

NFPA[®]

1081

**Standard for
Facility Fire Brigade Member
Professional Qualifications**

2018



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NFPA® 1081

Standard for

Facility Fire Brigade Member Professional Qualifications

2018 Edition

This edition of NFPA 1081, *Standard for Facility Fire Brigade Member Professional Qualifications*, was prepared by the Technical Committee on Industrial Fire Brigades Professional Qualifications and released by the Correlating Committee on Professional Qualifications. It was issued by the Standards Council on November 10, 2017, with an effective date of November 30, 2017, and supersedes all previous editions.

This edition of NFPA 1081 was approved as an American National Standard on November 30, 2017.

Origin and Development of NFPA 1081

In 1996, the NFPA Standards Council, after receipt of a request for the development of a standard for the professional qualifications of industrial fire brigade members, approved the establishment of a Technical Committee on Industrial Fire Brigades Member Professional Qualifications under the Professional Qualifications project. The purpose of the document was to identify requirements for personnel who perform as members of organized industrial fire brigades at specific sites or facilities. An organizational meeting of the new committee was held in October 1997 in Tampa, FL. The technical committee met a total of eight times during the development of this document.

The development process was coordinated with other professional qualifications documents and with the Technical Committee on Loss Prevention Procedures and Practices, the committee responsible for NFPA 600, *Standard on Industrial Fire Brigades*. To accommodate the site-specific needs of industrial fire brigades at various locations, the committee developed a core set of job performance requirements, as well as site-specific requirements for each defined level in the document. The intent is that the management of a facility utilizing the requirements of NFPA 1081 would identify those site-specific requirements applicable to the facility and incorporate them into the requirements for their industrial fire brigade members. This departure from the traditional style of other professional qualifications documents was necessary in order to track with the NFPA 600 and OSHA requirements in 29 CFR 1910.156 for fire brigades.

The first edition of NFPA 1081, *Standard for Industrial Fire Brigade Member Professional Qualifications*, adopted at the May 2001 meeting of the National Fire Protection Association, established job performance requirements for the levels of industrial fire brigade operations defined in NFPA 600: Incipient, Advanced Exterior, and Interior Structural. Requirements for the position of Fire Brigade Leader were also provided in the document.

The 2007 edition of NFPA 1081 was a complete revision of the document and included editorial changes to JPRs, Requisite Knowledge and Requisite Skills statements, and their associated Annex A statements. New material was also added for “site-specific requirements.”

In the 2012 edition of NFPA 1081, the committee added time requirements of 2 minutes (120 seconds) to Chapters 6 and 7 that relate to the donning and doffing of thermal protective clothing and donning and activation of SCBA and PASS devices. In addition, a section was added that addressed the limits and responsibilities of industrial fire brigade members in order to be consistent with NFPA 600, *Standard on Industrial Fire Brigades*. The committee also added a chapter to address the qualifications that support members would provide to the industrial fire brigade.

For the 2018 edition, the committee has changed the title of NFPA 1081 from *Standard for Industrial Fire Brigade Member Professional Qualifications* to *Standard for Facility Fire Brigade Member Professional Qualifications* to mirror a similar change to the title of NFPA 600, *Standard on Facility Fire Brigades*. The committee has reformatted the chapters of the document to align with the template as recommended by the Correlating Committee for Professional Qualifications. The committee has updated extracts and definitions, and has evaluated and revised as necessary the JPRs for the positions identified in the document.

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Committee Scope: This Committee shall have primary responsibility for documents on professional qualifications required for personnel who participate as members of industrial fire brigades.

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NFPA 1081

Standard for

Facility Fire Brigade Member Professional Qualifications

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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 G. 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 G.

Chapter 1 Administration

1.1* Scope. This standard identifies the minimum job performance requirements (JPRs) for incipient facility fire brigade member, advanced exterior facility fire brigade member, interior structural facility fire brigade member, facility fire brigade leader, facility fire brigade training coordinator, and support member.

1.2 Purpose. The purpose of this standard is to specify the minimum JPRs as an incipient facility fire brigade member, advanced exterior facility fire brigade member, interior structural facility fire brigade member, facility fire brigade leader, facility fire brigade training coordinator, and support member.

1.2.1 This standard shall define incipient facility fire brigade member, advanced exterior facility fire brigade member, interior structural facility fire brigade member, facility fire brigade

leader, facility fire brigade training coordinator, and support member.

1.2.2 The intent of this standard shall be to ensure that personnel serving an incipient facility fire brigade member, advanced exterior facility fire brigade member, interior structural facility fire brigade member, facility fire brigade leader, facility fire brigade training coordinator, and support member are qualified.

1.2.3* This standard shall not address organization or management responsibility.

1.2.4 It is not the intent of this standard to restrict any jurisdiction from exceeding or combining these minimum requirements.

1.2.5 JPRs for each level and position are the tasks personnel shall be able to perform to carry out the job duties.

1.2.6* Incipient facility fire brigade member, advanced exterior facility fire brigade member, interior structural facility fire brigade member, facility fire brigade leader, facility fire brigade training coordinator, and support member shall remain current with the general knowledge and skills and JPRs addressed for each level or position of qualification.

1.3 Application. The application of this standard is to specify which requirements within the document shall apply to an incipient facility fire brigade member, advanced exterior facility fire brigade member, interior structural facility fire brigade member, facility fire brigade leader, facility fire brigade training coordinator, and support member.

1.3.1* The JPRs shall be accomplished in accordance with the requirements of the authority having jurisdiction (AHJ) and all applicable NFPA standards.

1.3.2* It shall not be required that the JPRs be mastered in the order in which they appear. The AHJ shall establish instructional priority and the training program content to prepare personnel to meet the JPRs of this standard. The management of the facility fire brigade shall establish an ongoing process to ensure that members continue to meet the JPRs of this standard.

1.3.3* Performance of each requirement of this standard shall be evaluated by personnel approved by the AHJ.

1.3.4 The JPRs for each level or position shall be completed in accordance with recognized practices and procedures or as defined by law or by the AHJ.

1.3.5 Personnel assigned the duties of incipient facility fire brigade member shall meet all the requirements defined in Chapter 4 prior to being qualified. Personnel assigned the duties of advanced exterior facility fire brigade member shall meet all the requirements defined in Chapter 5 prior to being qualified. Personnel assigned the duties of interior structural facility fire brigade member shall meet all the requirements defined in Chapter 6 prior to being qualified. Personnel assigned the duties of facility fire brigade leader shall meet all the requirements defined in Chapter 7 prior to being qualified. Personnel assigned the duties of facility fire brigade training coordinator shall meet all the requirements defined in Chapter 8 prior to being qualified. Personnel assigned the duties of support member shall meet all the requirements defined in Chapter 9 prior to being qualified.

N 1.3.6 The AHJ shall provide personal protective clothing (PPE) and the equipment necessary to conduct assignments.

N 1.3.7 JPRs involving exposure to products of combustion shall be performed in approved PPE.

N 1.3.8 Prior to training to meet the requirements of this standard, personnel shall meet the following requirements:

- (1) Educational requirements established by the AHJ
- (2) Age requirements established by the AHJ
- (3) Medical requirements established by the AHJ
- (4) Job-related physical performance requirements established by the AHJ

N 1.3.9 Emergency Medical Care. The emergency medical care performance capabilities for facility fire brigade personnel shall be determined and validated by the management of the facility fire brigade.

N 1.3.10 Wherever in this standard the terms *rules*, *regulations*, *procedures*, *supplies*, *apparatus*, or *equipment* are referred to, it is implied that they are those of the management of the facility fire brigade.

1.4* Limits of Actions and Responsibilities of the Facility Fire Brigade.

1.4.1 General. [600:1.4.1]

N 1.4.1.1 The potential exposure to a hazardous environment and the extent of training shall determine the limits of facility fire brigade actions and responsibilities. [600:4.1.4.1]

N 1.4.1.2 The written facility fire brigade organizational statement and standard operating procedures shall define these limits. [600:4.1.4.2]

N 1.4.2* At facilities where designated employees are trained to respond to incipient fires, the facility fire brigade shall assume command of the incident upon arrival. [600:4.1.2]

N 1.4.3 Incident Management System (IMS). An incident management system (IMS) shall be utilized during incidents beyond the incipient stage and in training operations. [600:4.4]

N 1.4.3.1* An incident management system shall be established with written procedures. [600:4.4.1]

N 1.4.3.1.1 Facility fire brigade members shall be familiar with the incident management system. [600:4.4.1.1]

N 1.4.3.1.2 The incident management system shall identify roles and responsibilities of leadership. [600:4.4.1.2]

N 1.4.3.1.2.1 There shall be an incident commander at each incident where the incident management system is used. [600:4.4.1.2.1]

N 1.4.3.1.2.2 Leadership shall be responsible for safety during facility fire brigade operations. [600:4.4.1.2.2]

N 1.4.3.2 Safety responsibilities shall be assigned to supervisory personnel at each level of the organization. [600:4.4.2]

N 1.4.3.3 The incident management system shall include the roles and responsibilities of any responding public fire department and other outside agencies. [600:4.4.3]

N 1.4.3.4* A standard system shall be used to identify and account for each facility fire brigade member present at the scene of the incident. [600:4.4.4]

N 1.4.3.5 The incident commander shall ensure that the risk to members is evaluated prior to taking action. [600:4.4.5]

N 1.4.3.5.1 In situations where the risk to facility fire brigade members is unacceptable, the incident response activities shall be limited to defensive fire fighting. [600:4.4.5.1]

N 1.4.3.5.2 Regardless of the risk, actions shall not exceed the scope of the organizational statement and standard operating procedures. [600:4.4.5.2]

1.4.4 Limits for Facility Fire Brigades Assigned Incipient Fire-Fighting Response Duties. [600:5.2]

N 1.4.4.1 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).

[600:5.2]

N 1.4.4.2 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 incipient 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.

The facility fire brigade is able to perform defensive action effectively using handlines flowing up to 473 L/min (125 gpm), master streams, or similar devices for the manual application of specialized agents. [600:6.2.2]

1.4.5 Limits for Facility Fire Brigades Assigned Only Advanced Exterior Fire-Fighting Response Duties.

N 1.4.5.1 Exterior fires shall be considered appropriate for offensive action within the hot zone by facility fire brigade members who have been assigned advanced exterior fire-fighting response duties when all of 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 473 L/min (125 gpm), master streams, or similar devices for the manual application of specialized agents.

1.4.6 Limits for Facility Fire Brigade Assigned Only Interior Structural Fire-Fighting Response Duties.

N 1.4.6.1 Interior structural fires shall be considered appropriate for offensive action within the hot zone by facility fire brigade members who have been assigned 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 protective clothing for structural fire fighting are provided.
- (4) The facility fire brigade is able to perform offensive actions effectively, using handlines flowing up to 473 L/min (125 gpm), master streams, or similar devices for the manual application of specialized agents.

