identification by security personnel
- (3) Establishing authority

**A.4.2.1(2)** The facility fire brigade duties should be determined based on an analysis of all factors present in the areas where the brigade will operate, including, but not limited to, the following:

- (1) Property size
- (2) Property accessibility
- (3) Building size and construction
- (4) Building contents
- (5) Fire protection equipment
- (6) Fire hazards
- (7) Personnel safety
- (8) Public fire department assistance
- (9) Availability of personnel
- (10) Shift and vacation schedule of the facility
- (11) Other response duties of the brigade, such as fire watch and maintenance of fire-fighting equipment

**A.4.2.1(3)** The establishment of a written policy for the occupational safety and health of facility fire brigade members is intended to help prevent, and reduce the severity of, accidents, injuries, and exposures that occur. An existing corporate safety program or policy could satisfy the requirements of this standard.

**A.4.2.1(4)** The establishment of a written policy for medical and job-related physical performance requirements should help ensure facility fire brigade members are medically and physically capable of performing their required duties and reduce the risk of injuries and illnesses.

**A.4.2.1(8)** Even during times of economic stress, providing adequate funds for proper equipment and training is necessary in order to maintain the safety and operational effectiveness of the facility fire brigade.

**A.4.2.2** The facility fire brigade organizational statement represents the foundation of the facility fire brigade and is similar to the mission statement of the organization. The organizational statement should be revised periodically as the mission, organization, or response duties of the brigade change. The following is a sample facility fire brigade organizational statement.

#### **ABC Facility Fire Brigade Organizational Statement November 2004**

**Purpose:** The ABC Facility Fire Brigade was organized to safeguard the workers and the property of the ABC Corporation from the threat of fire. The facility fire brigade is intended to function as an incipient stage facility fire brigade as identified by OSHA, 29 CFR 1910, Subpart L.

**Membership:** Anyone who works at the ABC Corporation is welcome to join the facility fire brigade, although certain specific members are appointed, based on their particular job and location within the facility. At the present time, there are a total of 25 members in the brigade.

Members are identified as fire-fighting members and support members. Fire-fighting members are expected to perform fire-fighting response duties, utilizing both hand portable fire extinguishers and wheeled fire extinguishers and the 38 mm (1½ in.) hose lines stationed throughout the facility. Support members are not expected to fight fires but are

expected to perform specialized response duties that are intended to support the fire-fighting operations. These support functions ensure the following:

- (1) Building is evacuated.
- (2) Sprinkler valves are open.
- (3) Fire department is directed to the scene of the fire.
- (4) Fire pump is operating properly.
- (5) Other logistical needs of the fire-fighting members are met.

**Organization:** The brigade is headed by a brigade chief. A shift facility fire brigade leader is also assigned to each shift. In the absence of the chief, the shift chief is in charge of the brigade. During a fire incident, the shift chief or brigade chief is in charge of the incident until the local municipal fire department arrives. At this time, the officer in charge of the fire department forces on scene and the shift chief will establish a joint incident command.

**Functions:** The primary function of the facility fire brigade is to perform fire-fighting operations prior to the arrival of the fire department or operation of the sprinkler system. The fire-fighting operations cannot exceed the capabilities of the brigade members present to prevent fires from spreading.

Additional functions include the provision of advanced first aid assistance in any salvage operations that are necessary during any type of incident, including a fire, and the checking of fire protection and life safety equipment throughout the facility on a daily basis.

**Training:** The primary source of training for fire-fighting members is that conducted within the facility by the facility fire brigade training officer. This training is conducted on a monthly basis.

Support members receive training on a bimonthly basis in the operation of the fire protection equipment, building evacuation information, and other related topics. This training is provided by the facility fire brigade training officer and other personnel from the facility, such as the maintenance supervisor, the emergency coordinator, and the safety director.

**Safety:** While this facility fire brigade exists to help safeguard the people and property of the ABC Corporation, the first and foremost consideration must be for the safety of the facility fire brigade members. The brigade has limited resources and training and thus has limited abilities. These limits must be recognized by all members to ensure that members are not extended beyond their capabilities or the limitations imposed by the equipment with which they must operate.