N 1.4.7 Limits of Facility Fire Brigades Assigned Both Advanced Exterior and Interior Structural Fire-Fighting Response Duties. [600: 6.2]

N 1.4.7.1 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 300 gpm (1140 L/min), master streams, or similar devices for the manual application of specialized agents.

[600:6.2.1]

N 1.4.7.2 Protective clothing for proximity fire fighting shall not be worn for interior structural fire fighting. [600:6.2.3]

1.5 Units and Formulas. In this standard, values for measurement are followed by an equivalent in U.S. units, but only the first stated value shall be regarded as the requirement. Equivalent values are not considered as the requirement, as these values can be approximate. (See Table 1.5.)

Table 1.5 SI Conversions

Quantity	SI Unit/Symbol	U.S. Unit/Symbol	Conversion Factor
Length	millimeter (mm)	inch (in.)	25.4 mm = 1 in.
	meter (m)	foot (ft)	0.305 m = 1 ft
Area	square meter	square foot	0.0929 m ² = 1 ft ²
	(m ²)	(ft ²)	
Volume	liters per minute	gallons per	3.78 L/min =
	(L/min)	minute (gpm)	1 gpm
Pressure	newtons/meter ²	pounds per	0.345 N/m ² =
	(N/m ²)	square inch	1 psi
		(psi)	

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

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

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

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

2.3 Other Publications.

2.3.1 U.S. Government Publications. U.S. Government Publishing Office, 732 North Capitol Street, NW, Washington, DC 20401-0001.

Title 29, Code of Federal Regulations, Part 1910.120.

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

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

NFPA 1000, *Standard for Fire Service Professional Qualifications Accreditation and Certification Systems*, 2017 edition.

NFPA 1001, *Standard for Fire Fighter Professional Qualifications*, 2018 edition.

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

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

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

NFPA 1500, *Standard on Fire Department Occupational Safety and Health Program*, 2018 edition.

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

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

NFPA 1620, *Standard for Pre-Incident Planning*, 2015 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* Listed. Equipment, materials, or services included in a list published by an organization that is acceptable to the authority having jurisdiction and concerned with evaluation of products or services, that maintains periodic inspection of production of listed equipment or materials or periodic evaluation of services, and whose listing states that either the equipment, material, or service meets appropriate designated standards or has been tested and found suitable for a specified purpose.

N 3.2.3 Shall. Indicates a mandatory requirement.

N 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 Certification. An authoritative attestation; specifically, the issuance of a document that states that an individual has demonstrated the knowledge and skills necessary to function in a particular fire service professional field. [1000, 2017]

3.3.2* Control Zones. The areas at an incident that are designated based upon safety and the degree of hazard. [1500, 2018]

Δ 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, 2018]

Δ 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, 2018]

Δ 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, 2018]

3.3.3 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. [600, 2015]

3.3.4 Emergency Response Operations. Activities related to emergency incidents, including response to the scene of the incident and specific response duties performed at the scene. [600, 2015]

3.3.5 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. [600, 2015]

3.3.6* 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. [600, 2015]

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

3.3.8 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. [600, 2015]

3.3.9 Facility Fire Brigade Leader. An individual responsible for overseeing the performance or activity of other members. [600, 2015]

3.3.10 Facility Fire Brigade Management. The individual designated by top management to be responsible for the organization, management, and functions of the facility fire brigade. [600, 2015]

3.3.11 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. [600, 2015]

N 3.3.12 Field Reduction of Contaminants. A non-mechanical process or method of reducing contamination in the field for fire-fighter personal protective clothing and equipment. [1001, 2018]

3.3.13 Fire Fighting.

Δ 3.3.13.1* Advanced Exterior Fire Fighting. Offensive fire fighting performed outside of an enclosed structure when the fire is beyond the incipient stage. [600, 2015]

3.3.13.2 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. [600, 2015]

3.3.13.3 Incipient Fire Fighting. Fire fighting performed inside or outside of an enclosed structure or building when the fire has not progressed beyond incipient stage. [600, 2015]

3.3.13.4* 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. [600, 2015]

3.3.13.5 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. [600, 2015]

Δ 3.3.13.6 Structural Fire Fighting. The activities of rescue, fire suppression, and property conservation in buildings or

other structures, vehicles, railcars, marine vessels, aircraft, or like properties. [1710, 2016]

3.3.14 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]

3.3.15* Incipient Stage Fire. The severity of a fire where the progression is in the early stage and has not developed beyond that which can be extinguished using portable fire extinguishers or handlines flowing up to 473 L/min (125 gpm) without the need for thermal protective clothing, plus a self-contained breathing apparatus (SCBA) and a personal alert safety system (PASS) device.

3.3.16 Job Performance Requirement (JPR). A written statement that describes a specific job task, lists the items necessary to complete the task, and defines measurable or observable outcomes and evaluation areas for the specific task. [1000, 2017]

3.3.17 Personal Protective Equipment (PPE). Consists of full thermal protective clothing, plus a self-contained breathing apparatus (SCBA) and a personal alert safety system (PASS) device.

3.3.18 Pre-Incident Plan. A document developed by gathering general and detailed data that is used by responding personnel in effectively managing emergencies for the protection of occupants, responding personnel, property, and the environment. [1620, 2015]

• **3.3.19 Rapid Intervention Crew/Company (RIC).** A minimum of two fully equipped personnel onsite, in a ready state, for immediate rescue of disoriented, injured, lost, or trapped rescue personnel [1006, 2017]

3.3.20 Requisite Knowledge. Fundamental knowledge one must have in order to perform a specific task. [1031, 2014]

3.3.21 Requisite Skills. The essential skills one must have in order to perform a specific task. [1031, 2014]

Δ **3.3.22 Safely.** To perform the assigned tasks without injury to self or others, to the environment, or to property.

• **3.3.23 Site-Specific Hazard.** A hazard that is present at the specific facility for which the facility fire brigade has been organized. [600, 2015]

3.3.24 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]

• **3.3.25* 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. [600, 2015]

• **3.3.26 Team.** Two or more individuals who have been assigned a common task and are in communication with each other, coordinate their activities as a work group, and support the safety of one another.

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

Chapter 4 Incipient Facility Fire Brigade Member

4.1 General. This duty shall involve initiating communications, using facility communications equipment to effectively relay oral or written information, responding to alarms, returning equipment to service, and completing incident reports, according to the JPRs in 4.1.1 through 4.2.3.

Δ **4.1.1 Qualification or Certification.** For qualification or certification at the incipient facility fire brigade level, the facility fire brigade member shall meet the entrance requirements in Chapter 1 and Sections 4.1 and 4.2, the site-specific requirements in Section 4.3 as defined by the management of the facility fire brigade, and the requirements defined in Chapter 4 of NFPA 1072.

4.1.2 Basic Incipient Facility Fire Brigade Member JPRs. All basic incipient facility fire brigade members shall have a general knowledge of basic fire behavior, operation within an incident management system, operation within the emergency response operations plan for the site, the standard operating and safety procedures for the site, and site-specific hazards.

4.1.2.1 Initiate a response to a reported emergency, given the report of an emergency, facility standard operating procedures, and communications equipment, so that all necessary information is obtained and communications equipment is operated properly.

(A) Requisite Knowledge. Procedures for reporting an emergency.

(B) Requisite Skills. The ability to operate facility communications equipment, relay information, and record information.

4.1.2.2* Transmit and receive messages via the facility communications system, given facility communications equipment and operating procedures, so that the information is promptly relayed and is accurate, complete, and clear.

(A) Requisite Knowledge. Facility communications procedures and etiquette for routine traffic, emergency traffic, and emergency evacuation signals.

(B) Requisite Skills. The ability to operate facility communications equipment and discriminate between routine and emergency communications.

4.1.2.3 Respond to a facility emergency, given the necessary equipment and facility response procedures, so that the team member arrives in a safe manner.

(A) Requisite Knowledge. Facility layout, special hazards, and emergency response procedures.

(B) Requisite Skills. The ability to recognize response hazards and to safely use each piece of response equipment provided.

4.1.2.4* Return equipment to service, given an assignment, policies, and procedures, so that the equipment is inspected, damage is noted, the equipment is cleaned, and the equipment is placed in a ready state for service or is reported otherwise.

(A) Requisite Knowledge. Types of cleaning methods for various equipment, correct use of cleaning materials, and manufacturer's or facility guidelines for returning equipment to service.

(B) Requisite Skills. The ability to clean, inspect, and maintain equipment and to complete recording and reporting procedures.

4.1.2.5* Complete a basic incident report, given the report forms, guidelines, and incident information, so that all pertinent information is recorded, the information is accurate, and the report is complete.

(A) Requisite Knowledge. Content requirements for basic incident reports, the purpose and usefulness of accurate reports, consequences of inaccurate reports, and how to obtain necessary information.

(B) Requisite Skills. The ability to collect necessary information, proof reports, and operate facility equipment necessary to complete reports.

N 4.1.3 Activating an Emergency Call. Activate an emergency call for assistance, given vision-obscured conditions, personal protective equipment (PPE), and department standard operating procedures (SOPs), so that the fire fighter can be located and rescued.

N (A) Requisite Knowledge. Personnel accountability systems, emergency communication procedures, and emergency evacuation methods.

N (B) Requisite Skills. The ability to initiate an emergency call for assistance in accordance with the AHJ's procedures, the ability to use other methods of emergency calls for assistance. [1001:4.2.4(B)]

4.2 Manual Fire Suppression. This duty shall involve tasks related to the manual control of fires and property conservation activities by the incipient facility fire brigade member.

4.2.1* Extinguish incipient fires, given an incipient fire and a selection of portable fire extinguishers, so that the correct extinguisher is chosen, the fire is completely extinguished, proper extinguisher-handling techniques are followed, and the area of origin and fire cause evidence are preserved.

(A) Requisite Knowledge. The classifications of fire; risks associated with each class of fire; and the types, rating systems, operating methods, and limitations of portable fire extinguishers.

(B) Requisite Skills. The ability to select, carry, and operate portable fire extinguishers, using the appropriate extinguisher based on the size and type of fire.

4.2.2* Conserve property, given special tools and equipment and an assignment within the facility, so that the facility and its contents are protected from further damage.

(A) Requisite Knowledge. The purpose of property conservation and its value to the organization, methods used to protect property, methods to reduce damage to property, types of and uses for salvage covers, and operations at properties protected with automatic sprinklers or special protection systems.

(B) Requisite Skills. The ability to deploy covering materials, control extinguishing agents, and cover building openings, including doors, windows, floor openings, and roof openings.

4.2.3 Exit hazardous area, given that the fire has progressed beyond the incipient stage, so that a safe haven is found and the team members' safety is maintained.

(A) Requisite Knowledge. Communication procedures, emergency evacuation methods, what constitutes a safe haven, and elements that create or indicate a hazard.

(B) Requisite Skills. The ability to follow facility evacuation routes, evaluate areas for hazards, and identify a safe haven.

4.3* Site-Specific Requirements. The management of the facility fire brigade shall determine the site-specific requirements that are applicable to the incipient facility fire brigade members operating on their site. The process used to determine the site-specific requirements shall be documented, and these additional JPRs added to those identified in Sections 4.1 and 4.2.

4.3.1* Attack an incipient stage fire, given a handline flowing up to 473 L/min (125 gpm), appropriate equipment, and a fire situation, so that the fire is approached safely, exposures are protected, the spread of fire is stopped, agent application is effective, the fire is extinguished, and the area of origin and fire cause evidence are preserved.

(A) Requisite Knowledge. Types of handlines used for attacking incipient fires, precautions to be followed when advancing handlines to a fire, observable results that a fire stream has been properly applied, dangerous building conditions created by fire, principles of exposure protection, and dangers such as exposure to products of combustion resulting from fire condition.

(B) Requisite Skills. The ability to recognize inherent hazards related to the material's configuration; operate handlines; prevent water hammers when shutting down nozzles; open, close, and adjust nozzle flow; advance charged and uncharged hose; extend handlines; operate handlines; evaluate and modify water application for maximum penetration; assess patterns for origin determination; and evaluate for complete extinguishment.

4.3.2* Activate a fixed fire protection system, given a fixed fire protection system, a procedure, and an assignment, so that the steps are followed and the system operates.

(A) Requisite Knowledge. Types of extinguishing agents, hazards associated with system operation, how the system operates, sequence of operation, system overrides and manual intervention procedures, and shutdown procedures to prevent damage to the operated system or to those systems associated with the operated system.

(B) Requisite Skills. The ability to operate fixed fire protection systems via electrical or mechanical means.

4.3.3* Utilize master stream appliances, given an assignment, an extinguishing agent, and a master stream device, so that the agent is applied to the fire as assigned.

(A) Requisite Knowledge. Safe operation of master stream appliances, uses for master stream appliances, tactics using fixed master stream appliances, and property conservation.

(B) Requisite Skills. The ability to put into service a fixed master stream appliance, and to evaluate and forecast a fire's growth and development.

4.3.4* Establish a water supply for fire-fighting operations, given an assignment, a water source, and tools, so that a water supply is established and maintained.

(A) Requisite Knowledge. Water sources, operation of site water supply components, hydraulic principles, and the effect of mechanical damage and temperatures on the operability of the water supply source.

(B) Requisite Skills. The ability to operate the site water supply components and to identify damage or impairment.

4.3.5 Perform a fire safety survey in a facility, given an assignment, survey forms, and procedures, so that fire and life safety hazards are identified, recommendations for their correction are made, and unresolved issues are referred to the proper authority.

(A) Requisite Knowledge. Organizational policy and procedures, common causes of fire and their prevention, the importance of fire safety, and referral procedures.

(B) Requisite Skills. The ability to complete forms, recognize hazards, match findings to preapproved recommendations, and effectively communicate findings to the proper authority.

Chapter 5 Advanced Exterior Facility Fire Brigade Member

5.1* General.

5.1.1 Qualification or Certification. For qualification or certification at the advanced exterior facility fire brigade member level, the facility fire brigade member shall meet the entrance requirements in Chapter 1 and Sections 4.1, 4.2, 5.1, and 5.2, the site-specific requirements in Sections 4.3 and 5.3 as defined by the management of the facility fire brigade, and the requirements defined in Chapter 5 of NFPA 1072.

5.1.2 Basic Advanced Exterior Facility Fire Brigade Member JPRs.

5.1.2.1* Utilize a pre-incident plan, given pre-incident plans and an assignment, so that the facility fire brigade member implements the responses detailed by the plan.

(A) Requisite Knowledge. The sources of water supply for fire protection or other fire-extinguishing agents, site-specific hazards, the fundamentals of fire suppression and detection systems including specialized agents, and common symbols used in diagramming construction features, utilities, hazards, and fire protection systems.

(B) Requisite Skills. The ability to identify the components of the pre-incident plan such as fire suppression and detection systems, structural features, site-specific hazards, and response considerations.

5.1.2.2* Interface with outside mutual aid organizations, given SOPs for mutual aid response and communication protocols, so that a unified command is established and maintained.

(A) Requisite Knowledge. Mutual aid procedures and the structure of the mutual aid organization, site SOPs, and incident management systems.

(B) Requisite Skills. The ability to communicate with mutual aid organizations and to integrate operational personnel into teams under a unified command.

5.2 Manual Fire Suppression.

5.2.1 Use thermal protective clothing during exterior fire-fighting operations, given thermal protective clothing, so that the clothing is correctly donned within 2 minutes (120 seconds), worn, and doffed.

(A) Requisite Knowledge. Conditions that require personal protection, uses and limitations of thermal protective clothing, components of thermal protective clothing ensemble, and donning and doffing procedures.

(B) Requisite Skills. The ability to correctly don and doff thermal protective clothing and to perform assignments while wearing thermal protective clothing.

Δ 5.2.2* Use self-contained breathing apparatus (SCBA) during emergency operations, given SCBA and other personal protective equipment (PPE), so that the SCBA is correctly donned, the SCBA is correctly worn, controlled breathing techniques are used, emergency procedures are enacted if the SCBA fails, all low-air warnings are recognized, respiratory protection is not intentionally compromised, and hazardous areas are exited prior to air depletion.

Δ (A) Requisite Knowledge. Conditions that require respiratory protection, uses and limitations of SCBA, components of SCBA, donning procedures, breathing techniques, indications for and emergency procedures used with SCBA, and physical requirements of the SCBA wearer.

Δ (B) Requisite Skills. The ability to control breathing, replace SCBA air cylinders, use SCBA to exit through restricted passages, initiate and complete emergency procedures in the event of SCBA failure or air depletion, and complete donning procedures.

5.2.3* Attack an exterior fire operating as a member of a team, given a water source, a handline, PPE, tools, and an assignment, so that team integrity is maintained, the attack line is correctly deployed for advancement, access is gained into the fire area, appropriate application practices are used, the fire is approached in a safe manner, attack techniques facilitate suppression given the level of the fire, hidden fires are located and controlled, the correct body posture is maintained, hazards are avoided or managed, and the fire is brought under control.

(A) Requisite Knowledge. Principles of fire streams; types, design, operation, nozzle pressure effects, and flow capabilities of nozzles; precautions to be followed when advancing handlines to a fire; observable results that a fire stream has been correctly applied; dangerous conditions created by fire; principles of exposure protection; potential long-term consequences of exposure to products of combustion; physical states of matter in which fuels are found; the application of each size and type of attack line; the role of the backup team in fire attack situations; attack and control techniques; and exposing hidden fires.

(B) Requisite Skills. The ability to prevent water hammers when shutting down nozzles; open, close, and adjust nozzle flow and patterns; apply water using direct, indirect, and combination attacks; advance charged and uncharged 38 mm (1½ in.) diameter or larger handlines; extend handlines; replace burst hose sections; operate charged handlines of 38 mm (1½ in.) diameter or larger; couple and uncouple

various handline connections; carry hose; attack fires; and locate and suppress hidden fires.

5.2.4 Conduct search and rescue operations as a member of a team, given an assignment, obscured vision conditions, PPE, scene lighting, forcible entry tools, handlines, and ladders when necessary, so that all equipment is correctly used, all assigned areas are searched, all victims are located and removed, team integrity is maintained, and team members' safety, including respiratory protection, is not compromised.

(A) Requisite Knowledge. Use of appropriate tools and equipment, psychological effects of operating in obscured conditions and ways to manage them, methods to determine if an area is tenable, primary and secondary search techniques, team members' roles and goals, methods to use and indicators of finding victims, victim removal methods, and considerations related to respiratory protection.

(B) Requisite Skills. The ability to use SCBA to exit through restricted passages, use tools and equipment for various types of rescue operations, rescue a facility fire brigade member with functioning respiratory protection, rescue a facility fire brigade member whose respiratory protection is not functioning, rescue a person who has no respiratory protection, and assess areas to determine tenability.

5.2.5* Conserve property operating as a member of a team, given special tools and equipment and an assignment within the facility, so that exposed property and the environment are protected from further damage.

(A) Requisite Knowledge. The purpose of property conservation and its value to the organization, methods used to protect property, methods to reduce damage to property, operations at properties protected with automatic sprinklers or special protection systems, understanding the impact of using master streams and multiple hose streams on property conservation, particularly as it can relate to the impact on outside facilities.

(B) Requisite Skills. The ability to deploy covering materials, control extinguishing agents, and cover openings and equipment such as doors, windows, floor openings, and roof openings related to the impact of outside facilities.

5.2.6 Overhaul a fire scene, given PPE, a handline, hand tools, scene lighting, and an assignment, so that structural integrity is not compromised, all hidden fires are discovered, fire cause evidence is preserved, and the fire is extinguished.

(A) Requisite Knowledge. Types of fire handlines and water application devices most effective for overhaul, water application methods for extinguishment that limit water damage, types of tools and methods used to expose hidden fire, dangers associated with overhaul, obvious signs of area of origin or signs of arson, and reasons for protection of a fire scene.

(B) Requisite Skills. The ability to deploy and operate a handline, expose void spaces without compromising structural integrity, apply water for maximum effectiveness, expose and extinguish hidden fires, recognize and preserve obvious signs of area of origin and fire cause, and evaluate for complete extinguishment.

5.2.7* Establish a water supply for fire-fighting operations, given a water source and tools, so that a water supply is established and maintained.

(A) Requisite Knowledge. Water sources, correct operation of site water supply components, hydraulic principles, and the effect of mechanical damage and temperatures on the operability of the water supply source.

(B) Requisite Skills. The ability to operate the site water supply components and identify damage or impairment.

5.2.8* Exit a hazardous area as a team, given vision-obscured conditions, so that a safe haven is found before exhausting the air supply, others are not endangered, and the team integrity is maintained.

(A) Requisite Knowledge. Personnel accountability systems, communication procedures, emergency evacuation methods, what constitutes a safe haven, elements that create or indicate a hazard, and emergency procedures for loss of air supply.