#### **Sample Organizational Statement — An Alternative Sample**

The ABC Corporation, under contract with the XYZ Company for management and operation of the XYZ plant, will use an emergency response team (ERT) for the protection of those facilities.

The ERT is composed of workers whose normal job duties are not that of an ERT. In the event of an incident, ERT members will leave their normal assigned duties and assume the response duties of the ERT. Responding ERT members will be grouped into teams, and designated ERT leaders (ERTLs) using the Incident Management System will direct and supervise emergency response operations. The total number of available ERT members responding to an incident will vary from 2 to 40 depending on the particular site, the time of day, and response times. As dictated by the size and duration of the incident, this number could increase to more than 100 with response by trained ERT members and leaders from other XYZ plant sites.





For fires involving enclosed structures, the ERT will perform only incipient fire fighting and will not enter into a building or enclosed structure involved with fire beyond the incipient stage. For a building involved with fire beyond the incipient stage, ERT members will notify local municipal fire departments or mutual aid organizations to respond and will assist with evacuation, account for personnel, perform first aid, and protect adjacent exposures.

For emergency fire response to the site-specific hazards associated with the storage and transfer of crude oil, the ERT will perform advanced exterior fire fighting. In performing advanced exterior fire fighting, ERT members will wear protective gear and will have responsibilities for rescue, emergency first aid, isolation of fuel sources, and application of water, foam, and dry chemical from the perimeter of the fire, which does not require entry into the interior of enclosed structures involved with fire beyond the incipient stage. Emergency contractors will be employed as necessary for complex fire emergencies that are beyond the training of the ERT.

For response to site-specific hazardous materials emergencies, the ERT will perform limited functions. In performing the limited hazardous materials functions, ERT members will be provided with appropriate personal protective equipment and will approach the source of a spill or leak and attempt to contain, control, and terminate the emergency conditions for which they have been trained. Emergency contractors will be employed as necessary for complex spills, leaks, and cleanups that are beyond that for which the ERT are trained.

Each ERT member will receive training and education commensurate with the response duties and functions they are expected to perform. Forty hours of fire, safety, and hazardous materials response training will be provided annually at the ERT Training Academy using established performance-based standards. Training at the academy will include, but not be limited to, hose and nozzle handling, fire fighter safety, use of protective gear, strategies and tactics, first aid, cardiopulmonary resuscitation (CPR), hazard identification, spill control, and live fire fighting involving flammable liquids and gases. ERT members must attend and successfully complete one ERT Training Academy program before participating in emergency response organizations.

ERT members will receive additional fire training quarterly. Training will be provided at each of the ABC Corporation facilities by qualified personnel to meet established performance standards. Such training will include classroom instruction and hands-on training that has been selected to keep ERT members familiar with site-specific equipment, systems, and standard operating procedures.

Designated ERTLs will annually receive 8 hours of specialized classroom instruction and will train and function as leaders in all live fire and hazardous materials training exercises at the ERT Training Academy and at the sites. Such training will be over and above that provided to other members and will be provided by qualified personnel. Instruction will include, but not be limited to, such subjects as leadership, methods of teaching, incident command, communications, tactics and strategies, and standard operating procedures.

**A.4.2.2.1** The purpose of the facility fire brigade's organizational statement is to demonstrate management's commitment to the establishment of a facility fire brigade. This statement identifies all of the information pertinent to the facility fire brigade and is intended to provide the facility fire brigade member with a clear picture of the organization of the brigade

and the response duties that he or she is expected to perform as they relate to the facility fire brigade.

**A.4.2.2.2(1)** The organizational structure should include, but not be limited to, all of the following:

- (1) Line of authority of each facility fire brigade member
- (2) Number of deputy facility fire brigade leaders
- (3) Number of facility fire brigade instructors
- (4) List and description of the types of awards or recognition that brigade members are eligible to receive

**A.4.2.2.2(4)** Everything the brigade does should be in accordance with the information in the organizational statement.