(B) Requisite Skills. The ability to operate as a team member in vision-obscured conditions, locate and follow a guideline, conserve air supply, evaluate areas for hazards, and identify a safe haven.

5.2.9* Operate as a member of a rapid intervention crew, given size-up information, basic rapid intervention tools and equipment, and an assignment, so that strategies to effectively rescue the facility brigade member(s) are identified and implemented; hazard warning systems are established and understood by all participating personnel; incident-specific PPE is identified, provided, and utilized; physical hazards are identified; and confinement, containment, and avoidance measures are discussed.

(A) Requisite Knowledge. Identification and care of PPE; specific hazards associated with the facility; strategic planning for rescue incidents; communications and safety protocols; atmospheric monitoring equipment needs; identification, characteristics, expected behavior, type, causes, and associated effects of personnel becoming incapacitated or trapped; and recognition of, potential for, and signs of impending building collapse.

(B) Requisite Skills. The ability to use PPE, determine resource needs, select and operate basic and specialized tools and equipment, implement communications and safety protocols, and mitigate specific hazards associated with rescue of trapped or incapacitated personnel.

Δ 5.3* Site-Specific Requirements. The JPRs in 5.3.1 through 5.3.11 shall be considered as site-specific functions of the advanced exterior facility fire brigade member. The management of the facility fire brigade shall determine the site-specific requirements that are applicable to the advanced exterior facility fire brigade member operating on their site. The process used to determine the site-specific requirements shall be documented, and these additional JPRs added to those identified in Sections 5.1 and 5.2. Based on the assessment of the site-specific hazards of the facility and the duties that facility fire brigade members are expected to perform, the management of the facility fire brigade shall determine the specific requirements of Chapters 5 or 6 of NFPA 472 or the corresponding requirements in OSHA 29 CFR 1910.120(q) that apply.

5.3.1 Perform a fire safety survey in a facility, given an assignment, survey forms, and procedures, so that fire and life safety hazards are identified, recommendations for their correction are made, and unresolved issues are referred to the proper authority.

(A) Requisite Knowledge. Organizational policy and procedures, common causes of fire and their prevention, and the importance of fire safety and referral procedures.

(B) Requisite Skills. The ability to complete forms, recognize hazards, match findings to pre-approved recommendations, and effectively communicate findings to the proper authority.

5.3.2* Gain access to facility locations, given keys, forcible entry tools (e.g., bolt cutters, small hand tools, and ladders), and an assignment, so that areas are accessed and remain accessible during advanced exterior **facility** fire brigade operations.

(A) Requisite Knowledge. Site drawing reading, access procedures, forcible entry tools and procedures, and site-specific hazards, such as access to areas restricted by railcar movement, fences, and walls. Procedures associated with special hazard areas such as electrical substations, radiation hazard areas, and other areas specific to the site, if needed.

(B) Requisite Skills. The ability to read site drawings, identify areas of low overhead clearance, identify areas on roadways having load restrictions, identify access routes to water supplies, identify hazardous materials locations, identify electrical equipment locations (overhead and belowgrade equipment), ability to open gates by manual and/or automatic means, ability to forcibly gain access to areas, and the ability to identify site hazards.

5.3.3 Utilize master stream appliances, given an assignment, an extinguishing agent, and a master stream device and supply hose, so that the appliance is set up correctly and the agent is applied as assigned.

(A) Requisite Knowledge. Correct operation of master stream appliances, uses for master stream appliances, tactics using master stream appliances, selection of the master stream appliance for different fire situations, the effect of master stream appliances on search and rescue, ventilation procedures, and property conservation.

(B) Requisite Skills. The ability to correctly put in service a master stream appliance and evaluate and forecast a fire's growth and development.

5.3.4* Extinguish an ignitable (or simulated ignitable) liquid fire operating as a member of a team, given an assignment, a handline, **PPE**, a foam proportioning device, a nozzle, foam concentrates, and a water supply, so that the correct type of foam concentrate is selected for the given fuel and conditions, a correctly proportioned foam stream is applied to the surface of the fuel to create and maintain a foam blanket, the fire is extinguished, re-ignition is prevented, and team protection is maintained.

(A) Requisite Knowledge. Methods by which foam prevents or controls a hazard; principles by which foam is generated; causes for poor foam generation and corrective measures; difference between hydrocarbon and polar solvent fuels and the concentrates that work on each; the characteristics, uses, and limitations of fire-fighting foams; the advantages and disadvantages of using fog nozzles versus foam nozzles for foam application; foam stream application techniques; hazards associated with foam usage; and methods to reduce or avoid hazards.

(B) Requisite Skills. The ability to prepare a foam concentrate supply for use, assemble foam stream components, master

various foam application techniques, and approach and retreat from fires and spills as part of a coordinated team.

5.3.5* Control a flammable gas fire operating as a member of a team, given an assignment, a handline, **PPE**, and tools, so that crew integrity is maintained, contents are identified, the flammable gas source is controlled or isolated, hazardous conditions are recognized and acted upon, and team safety is maintained.

(A) Requisite Knowledge. Characteristics of flammable gases, components of flammable gas systems, effects of heat and pressure on closed containers, boiling liquid expanding vapor explosion (BLEVE) signs and effects, methods for identifying contents, water stream usage and demands for pressurized gas fires, what to do if the fire is prematurely extinguished, alternative actions related to various hazards, and when to retreat.

(B) Requisite Skills. The ability to execute effective advances and retreats, apply various techniques for water application, assess gas storage container integrity and changing conditions, operate control valves, and choose effective procedures when conditions change.

5.3.6* Extinguish an exterior fire using special extinguishing agents other than foam operating as a member of a team, given an assignment, a handline, **PPE**, and an extinguishing agent supply, so that fire is extinguished, re-ignition is prevented, and team protection is maintained.

(A) Requisite Knowledge. Methods by which special agents, such as dry chemical, dry powder, and carbon dioxide, prevent or control a hazard; principles by which special agents are generated; the characteristics, uses, and limitations of fire-fighting special agents; the advantages and disadvantages of using special agents; special agents application techniques; hazards associated with special agents usage; and methods to reduce or avoid hazards.

(B) Requisite Skills. The ability to operate a special agent supply for use, master various special agents application techniques, and approach and retreat from hazardous areas as part of a coordinated team.

5.3.7* Interpret alarm conditions, given an alarm signaling system, a procedure, and an assignment, so that the alarm condition is correctly interpreted and a response is initiated.

(A) Requisite Knowledge. The different alarm detection systems within the facility; difference between alarm, trouble, and supervisory alarms; hazards protected by the detection systems; hazards associated with each type of alarm condition; knowledge of the emergency response plan; and communication procedures.

(B) Requisite Skills. The ability to understand the different types of alarms, to implement the response, and to provide information through communications.

5.3.8* Activate a fixed fire suppression system, given **PPE**, a fixed fire protection system, a procedure, and an assignment, so that the correct steps are followed and the system operates.

(A) Requisite Knowledge. Different types of extinguishing agents, hazards associated with system operation, how the system operates, sequence of operation, system overrides and manual intervention procedures, and shutdown procedures to prevent damage to the operated system or to those systems associated with the operated system.

(B) Requisite Skills. The ability to operate fixed fire suppression systems via electrical or mechanical means and shutdown procedures for fixed fire suppression systems.

5.3.9* Extinguish a Class C (electrical) or simulated Class C fire as a member of a team, given an assignment, a Class C fire-extinguishing appliance/extinguisher, and PPE, so that the proper type of Class C agent is selected for the condition, the selected agent is correctly applied to the fuel, the fire is extinguished, re-ignition is prevented, team protection is maintained, and the hazard is faced until retreat to safe haven is reached.

(A) Requisite Knowledge. Methods by which a Class C agent prevents or controls a hazard; methods by which Class C fires are de-energized; causes of injuries from Class C fire fighting on live Class C fires with Class A agents and the Class C agents; the extinguishing agents' characteristics, uses, and limitations; the advantages and disadvantages of de-energizing as using water fog nozzles on a Class A or Class B fire; and methods to reduce or avoid hazards.

(B) Requisite Skills. The ability to operate Class C fire extinguishers or fixed systems and approach and retreat from Class C fires as part of a coordinated team.

5.3.10* Utilize tools and equipment assigned to the facility fire brigade, given an assignment and specific tools, so that tools are selected and correctly used under adverse conditions in accordance with manufacturer's recommendations and the policies and procedures of the facility fire brigade.

(A) Requisite Knowledge. Available tools and equipment, their storage locations, and their correct use in accordance with recognized practices, and selection of tools and equipment given different conditions.

(B) Requisite Skills. The ability to select and use the correct tools and equipment for various tasks, follow guidelines, and restore tools and equipment to service after use.

5.3.11 Set up and use portable ladders, given an assignment, single and extension ladders, and team members as appropriate, so that hazards are assessed, the ladder is stable, the angle is correct for climbing, extension ladders are extended to the correct height with the fly locked, the top is placed against a reliable structural component, and the assignment is accomplished.

(A) Requisite Knowledge. Parts of a ladder, hazards associated with setting up ladders, what constitutes a stable foundation for ladder placement, different angles for various tasks, safety limits to the degree of angulation, and what constitutes a reliable structural component for top placement.

(B) Requisite Skills. The ability to carry ladders, raise ladders, extend ladders and lock flies, determine that a wall and roof will support the ladder, judge extension ladder height requirements, and place the ladder to avoid obvious hazards.

N 5.3.12* Respond on apparatus to an emergency scene, given personal protective clothing and other necessary PPE, so that the apparatus is correctly mounted and dismounted, seat belts are used while the vehicle is in motion, and other personal protective equipment is correctly used. [1001:4.3.2]

N (A) Requisite Knowledge. Mounting and dismounting procedures for riding fire apparatus, hazards and ways to avoid hazards associated with riding apparatus, prohibited practices,

and types of department PPE and the means for usage. [1001:4.3.2(A)]

N (B) Requisite Skills. The ability to use each piece of provided safety equipment. [1001:4.3.2(B)]

N 5.3.13 Attack a vehicle fire operating as a member of a team, given PPE, an attack line, and hand tools, so that hazards are avoided, leaking flammable liquids are identified and controlled, protection from flash fires is maintained, all vehicle compartments are overhauled, and the fire is extinguished.

N (A) Requisite Knowledge. Principles of fire streams as they relate to fighting fires; precautions to be followed when advancing hose lines; observable results that a fire stream has been properly applied; identifying alternative fuels and the hazards associated with them; dangerous conditions created during a fire; common types of accidents or injuries related to fighting fires and how to avoid them; how to access locked passenger, trunk, and engine compartments; and methods for overhauling.

N (B) Requisite Skills. The ability to identify fuel type; assess and control fuel leaks; open, close, and adjust the flow and pattern on nozzles; apply water for maximum effectiveness while maintaining flash fire protection; advance 38 mm (1½ in.) or larger diameter attack lines; and expose hidden fires by opening all compartments.

Chapter 6 Interior Structural Facility Fire Brigade Member

6.1 General.

6.1.1 Qualification or Certification. For qualification or certification at the interior structural facility fire brigade member level, the member shall meet the entrance requirements in Chapter 1 and Sections 4.1, 4.2, 6.1, and 6.2, the site-specific requirements in Sections 4.3 and 6.3 as defined by the management of the facility fire brigade, and requirements defined by Chapter 5 of NFPA 1072.

6.1.2 Basic Interior Structural Fire Brigade Member JPRs.

6.1.2.1* Use thermal protective clothing during structural fire-fighting operations, given thermal protective clothing, so that the clothing is correctly donned within 2 minutes (120 seconds), worn, and doffed.

(A) Requisite Knowledge. Conditions that require personal protection, uses and limitations of thermal protective clothing, components of thermal protective clothing ensemble, and donning and doffing procedures.

(B) Requisite Skills. The ability to correctly don and doff thermal protective clothing and perform assignments while wearing thermal protective clothing.

Δ 6.1.2.2* Use self-contained breathing apparatus (SCBA) during emergency operations, given SCBA and other personal protective equipment (PPE), so that the SCBA is correctly donned, the SCBA is correctly worn, controlled breathing techniques are used, emergency procedures are enacted if the SCBA fails, all low-air warnings are recognized, respiratory protection is not intentionally compromised, and hazardous areas are exited prior to air depletion.

Δ (A) Requisite Knowledge. Conditions that require respiratory protection, uses and limitations of SCBA, components of

SCBA, donning procedures, breathing techniques, indications for and emergency procedures used with SCBA, and physical requirements of the SCBA wearer.

Δ (B) Requisite Skills. The ability to control breathing, replace SCBA air cylinders, use SCBA to exit through restricted passages, initiate and complete emergency procedures in the event of SCBA failure or air depletion, and complete donning and doffing procedures.

6.1.2.3 Utilize a pre-incident plan, given pre-incident plans and an assignment, so that the **facility** fire brigade member implements the pre-incident plan.

(A) Requisite Knowledge. The sources of water supply for fire protection or other fire-extinguishing agents, site-specific hazards, the fundamentals of fire suppression and detection systems including specialized agents, and common symbols used in diagramming construction features, utilities, hazards, and fire protection systems.

(B) Requisite Skills. The ability to identify the components of the pre-incident plan such as fire suppression and detection systems, structural features, site-specific hazards, and response considerations.

N 6.1.2.4 Given a structural fire-fighting ensemble including respiratory protection and decontamination equipment on the fireground or at the fire station, the interior structural fire brigade member shall describe and perform field reduction of contaminants of PPE so that the PPE is handled in the proper manner and maintained in a safe working condition.

N (A) Requisite Knowledge. Working knowledge of field reduction of contaminants, policies and procedures for the reduction of carcinogenic or radiological particulates, etiological and chemical hazards of contaminated PPE on the fireground or at the fire station, manufacturer's specifications, and industry best practices for transporting, cleaning, inspecting, and identifying needed repairs.

N (B) Requisite Skills. The ability to perform PPE field reduction of contaminants at the fireground or at the fire station.

6.2 Manual Fire Suppression.

6.2.1* Attack an interior structural fire operating as a member of a team, given a water source, a handline, **PPE**, tools, and an assignment, so that team integrity is maintained, the handline is deployed for advancement, access is gained into the fire area, correct application practices are used, the fire is approached safely, attack techniques facilitate suppression given the level of the fire, hidden fires are located and controlled, the correct body posture is maintained, hazards are avoided or managed, and the fire is brought under control.

(A) Requisite Knowledge. Principles of conducting initial fire size-up; principles of fire streams; types, design, operation, nozzle pressure effects, and flow capabilities of nozzles; precautions to be followed when advancing hose lines to a fire; observable results that a fire stream has been correctly applied; dangerous building conditions created by fire; principles of exposure protection; potential long-term consequences of exposure to products of combustion; physical states of matter in which fuels are found; common types of accidents or injuries and their causes; and the application of each size and type of handlines, the role of the backup team in fire attack situations, attack and control techniques, and exposing hidden fires.

(B) Requisite Skills. The ability to prevent water hammers when shutting down nozzles; open, close, and adjust nozzle flow and patterns; apply water using direct, indirect, and combination attacks; advance charged and uncharged 38 mm (1½ in.) diameter or larger handlines; extend handlines; replace burst hose sections; operate charged handlines of 38 mm (1½ in.) diameter or larger; couple and uncouple various handline connections; carry hose; attack fires; and locate and suppress hidden fires.

6.2.2 Force entry into a structure, given **PPE**, tools, and an assignment, so that the tools are used, the barrier is removed, and the opening is in a safe condition and ready for entry.

(A) Requisite Knowledge. Basic construction of typical doors, windows, and walls within the facility; operation of doors, windows, and their associated locking mechanisms; and the dangers associated with forcing entry through doors, windows, and walls.

(B) Requisite Skills. The ability to transport and operate site-specific tools to force entry through doors, windows, and walls using assorted methods and tools.

6.2.3* Perform ventilation on a structure operating as a member of a team, given an assignment, **PPE**, and tools, so that a sufficient opening is created, all ventilation barriers are removed, structural integrity is not compromised, and products of combustion are released from the structure.

(A) Requisite Knowledge. The principles, advantages, limitations, and effects of horizontal and vertical ventilation; safety considerations when venting a structure; the methods of heat transfer; the principles of thermal layering within a structure on fire; fire behavior in a structure; the products of combustion found in a structure fire; the signs, causes, effects, and prevention of backdrafts; and the relationship of oxygen concentration to life safety and fire growth.

(B) Requisite Skills. The ability to transport and operate tools and equipment to create an opening and implement ventilation techniques.

6.2.4* Overhaul a fire scene, given **PPE**, attack line, hand tools, a flashlight, and an assignment, so that structural integrity is not compromised, all hidden fires are discovered, fire cause evidence is preserved, and the fire is extinguished.

(A) Requisite Knowledge. Types of fire handlines and application devices most effective for overhaul, application methods for extinguishing agents that limit damage, types of tools and methods used to expose hidden fire, dangers associated with overhaul, obvious signs of area of origin and signs of arson, and reasons for protection of fire scene.

(B) Requisite Skills. The ability to deploy and operate handlines, expose void spaces without compromising structural integrity, apply extinguishing agents for maximum effectiveness, expose and extinguish hidden fires, recognize and preserve obvious signs of area of origin and fire cause, and evaluate for complete extinguishment.

6.2.5* Exit a hazardous area as a team, given vision-obscured conditions, so that a safe haven is found before exhausting the air supply, others are not endangered, and the team integrity is maintained.

(A) Requisite Knowledge. Personnel accountability systems, communication procedures, emergency evacuation methods,

what constitutes a safe haven, elements that create or indicate a hazard, and emergency procedures for loss of air supply.

(B) Requisite Skills. The ability to operate as a team member in vision-obscured conditions, locate and follow a guideline, conserve air supply, and evaluate areas for hazards and identify a safe haven.

6.2.6* Establish a water supply for fire-fighting operations, given a water source and tools, so that a water supply is established and maintained.

(A) Requisite Knowledge. Water sources, correct operation of site water supply components, hydraulic principles, and the effect of mechanical damage and temperatures on the operability of the water supply source.

(B) Requisite Skills. The ability to operate the site water supply components and take action to address damage or impairment.

6.2.7 Interface with outside mutual aid organizations, given SOPs for mutual aid response and communication protocols, so that a unified command is established and maintained.

(A) Requisite Knowledge. Mutual aid procedures and the structure of the mutual aid organization, site SOPs, and incident management systems.

(B) Requisite Skills. The ability to communicate with mutual aid organizations and to integrate operational personnel into teams under a unified command.

6.2.8 Conduct search and rescue operations as a member of a team, given an assignment, obscured vision conditions, PPE, a flashlight, forcible entry tools, handlines, and ladders when necessary, so that all equipment is correctly used, all assigned areas are searched, all victims are located and removed, team integrity is maintained, and team members' safety, including respiratory protection, is not compromised.

(A) Requisite Knowledge. Use of appropriate tools and equipment, psychological effects of operating in obscured conditions and ways to manage them, methods to determine if an area is tenable, primary and secondary search techniques, team members' roles and goals, methods to use and indicators of finding victims, victim removal methods, and considerations related to respiratory protection.

(B) Requisite Skills. The ability to use SCBA to exit through restricted passages, use tools and equipment for various types of rescue operations, rescue a facility fire brigade member whose respiratory protection is not functioning, rescue a person who has no respiratory protection, and assess areas to determine tenability.

6.2.9* Conserve property operating as a member of a team, given special tools and equipment and an assignment within the facility, so that exposed property and the environment are protected from further damage.

(A) Requisite Knowledge. The purpose of property conservation and its value to the organization, methods used to protect property, methods to reduce damage to property, types of and uses for salvage covers, operations at properties protected with automatic sprinklers or special protection systems, and understanding the impact of using master streams and multiple hose streams on property conservation, particularly as it can relate to the impact on outside facilities.

(B) Requisite Skills. The ability to deploy covering materials, control extinguishing agents, and cover building openings, including doors, windows, floor openings, and roof openings.

6.2.10* Operate as a member of a rapid intervention crew, given size-up information, basic rapid intervention tools and equipment, and an assignment, so that strategies to effectively rescue the brigade member(s) are identified and implemented; hazard warning systems are established and understood by all participating personnel; incident-specific PPE is identified, provided, and utilized; physical hazards are identified; and confinement, containment, and avoidance measures are discussed.

(A) Requisite Knowledge. Identification and care of PPE; specific hazards associated with the facility; strategic planning for rescue incidents; communications and safety protocols; atmospheric monitoring equipment needs; identification, characteristics, expected behavior, type, causes, and associated effects of personnel becoming incapacitated or trapped; and recognition of, potential for, and signs of impending building collapse.

(B) Requisite Skills. The ability to use PPE, determine resource needs, select and operate basic and specialized tools and equipment, implement communications and safety protocols, and mitigate specific hazards associated with rescue of trapped or incapacitated personnel.

Δ 6.3* Site-Specific Requirements. The management of the facility fire brigade shall determine the site-specific requirements that are applicable to the interior structural facility fire brigade member operating on their site. The process used to determine the site-specific requirements shall be documented, and these additional JPRs added to those identified in Sections 6.1 and 6.2. Based on the assessment of the site-specific hazards of the facility and the duties that facility fire brigade members are expected to perform, the management of the facility fire brigade shall determine the specific requirements of Chapters 5 and 6 of NFPA 472 or the corresponding requirements in OSHA 29 CFR 1910.120(q) that apply.