**A.4.2.4** The following is an example of a safety policy statement:

It is corporate or local company policy to operate a facility fire brigade and to provide all facility fire brigade members with the highest practicable levels of safety and health while they are performing their assigned facility fire brigade response duties.

**A.4.2.4.2** The determination of whether the individual will have a full-time or part-time assignment should be made by management. This determination should depend on the size and structure of the facility fire brigade; the activity level; the level of risk in the facility fire brigade's work environment; and the history of accidents, injuries, occupational illness, deaths, and exposures.

**A.4.2.5** Medical records can be stored elsewhere in accordance with company policies.

**A.4.3.2** Site-specific special hazards should be identified and itemized for the facility fire brigade, along with a detailed explanation of each hazard. Special hazards can consist of unique operations or hazardous materials. Examples of special operations are emergency response activities for data processing and electronic control equipment. Special hazards can include, but not be limited to:

- (1) Discharge of a special extinguishing agent
- (2) Engine test areas
- (3) Paint dip, mix, and storage rooms
- (4) Spray booths
- (5) Flammable liquid tank farms
- (6) Oil quenching and machinery operations
- (7) Energized electrical equipment
- (8) Hazardous materials
- (9) Combustible dusts

**A.4.4.1** For information on incident management systems, see NFPA 1561.

**A.4.4.4** Facility fire brigades are often organized in such a manner that they respond to the incident scene and assemble upon arrival. A system should be established to identify each facility fire brigade member arriving at the incident scene and to organize them into groups with appropriate supervision.

**A.4.5.1** Review NFPA 1250 for guidance.

**A.4.5.2** Incident operations can be exercised using scenarios played out on table top as well as drills used for training. The risks identified in such exercises should validate or provide input to changes in the risk management plan.

**A.4.6.1** The training program should ensure that brigade members are able to perform their assigned response duties in a manner that does not pose a hazard to them or other members.

**A.4.6.1.1(1)** Illness can occur sometime after performing the duties rather than during fire brigade activities.

**A.4.6.1.1(2)** Members of the facility fire brigade should be afforded opportunities to improve their skills and knowledge of fire prevention and fire fighting through attendance at outside meetings and special training classes. Members who belong to volunteer fire departments and who receive certified training from a qualified instructor as a part of their public fire department activities can have this training documented in their individual facility fire brigade training records.

**A.4.6.1.2(1)** Because members will be required to meet the provisions of this standard that apply to the type of facility fire brigade of which they are members, it is important that the applicable provisions of this standard be reviewed in the training program.

**A.4.6.2** The facility fire brigade training coordinator should be a worker who is recognized or certified as a facility fire brigade or fire service instructor by a government authority or national certification organization, or the coordinator should demonstrate the competency to meet the requirements of management in its role as an authority having jurisdiction.

For information on performance standards for facility fire brigade instructors, see NFPA 1041 or equivalent performance standards.

Where facility fire brigade training is contracted and provided by individuals or agencies outside of the company organization, the designated fire training coordinator should verify and ensure that instructors providing the training are knowledgeable in the subjects being presented. Such training should be accomplished using prepared lesson plans and performance-based standards that have been approved by the facility fire brigade training coordinator.

Workers and members of the facility fire brigade who have been trained in the methods of teaching and are recognized by the fire training coordinator as knowledgeable in the subject being presented can provide instruction to the facility fire brigade with the use of prepared lesson plans and performance-based standards that have been approved by the fire training coordinator.

The facility fire brigade training coordinator should oversee the facility fire brigade training and education program to ensure quality and consistency of the training provided.

**A.4.6.4** Job training requirements can vary significantly from one location to another. Those requirements should be documented based on site-specific needs. In order to meet the requirements of 4.6.4, industrial fire brigade management should perform an analysis of required industrial fire brigade response duties.

**A.4.6.8** Management should develop a plan and schedule to provide training, education, and drills to ensure facility fire brigade members are capable of performing their assigned response duties. Members should also be able to perform their duties without presenting a hazard to themselves or others. Specific minimum frequencies might be required by this standard.

Scheduling difficulties in the facility setting can make it difficult to provide training, education, or drills for each individual brigade member on a specific day. For this reason, the following clarifications are intended to provide the necessary flexibility for planning and scheduling these activities:

- (1) Quarterly requirements should be accomplished every 90 days and should not exceed 120 days between sessions.
- (2) Semiannual requirements should be accomplished every 183 days and should not exceed 243 days between sessions.
- (3) Annual requirements should be accomplished every 365 days and should not exceed 455 days between sessions.

**A.4.6.9** Facility fire brigade leaders should be provided training on the incident management system. For information on performance standards for facility fire brigade leaders, see NFPA 1081; Chapter 4 of NFPA 1021; or other relevant performance standards.

**A.4.7.1** Drill performance standards should be based on realistic scenarios for credible site-specific incidents (*see NFPA 1410 for examples*). Drills can be either announced or unannounced as determined by the authority having jurisdiction. Management should consider the use of periodic unannounced drills. Announced drills can vary in types of response, speed of response, and use of equipment. Unannounced drills can be used to evaluate the fire-fighting readiness of the facility fire brigade, facility fire brigade leader, and fire protection systems and equipment.

Where mutual aid or other outside agencies play an important role in the emergency response procedures of the site, drills and pre-incident planning should be conducted in conjunction with these agencies.

Responses to actual incidents can reduce the necessity to conduct drills providing the responses occur with sufficient frequency and the facility fire brigade performance is evaluated in accordance with established performance objectives. The evaluation should be properly documented.

**A.4.7.1.1** Drill scenarios should be realistic to the maximum extent practicable without undue risk to the fire brigade members or facility operations.

**A.4.7.1.2** Drills should be conducted as often as necessary to keep facility fire brigade performance at established standards.

**A.4.7.1.3** The fire brigade leader should ensure that the drill presents no undue risk to the fire brigade members or facility operations.

**A.4.7.2** Fire brigade members should respond to a drill in the same manner that they would for a real fire. For example, fire brigade members entering a hot zone should be using protective gear and equipment such as protective clothing, SCBAs, and PASS devices. Hose lines should be laid out and pressurized. Doors should be checked for high temperatures prior to opening. However, some fire-fighting activities, such as discharging a fire hose in certain areas, can pose undue risk to facility operations.

**A.4.7.3.2** The evaluation should not only be pass/fail, but include a report of the adequacy of the performance. For example, a fire brigade member could have come to the correct result in the scenario, but performed in a manner that might have taken too much time or been dangerous to themselves or others.

**A.4.7.3.4** The evaluation should be conducted by an individual other than the facility fire brigade members being evaluated. The person conducting the evaluation should be qualified in the subject of the drill.



**A.4.7.3.4.3** Facility fire brigade members should be given the chance to retrain and requalify for their position. The facility fire brigade leader should evaluate the entire record before reinstating a member.

**A.4.9.1(5)** Facility fire brigade management should maintain a close working relationship with all emergency response organizations that could reasonably be expected to respond to the facility during an incident. This relationship should include the following:

- (1) A written mutual aid agreement signed by management and the emergency response organization
- (2) Establishment of an incident management system that identifies the roles and responsibilities of both the facility fire brigade and the emergency response organization
- (3) An invitation to the emergency response organizations to participate in a pre-fire planning walk-through or tour of the facility
- (4) An invitation to the emergency response organizations to participate in facility fire brigade drills at least annually
- (5) A means of communication between the facility fire brigade and the emergency response organizations (This communication can be accomplished by the use of common radio frequencies, the exchange of respective portable radios, or other means.)
- (6) A means to ensure that fire hose threads are compatible or that adequate adapters are provided and available
- (7) Knowledge by both the facility fire brigade and the emergency response organizations of the other's available equipment (This information should include items such as water supply, pump size, foam capabilities, portable or fixed master stream devices, or both, and other specialized equipment.)