6.3.1* Interpret alarm conditions, given an alarm signaling system, a procedure, and an assignment, so that the alarm condition is correctly interpreted and a response is initiated.

(A) Requisite Knowledge. The different alarm detection systems within the facility; difference between alarm, trouble, and supervisory alarms; hazards protected by the detection systems; hazards associated with each type of alarm condition; the emergency response plan; and communication procedures.

(B) Requisite Skills. The ability to understand the different types of alarms, to implement the response, and to provide information through communications.

6.3.2* Activate a fixed fire protection system, given required PPE, a fixed fire protection system, a procedure, and an assignment, so that the procedures are followed and the system operates.

(A) Requisite Knowledge. Different types of extinguishing agents on site, manual fire suppression activities within areas covered by fixed fire suppression systems, hazards associated with system operation, how the system operates, sequence of operation, system overrides and manual intervention procedures, and shutdown procedures to prevent damage to the

operated system or to those systems associated with the operated system.

(B) Requisite Skills. The ability to operate fixed fire suppression systems via electrical or mechanical means and to shut down fixed fire suppression systems.

6.3.3 Utilize master stream appliances, given an assignment, an extinguishing agent, a master stream device, and a supply hose, so that the appliance is set up correctly and the agent is applied as assigned.

(A) Requisite Knowledge. Correct operation of master stream appliances, uses for master stream appliances, tactics using master stream appliances, selection of the master stream appliances for different fire situations, and the effect of master stream appliances on search and rescue, ventilation procedures, and property conservation.

(B) Requisite Skills. The ability to correctly put in service a master stream appliance and to evaluate and forecast a fire's growth and development.

6.3.4* Extinguish an ignitable liquid fire operating as a member of a team, given an assignment, a handline, **PPE**, a foam proportioning device, a nozzle, foam concentrates, and a water supply, so that the correct type of foam concentrate is selected for the given fuel and conditions, a correctly proportioned foam stream is applied to the surface of the fuel to create and maintain a foam blanket, fire is extinguished, re-ignition is prevented, and team protection is maintained.

(A) Requisite Knowledge. Methods by which foam prevents or controls a hazard; principles by which foam is generated; causes for poor foam generation and corrective measures; difference between hydrocarbon and polar solvent fuels and the concentrates that work on each; the characteristics, uses, and limitations of fire-fighting foams; the advantages and disadvantages of using fog nozzles versus foam nozzles for foam application; foam stream application techniques; hazards associated with foam usage; and methods to reduce or avoid hazards.

(B) Requisite Skills. The ability to prepare a foam concentrate supply for use, assemble foam stream components, master various foam application techniques, and approach and retreat from fires and spills as part of a coordinated team.

6.3.5* Control a flammable gas fire operating as a member of a team, given an assignment, a handline, **PPE**, and tools, so that team integrity is maintained, contents are identified, the flammable gas source is controlled or isolated, hazardous conditions are recognized and acted upon, and team safety is maintained.

(A) Requisite Knowledge. Characteristics of flammable gases, components of flammable gas systems, effects of heat and pressure on closed containers, BLEVE signs and effects, methods for identifying contents, water stream usage and demands for pressurized gas fires, what to do if the fire is prematurely extinguished, alternative actions related to various hazards, and when to retreat.

(B) Requisite Skills. The ability to execute effective advances and retreats, apply various techniques for water application, assess gas storage container integrity and changing conditions, operate control valves, and choose effective procedures when conditions change.

6.3.6* Extinguish a fire using special extinguishing agents other than foam operating as a member of a team, given an assignment, a handline, **PPE**, and an extinguishing agent supply, so that fire is extinguished, re-ignition is prevented, and team protection is maintained.

(A) Requisite Knowledge. Methods by which special agents, such as dry chemical, dry powder, and carbon dioxide, prevent or control a hazard; principles by which special agents are generated; the characteristics, uses, and limitations of fire-fighting special agents; the advantages and disadvantages of using special agents; special agent application techniques; hazards associated with special agent usage; and methods to reduce or avoid hazards.

(B) Requisite Skills. The ability to operate a special agent supply for use, master various special agents application techniques, and approach and retreat from hazardous areas as part of a coordinated team.

6.3.7* Utilize tools and equipment assigned to the facility fire brigade, given an assignment and specific tools, so that tools are selected and correctly used under adverse conditions in accordance with manufacturer's recommendations and the policies and procedures of the facility fire brigade.

(A) Requisite Knowledge. Available tools and equipment, their storage locations, and their correct use in accordance with recognized practices; and selection of tools and equipment given different conditions.

(B) Requisite Skills. The ability to select and use the correct tools and equipment for various tasks, follow guidelines, and restore tools and equipment to service after use.

6.3.8 Set up and use portable ladders, given an assignment, single and extension ladders, and team members as appropriate, so that hazards are assessed, the ladder is stable, the angle is correct for climbing, extension ladders are extended to the correct height with the fly locked, the top is placed against a reliable structural component, and the assignment is accomplished.

(A) Requisite Knowledge. Parts of a ladder, hazards associated with setting up ladders, what constitutes a stable foundation for ladder placement, different angles for various tasks, safety limits to the degree of angulation, and what constitutes a reliable structural component for top placement.

(B) Requisite Skills. The ability to carry ladders, raise ladders, extend ladders and lock flies, determine that a wall and roof will support the ladder, judge extension ladder height requirements, and place the ladder to avoid obvious hazards.

6.3.9* Interface with outside mutual aid organizations, given SOPs for mutual aid response and communication protocols, so that a unified command is established and maintained.

(A) Requisite Knowledge. Mutual aid procedures and the structure of the mutual aid organization, site SOPs, and incident management systems.

(B) Requisite Skills. The ability to communicate with mutual aid organizations and to integrate operational personnel into teams under a unified command.

6.3.10 Perform a fire safety survey in a facility, given an assignment, survey forms, and procedures, so that fire and life safety hazards are identified, recommendations for their correction

are made, and unresolved issues are referred to the proper authority.

(A) Requisite Knowledge. Organizational policy and procedures, common causes of fire and their prevention, and the importance of fire safety and referral procedures.

(B) Requisite Skills. The ability to complete forms, recognize hazards, match findings to pre-approved recommendations, and effectively communicate findings to the proper authority.

6.3.11* Extinguish a Class C (electrical) fire as a member of a team, given an assignment, a Class C fire-extinguishing appliance/extinguisher, and **PPE**, so that the type of Class C agent is selected for the condition, a selected agent is correctly applied to the fuel, fire is extinguished, re-ignition is prevented, team protection is maintained, and the hazard is faced until retreat to safe haven is reached.

(A) Requisite Knowledge. Methods by which a Class C agent prevents or controls a hazard; methods by which Class C fires are de-energized; causes of injuries from Class C fire fighting on live Class C fires with Class A agents and the Class C agents; the extinguishing agents' characteristics, uses, and limitations; the advantages and disadvantages of de-energizing using water fog nozzles on a Class A or Class B fire; and methods to reduce or avoid hazards.

(B) Requisite Skills. The ability to operate Class C fire extinguishers or fixed systems and approach and retreat from Class C fires as part of a coordinated team.

Chapter 7 Facility Fire Brigade Leader

7.1 General.

Δ 7.1.1 This duty shall involve establishing command, using emergency response procedures, and overseeing the emergency response and other administrative duties as outlined in Chapter 4 of NFPA 600 depending on the site organizational statement.

7.1.2 Qualification or Certification. For qualification or certification as a facility fire brigade leader, the member shall meet the JPRs of the level of the facility fire brigade in which they are leading in accordance with the requirements of Chapters 1, 5, or 6 and the JPRs as defined in Sections 7.1 and 7.2.

7.1.3 General Requisite Knowledge. The organizational structure of the facility fire brigade; operating procedures for administration, emergency operations, and safety; information management and record keeping; incident management system; methods used by leaders to obtain cooperation within a group of subordinates; and policies and procedures regarding the operation of the facility fire brigade.

Δ 7.1.4 General Prerequisite Skills. The ability to operate at all levels in the incident management system as defined by the National Incident Management System (NIMS) and NFPA 1561.

7.2 Supervisory Functions.

7.2.1 Assign tasks or responsibilities to members, given an assignment at an emergency situation, so that the instructions are complete, clear, and concise; safety considerations are addressed; and the desired outcomes are conveyed.

(A) Requisite Knowledge. Verbal communications during emergency situations, techniques used to make assignments under stressful situations, and methods of confirming understanding of assigned tasks.

(B) Requisite Skills. The ability to condense instructions for frequently assigned unit tasks based upon training and SOPs.

7.2.2 Develop an initial action plan, given size-up information for an incident and assigned emergency response resources, so that resources are deployed to control the emergency.

(A)* Requisite Knowledge. Elements of a size-up, SOPs for emergency operations, and fire behavior.

(B) Requisite Skills. The ability to analyze emergency scene conditions, to allocate resources, and to communicate verbally.

7.2.3* Implement an action plan at an emergency situation, given assigned resources, type of incident, preliminary plan, and facility fire brigade safety policies and procedures, so that resources are deployed to mitigate the situation and team safety is maintained.

(A) Requisite Knowledge. SOPs, resources available, basic fire control and emergency operation procedures, an incident management system, rapid intervention crew (RIC) procedures, personnel accountability system, common causes of personal injury during facility fire brigade activities, safety policies and procedures, and basic facility fire brigade member safety.

(B)* Requisite Skills. The ability to implement an incident management system, to communicate verbally, to supervise and account for assigned personnel under emergency conditions, and to identify safety hazards.

7.2.4* Coordinate multiple resources, such as in-house and mutual aid, during emergency situations, given an incident requiring multiple resources and a site incident management system, so that the site incident management system is implemented and the required resources, their assignments, and safety considerations for successful control of the incident are identified.

(A) Requisite Knowledge. SOPs and local resources available for the handling of the incident under emergency situations, basic fire control and emergency operation procedures, an incident management system, and a personnel accountability system.

(B) Requisite Skills. The ability to implement the site incident management system, to communicate verbally, and to supervise and account for assigned personnel under emergency conditions.

7.2.5 Implement support operations at an incident, given an assignment and available resources, so that scene lighting is adequate for the tasks to be undertaken, personnel rehabilitation is facilitated, and the support operations facilitate the incident objectives.

(A) Requisite Knowledge. Resource management protocols, principles for establishing lighting, and rescuer rehabilitation practices and procedures.

(B) Requisite Skills. The ability to manage resources, provide power, set up lights, use lighting, select rehab areas, and personnel rotations.

7.2.6 Direct members during a training evolution, given a training evolution and training policies and procedures, so that the evolution is performed in accordance with safety plans, and the stated objectives or learning outcomes are achieved as directed.

(A) Requisite Knowledge. Oral communication techniques to facilitate learning.

(B) Requisite Skills. The ability to distribute issue-guided directions to members during training evolutions.

N Chapter 8 Facility Fire Brigade Training Coordinator

N 8.1 General. This duty shall involve establishing a training and education program and maintaining training records for the facility fire brigade duties outlined in the organizational statement.

N 8.1.1 Qualification or Certification. For qualification or certification as a facility fire brigade training coordinator, the member shall meet the JPRs of the facility fire brigade.

N 8.1.2 General Requisite Knowledge. The organizational structure of the facility fire brigade; operating procedures for emergency operations and safety; information management and record keeping; incident management system; methods used by trainers to obtain cooperation within a group of trainees; and policies and procedures regarding the operation of the facility fire brigade.

N 8.1.3 General Prerequisite Skills. The ability to operate at safety officer level in the incident management system as defined by the National Incident Management System (NIMS) and NFPA 1561.

N 8.2 Training Functions.

N 8.2.1 Lead training classes or verify the qualifications of instructors; impart information so it is complete, clear, and concise; address safety considerations; and convey the desired outcomes.

N (A) Requisite Knowledge. Verbal communications and teaching methods.

N (B) Requisite Skills. The ability to condense instructions for frequently assigned unit tasks based upon SOPs.

N 8.2.2 Serve as the safety officer function during emergency operations.

N (A) Requisite Knowledge. Elements of a size-up, SOPs for emergency operations, and fire behavior.

N (B) Requisite Skills. The ability to analyze emergency scene conditions, to allocate resources, and to communicate verbally.

N 8.2.3 Verify the skills and knowledge of facility fire brigade members.

N (A) Requisite Knowledge. SOPs, basic fire control and emergency operation procedures, common causes of personal injury during facility fire brigade activities, safety policies and procedures, and basic facility fire brigade member safety.

N (B) Requisite Skills. The ability to communicate verbally, account for assigned personnel under emergency conditions, and identify safety hazards.

N 8.2.4 Maintain training and drill records for the facility fire brigade.

N (A) Requisite Knowledge. SOPs and local resources available to store records, organizational skills, and an accountability system.

N (B) Requisite Skills. The ability to implement procedures for timely and accurate filing of records.

Chapter 9 Support Member

9.1 General.

9.1.1 This duty shall involve supporting the operational activities of the fire brigade. In most cases, support member personnel are not expected to perform manual fire suppression activities in the event of an emergency but are expected to perform those specialized tasks, that they have been assigned, depending on the site organizational statement.

Δ 9.1.2 Qualification. For qualification as a support member, the member shall meet the JPRs of the level of the support member in accordance with the requirements of this chapter. Support members shall not be permitted to enter the warm zone or the hot zone.

9.1.3 Education, Training, and Drills.

Δ 9.1.3.1 All support members shall receive training and education at least annually.

Δ 9.1.3.2 All support members shall participate in a drill at least annually.

9.1.3.3 Training and drills that involve supporting live fire evolutions shall be performed in accordance with recognized health and safety precautions.

9.1.3.4* Support members shall understand how to perform their duties safely during fire suppression operations.

Δ 9.1.4 Protective Clothing and Protective Equipment. Since the support member will not be entering the warm or hot zones, neither thermal protective clothing nor SCBA shall be needed.

Δ 9.1.5 Medical. Each support member shall meet the medical and job-related performance requirements as specified in Section 5.5 of NFPA 600.

Δ 9.1.6 Basic Support Member. All support members shall have a general knowledge of site-specific hazards, operation within an incident management system, operation within the emergency response operations plan for the site, standard operating and safety procedures for the site, and special procedures and duties of the particular facility basic support team member's role.

9.1.7 Initiate a response to a reported emergency, given the report of an emergency, facility standard operating procedures, and communication equipment, so that all necessary information is obtained and communication equipment is operating properly.

(A) Requisite Knowledge. Procedures for reporting an emergency.

(B) Requisite Skills. The ability to operate facility communication equipment, relay information, and record information.

9.1.8 Respond to a facility emergency, given the necessary equipment and facility response procedures, so that the support member arrives at the assigned duty location.

(A) Requisite Knowledge. Facility layout, special hazards, and emergency response procedures.

(B) Requisite Skills. The ability to recognize response hazards and to operate within the duties for that support member position.

9.2 Site-Specific Requirements. The management of the facility fire brigade shall determine the site-specific requirements that are applicable to the support member operating on their site. The process used to determine the site-specific requirements shall be documented, and these additional JPRs added to those identified above. The duties shall be selected from the list of examples located in Annex B; the management of the facility fire brigade can develop additional duties for support members as needed.

9.2.1 Building Evacuation. Respond to a facility emergency, given equipment as determined by the AHJ, and facility evacuation procedures, so that the all building personnel are evacuated to their assigned assembly point.

(A) Requisite Knowledge. Facility evacuation plans and building layout, special hazards, and emergency response procedures.

(B) Requisite Skills. The ability to assist building occupants to evacuate in a safe manner and to safely operate within the duties for that support member position.

9.2.2 Sprinkler System Control. Respond to a facility emergency, given facility sprinkler system or other fixed fire protection equipment and facility fixed fire protection equipment operation procedures, so that the control of the automatic sprinkler protection system within the fire area or the facility is maintained in the event of fire.

(A) Requisite Knowledge. Facility fixed fire protection equipment operating procedures, special hazards, and emergency response procedures.

(B) Requisite Skills. The ability to operate the fixed fire protection system equipment and the understanding of the site emergency procedures to know when to operate the fixed fire protection systems to safely operating within the duties for that support member position.

9.2.3 Electrical Power Control. Respond to a facility emergency, given the site electrical system and facility electrical equipment operation procedures, so that the control of the electrical system within the fire area or the facility is maintained in the event of fire.

(A) Requisite Knowledge. Facility electrical equipment operating procedures, special hazards, and emergency response procedures.

(B) Requisite Skills. The ability to operate the electrical system equipment and the understanding of the site emergency procedures to know when to de-energize electrical systems to safely operating within the duties for that support member position.

9.2.4 Utility Control. Respond to a facility emergency, given the plant utilities (e.g., heating, ventilation, and air conditioning; steam, water, LP-Gas or natural gas, and other liquid or

vapor piping systems) and facility utilities operation procedures, so that the control of the utilities system within the fire area or the facility is maintained in the event of fire.

(A) Requisite Knowledge. Facility utilities (e.g., heating, ventilation, and air conditioning; steam, water, LP-Gas or natural gas, and other liquid or vapor piping systems) operating procedures, special hazards, and emergency response procedures.

(B) Requisite Skills. The ability to operate the plant utilities (e.g., heating, ventilation, and air conditioning; steam, water, LP-Gas or natural gas, and other liquid or vapor piping systems) equipment and the understanding of the site emergency procedures to know when to operate or de-energize systems to safely operating within the duties for that support member position.

9.2.5 Process Control. Respond to a facility emergency, given the process equipment (petrochemical processing, refinery processing, computer processing, etc.) and process operation procedures, so that the control of the process control system within the fire area or the facility is maintained in the event of fire.

(A) Requisite Knowledge. Facility process equipment (petrochemical processing, refinery processing, computer processing, etc.) operating procedures, special hazards, and emergency response procedures.

(B) Requisite Skills. The ability to operate the process equipment (petrochemical processing, refinery processing, computer processing, etc.) and the understanding of the site emergency procedures to know when to operate or de-energize systems to safely operating within the duties for that support member position.

9.2.6 Fire Pump/Fire Water System Operation. Respond to a facility emergency, given the fire pump/fire water system and fire pump/fire water system procedures, so that the control of fire pump/fire water system within the fire area or the facility is maintained in the event of fire.

(A) Requisite Knowledge. Facility fire pump/fire water operating procedures, special hazards, and emergency response procedures.

(B) Requisite Skills. The ability to operate the fire pump/fire water systems and the understanding of the site emergency procedures to know when to operate or de-energize systems to safely operating within the duties for that support member position.

9.2.7 Salvage. Respond to a facility emergency, given salvage equipment and salvage procedures, so that salvage operations in the cold zone within the fire area or the facility are completed in the event of fire.

(A) Requisite Knowledge. Facility salvage operating procedures in the cold zone, special hazards, and emergency response procedures.

(B) Requisite Skills. The ability to operate salvage equipment and understanding of the site emergency procedures to know when and how to perform salvage operations safely within the duties for that support member position.

9.2.8 Traffic Control and Site Security Duties. Respond to a facility emergency, given traffic control and security equipment

and security procedures, so that traffic control and security outside the fire zone and in the cold zone within the fire area or the facility are completed in the event of fire.

(A) Requisite Knowledge. Facility traffic control and security procedures in the cold zone, special hazards, and emergency response procedures.

(B) Requisite Skills. The ability to use traffic control and security devices and to understand the site emergency procedures and traffic control and security procedures to know when and how to perform traffic control and security operations safely within the duties for that support member position.

9.2.9 Escort. Respond to a facility emergency, given escort equipment and escort procedures, so that escorting of personnel outside the fire zone and in the cold zone within the fire area or the facility is completed in the event of fire.

(A) Requisite Knowledge. Escort procedures in the cold zone, special hazards, and emergency response procedures.

(B) Requisite Skills. The ability to use escort devices and to understand the site emergency procedures and escort procedures to know when and how to perform escort operations safely within the duties for that support member position.

9.2.10 General Support Services. Respond to a facility emergency, given general support services equipment and specific support services procedures as determined by the facility fire brigade management, so that general support services are completed in the event of fire.

(A) Requisite Knowledge. General support services procedures in the cold zone, special hazards, and emergency response procedures.

(B) Requisite Skills. The ability to use necessary specific support services devices as determined by the facility fire brigade management and to understand the site emergency procedures and specific support services procedures to know when and how to perform specific support services operations safely within the duties for that support member position.

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** Organizations might have to invest considerable resources to provide the equipment and training needed for facility fire brigades to respond in a safe and efficient manner. This requirement is not meant to imply that organizations with limited resources cannot provide response services, only that the individuals charged with responsibilities are qualified to specific levels according to this standard.

This standard is intended to comply with the facility fire brigade-related requirements of 29 CFR 1910.156, Subpart L and the facility fire brigade-related requirements of 29 CFR 1910.134 (two in/two out rule). Further, this standard is intended to ensure the facility fire brigade member has the appropriate degree of occupational safety and health while performing facility fire brigade duties, just as NFPA 1500 ensures an appropriate degree of occupational safety and health for municipal fire department members.