**A.4.9.1(6)** Facility fire brigade members should represent as many separate areas and departments of the facility as is practical.

**A.4.9.2(2)** Fire brigade leader duties might be collateral duty to a worker's normal job. While it would be desirable for the leader to assist in the selection of fire brigade members, it might not be practical within the allowable time commitment. The fire brigade leader should enforce qualifications so that fire brigade members are prepared to respond efficiently and safely to an incident.

**A.4.10.1.1** For information on medical requirements, see OSHA requirements in 29 CFR 1910.156, 29 CFR 1910.134, or NFPA 1582.

**A.4.10.3** Minimum physical performance requirements should be established to ensure that facility fire brigade members are able to satisfactorily perform their assigned emergency response activities under adverse conditions.

**A.4.10.3.1** Many critical emergency response activities can be physically demanding. These tasks require muscular strength, muscular endurance, aerobic capacity, flexibility, equilibrium, and anaerobic power. Facility fire brigade management should include these capabilities for the evaluation of facility fire brigade members.

**A.4.10.4** Facility fire brigade members should be encouraged to maintain good physical condition.

**A.4.11.2** In selecting the equipment necessary to allow the facility fire brigade members to perform their response duties as specified in the facility fire brigade organizational state-

ment, management should recognize that such a selection can be drawn from a wide range of equipment. The following is a sample of the equipment more commonly selected:

- (1) Portable fire extinguishers in accordance with NFPA 10
- (2) Hose and hose accessories in accordance with NFPA 1961 and maintained in accordance with NFPA 1962
- (3) Portable lighting equipment, including portable electric generators, extension cords, electrical adapters, hand-held lights, and spare batteries
- (4) Forcible entry tools, including axes, saws, power tools, plaster hooks, pike poles, claw tools, door openers, crowbars, sledgehammers, wire and bolt cutters, and battering rams
- (5) Ladders
- (6) Salvage and overhaul equipment
- (7) Rescue and first aid equipment
- (8) Special purpose equipment, such as portable foam-making equipment
- (9) Personnel protective equipment

**A.4.12.2** For information on performance standards for facility fire brigade apparatus operators, see NFPA 1081; Chapters 4 through 8 of NFPA 1002; or other performance standards.

**A.4.12.3** 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 should be used.

**A.4.12.4.1** The inspection should identify deficiencies in the operation of the apparatus or unsafe conditions.

**A.5.3.1** Training and education objectives can be accomplished in the same session.

**A.5.3.3** Live training fire field safety recommendations are as follows:

- (1) Site selection preparation: Select an open area with a safe clearance from important buildings, dry vegetation, and storage containers holding flammable liquids and gases and compressed gases.
- (2) Safety procedures: The following procedures should be followed:
  - (a) Smoking should be permitted only in designated areas.
  - (b) Fuel and ignition sources should be separated by safe distances.
  - (c) If high winds or other adverse weather conditions present a hazard to members or adjacent property, live fire training should not be conducted.
  - (d) Only appropriate ignition sources should be used.
  - (e) When participating in an evolution, each student should utilize a charged extinguisher.
  - (f) Fire attack should be from the upwind side.
  - (g) Care should be taken to ensure that members are not placed at risk of being exposed to the products of combustion.
  - (h) For Class B fires, at least two portable extinguishers of the applicable size and rating should be available for each evolution.
  - (i) Participants should retreat from an extinguished fire in an organized manner, always being alert for possible reflash or rekindle.
- (3) Fire training evolutions: Evolutions should be commensurate with the size of fires that the members are expected to extinguish in their normal response duties.



- (4) Student clothing: Individuals participating in field evolutions should be attired in the type of clothing they would normally wear during the performance of their day-to-day job function.
- (5) Instructors: The instructor should perform the following functions:
  - (a) Guide each student while he or she is approaching, extinguishing, and retreating from each live fire training evolution
  - (b) Provide for the proper supervision of members who are not participating in the current evolution
- (6) Fuels: Fuels and handling procedures should meet the following criteria:
  - (a) Flammable liquids should not be used as accelerants to ignite Class A training fires.
  - (b) Only approved safety containers should be used to dispense combustible liquids used as accelerants.
  - (c) The person fueling and lighting the fire should be properly instructed and should wear appropriate protective clothing.
  - (d) A qualified person equipped with a charged handline or appropriate extinguisher should stand by in any case where a combustible liquid is being used to light a training fire.

**A.6.3(2)** Industrial fire brigade members using SCBA should be fit-tested to meet the requirements of NFPA and 29 CFR 1910.134, “Respiratory Protection.”

**A.6.5.2** Based on site-specific hazards, the authority having jurisdiction can choose either structural or proximity thermal protective clothing for advanced exterior fire fighting. In most situations, structural fire-fighting clothing will provide an appropriate level of protection. However, in special circumstances, proximity clothing can be used to provide an additional level of protection from high levels of radiant heat.

**A.6.5.5** Radios can be used for communication on the fire-ground; however, they cannot be the sole tool for accounting for one’s partner in the interior of a structure fire.

One of the two individuals located outside the hot zone can be assigned to an additional role, such as incident commander in charge of the emergency or safety officer, so long as this individual is able to perform assistance or rescue activities without jeopardizing the safety or health of any fire fighters working at the incident. Nothing in this subsection is meant to preclude fire fighters from performing emergency rescue activities before facility fire brigade team members have assembled.

Separate teams of two or more who remain outside the structure are not required for each team operating in the interior of a structure fire. If a structure is so large that accountability cannot be maintained from a single entry point, or rapid rescue is not possible, additional teams of at least two members should be assigned to appropriate divisions or sectors in accordance with the incident management system for the site.

## Annex B Informational References

**B.1 Referenced Publications.** The documents or portions thereof listed in this annex are referenced within the informational sections of this standard and are not part of the requirements of this document unless also listed in Chapter 2 for other reasons.

**B.1.1 NFPA Publications.** National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471.

NFPA 10, *Standard for Portable Fire Extinguishers*, 2013 edition.

NFPA 30, *Flammable and Combustible Liquids Code*, 2015 edition.

NFPA 1002, *Standard for Fire Apparatus Driver/Operator Professional Qualifications*, 2014 edition.

NFPA 1021, *Standard for Fire Officer Professional Qualifications*, 2014 edition.

NFPA 1041, *Standard for Fire Service Instructor Professional Qualifications*, 2012 edition.

NFPA 1081, *Standard for Industrial Fire Brigade Member Professional Qualifications*, 2012 edition.

NFPA 1250, *Recommended Practice in Fire and Emergency Services Organization Risk Management*, 2015 edition.

NFPA 1410, *Standard on Training for Emergency Scene Operations*, 2015 edition.

NFPA 1500, *Standard on Fire Department Occupational Safety and Health Program*, 2013 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*, 2013 edition.

NFPA 1961, *Standard on Fire Hose*, 2013 edition.

NFPA 1962, *Standard for the Care, Use, Inspection, Service Testing, and Replacement of Fire Hose, Couplings, Nozzles, and Fire Hose Appliances*, 2013 edition.

NFPA *Industrial Fire Hazards Handbook*, third edition, 1990.

### B.1.2 Other Publications.

**B.1.2.1 U.S. Government Publications.** U.S. Government Printing Office, Washington, DC 20402.

Title 29, Code of Federal Regulations, Part 1910, Chapter XVII, Subpart L, “Fire Protection.”

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

Title 29, Code of Federal Regulations, Part 1910.156, “Fire Brigades.”

**B.2 Informational References.** The following documents or portions thereof are listed here as informational resources only. They are not a part of the requirements of this document.

NFPA 1001, *Standard for Fire Fighter Professional Qualifications*, 2013 edition.

### B.3 References for Extracts in Informational Sections.

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



## Index

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