For support functions beyond the scope of this document, see Annex G.

- **A.1.2.3** Organization and management responsibilities should be addressed by the agency that personnel represent. The authority having jurisdiction should define the agency requirements for progression to positions of management responsibility.

- **A.1.2.6** This requirement emphasizes importance of formal and continuing education and training programs to ensure that personnel at the various response levels — incipient facility fire brigade member, advanced exterior facility fire brigade member, interior structural facility fire brigade member, facility fire brigade leader, facility fire brigade training coordinator, and support member — have maintained and updated the necessary skills and knowledge for the level of qualification. Continuing education and training programs can be developed or administered by local, state, provincial, federal, or private agencies as well as by professional associations and accredited institutions of higher education. The methods of learning would include areas of technology, refresher training, skills practices, and knowledge application to standards. The subject matter should directly relate to the requirements of this standard.

A.1.3.1 See Annex F for additional information regarding the use of JPRs for training and evaluation. For support functions beyond the scope of this document, see Annex G.

- **A.1.3.2** Management should define the industrial fire brigades' training requirements to maintain competency for assigned emergency duties that management expects their personnel are to perform. After initial training, recurring training should be required for the industrial fire brigade member to maintain a level of proficiency to perform their duties. 29 CFR 1910 Subpart A paragraphs 1910.120(q), 1910.134(k), 1910.156(c), NFPA 600, and NFPA 472 define some of the requirements for maintaining proficiency.

- **A.1.3.3** It is recommended, where practical, that evaluators be individuals who were not directly involved as instructors for the requirement being evaluated.

A.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 has no obligation to train or equip the facility fire brigade member to perform that function. [600:A.4.1.4]

- **A.1.4.2** 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. [600:A.4.1.2]

- **A.1.4.3.1** For information on incident management systems, see NFPA 1561. [600:A.4.4.1]

N A.1.4.3.4 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. [600:A.4.4.4]

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

N 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. [600:A.3.3.2]

N A.3.3.6 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. [600:A.3.3.9]

A.3.3.12.1 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. [600:A.3.3.14.1]

A.3.3.12.4 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. [600:A.3.3.14.4]

Δ A.3.3.14 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. [600:A.3.3.18]

Δ A.3.3.24 Support Members. When organizing the facility fire brigade, management should take into consideration the need for specialized duties required in the event of a fire or related emergency and should assign personnel to the facility fire brigade to ensure that these 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. [600:A.3.3.26]
- (8) Support personnel are expected to escort facility fire brigade members or other emergency responders to the area of a fire without entering into the warm or hot zones.

A.3.3.26 Thermal Protective Clothing. For the purpose of this standard, full protective clothing for facility fire brigade members above the incipient level is considered to include a turnout coat, protective trousers, fire-fighting boots, fire-fighting gloves, a protective hood, and a fire-fighting helmet. All equipment should be compliant with NFPA or applicable standards.

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Δ A.4.1.2.2 The facility fire brigade member should be familiar with the communication systems and understand how the facility fire brigade transmits and receives messages on the site. Management of the facility fire brigade has the responsibility to ensure that facility fire brigade members are trained to site operating procedures. Facility communications equipment can include, but not be limited to, public address systems, intercom systems, radios, pagers, sirens, beacons, and messengers. All facility fire brigade members should understand the site procedures to address the intent of 4.4.6 of NFPA 600.

Δ A.4.1.2.4 The incipient level facility fire brigade member should be able to determine equipment operability and to ensure that equipment is returned to service as per site policy or procedure. Facility fire brigade members could or could not be required by the management of the facility fire brigade to perform inspections, maintenance, cleaning, or otherwise to service emergency response equipment, but it is incumbent upon the employer to ensure that the equipment is maintained per manufacturer requirements and appropriate codes and standards (e.g., NFPA 10, NFPA 14, and NFPA 1962). The responsibilities for the maintaining, servicing, and cleaning of emergency response equipment should be identified in the facility fire brigade organizational statement.

A.4.1.2.5 The incident report could only entail contacting a supervisor and letting the supervisor know there was a fire, what agent was used, and any damage that occurred. The intent is to ensure that the management of the facility fire brigade trains employees to provide all pertinent information for reporting fire incidents at the site. The report assists the management of the facility fire brigade to accomplish the incident documentation.

Δ A.4.2.1 The incipient facility fire brigade member should be able to extinguish fires in stacked or piled materials such as hay bales, pallets, lumber, piles of mulch, sawdust, other bulk Class A materials, or small, unattached structures that are attacked from the exterior. The tactics for extinguishing each of these types of fires are similar enough to be included in one JPR. Live fire evolutions should be conducted in accordance with the requirements of NFPA 1403. In areas where environmental or other concerns restrict the use of normal fuels for training evolutions, properly installed and monitored gas-fueled fire simulators can be substituted.

With regard to Class D fires, some facilities utilize pyrophoric, water-reactive dry chemicals, and reactive metals such as magnesium, aluminum, and sodium in their facilities and catalysts. Facility fire brigade members need to know that ordinary extinguishing agents such as water, foam, and carbon dioxide can react with these materials. Members should be trained in recognizing these site-specific hazards and should be trained in the use of Class D and other extinguishing agents. Members need to know that automatic fire protection systems can need to be shut down; therefore, members should be trained in the proper procedures for shutting them down.

Class K fires are fires in cooking appliances that involve combustible cooking media such as vegetable or animal oils and fats. Some facilities have cooking facilities that can have fires involving Class K-type fires. Members should be trained in recognizing these site-specific hazards and should also be trained in the use of Class K fire protection systems and extinguishers.

A.4.2.2 Facility fire brigade members should be aware of the environmental concerns associated with fire extinguishment and runoff. Brigade members should be familiar with site-specific areas where these types of issues pose potential problems. Areas could include storm drains, sumps, bodies of water, terrain, and other areas where pollution could cause environmental concerns for the facility/site. Depending on the material(s) burning, the brigade members need to deal with concerns regarding flammable liquids or chemicals as well as the foam or other extinguishing agents, including water. The extinguishing agents need to be accounted for in the event of an environmental issue.

A.4.3 Each site can vary significantly in the amount and types of fire protection systems, tools, and equipment that are specific to that site. The management of the facility fire brigade should document in the site SOPs the types of fire protection systems, tools, and equipment that are available for facility fire brigade use. If the fire protection system, tool, or equipment is available for use by the facility fire brigade, the authority having jurisdiction should ensure that the appropriate section knowledge and skills are tested. (See Annex E.)

A.4.3.1 When possible, incipient facility fire brigade members should attack a fire as a team to enhance the safety of the fire-fighting operation. Each incipient facility fire brigade member should maintain correct body posture when attacking a fire with a handline. Caution should be taken when advancing a handline during a fire attack.

Incipient facility fire brigade members can handle various-sized handlines during offensive and defensive operations. The handline diameter should be determined by the management of the facility fire brigade and is site specific. Water pressure and flow rate depend on the water supply and the type of facility operation.

A.4.3.2 The incipient facility fire brigade member needs to have an understanding of fire protection systems provided. Members need to know how to manually activate systems, their impact on other plant systems and safety of personnel, and policies and procedures for notification of the facility fire brigade when systems are out of service.

A.4.3.3 Incipient facility fire brigades who are expected to utilize master stream appliances should be able to perform defensive actions, utilizing master stream appliances safely and effectively.

A.4.3.4 The facility fire brigade member should understand hydraulic principles and their effect on water flow. Operation of site water supplies could consist of opening valves or hydrants, starting pumps, drafting from static sources, and utilizing standpipes. The fire brigade member should also understand the specific requirements of the site water supply components and their operation (e.g., correct hydrant operation, including drainage and shutdown, and operation of pressure control devices).

A.5.1 Advanced exterior fire fighting is offensive fire fighting performed outside of an enclosed structure when the fire is beyond the incipient stage. 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 equipment. 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 protection is required, and the use of SCBA could be required.

N A.5.1.2.1 It is known that during overhaul, many fire fighters remove their respiratory protective equipment and, as a result, expose themselves to probable contamination by carcinogens, toxic substances, and so forth. Respiratory protective equipment should be worn during overhaul and all PPE should be washed down after any incident involving fire prior to leaving the scene.

A.5.1.2.2 Personnel accountability systems vary from site to site and should be incorporated into the site incident management system/SOPs. This system should include the interface between the site personnel and the outside mutual aid personnel, recognizing that the personnel accountability system for the site can be different from the system of the outside mutual aid organization.

A.5.2.2 In an effort to provide all interior structural and advanced exterior firefighters an opportunity to demonstrate their ability to properly don fire fighter protective clothing and SCBA consistent with current standards of care as per the manufacturers' recommendations, currently accepted best practices, and their site-specific requirements as established by the local authority having jurisdiction, all personnel should be evaluated on their ability to accurately don the SCBA as quickly as possible within the scope of safe practices.

A.5.2.3 Exterior fires can involve Class A materials, such as finished goods, raw materials, bulk materials, and pallets or waste materials stored in various containers and configurations that can be stacked, piled, rolled, baled, or stored in racks or shelving. Facility fire brigade members need to understand the effects of fire and extinguishing agents and the collapse potential on those types of high-piled storage.

Facility fire brigade members also need to understand the exposure problem associated with these types of fires, which usually produce flying brands that easily spread fire from one area to another. The facility fire brigade member should be proficient at deploying and using 38 mm (1½ in.) and 65 mm (2½ in.) hose line and portable and fixed master stream appliances for offensive and defensive fire attack and exposure protection.

The facility fire brigade member should also understand hose streams and use of straight nozzles for exterior fire fighting. Live fire training can be either Class A or B fires.

Class C fires become Class A or B fires when isolated. The facility fire brigade member should understand the potential shock hazard associated with Class C fires. The member should understand that high-voltage wiring and equipment can have an electrical field that can create a shock hazard without actually having direct contact with the wire or equipment.

Facility fire brigade members should understand the company policies for lockout, tagout, and testing equipment to verify that the equipment has been de-energized and that the fire area or component is safe before entering locked electrical rooms or touching electrical equipment. The facility fire brigade member should understand the safe method of using hose streams on electrical equipment.

A.5.2.5 Combustible or flammable liquids could spread to other areas, exposing additional facilities. Spread could be enhanced by application of water. Environmental impact can result from spread. Actions such as diking or rerouting runoff can be effective means to control exposure to additional facilities.

A.5.2.7 See A.4.3.4.

Δ A.5.2.8 Personnel accountability systems vary from site to site and should be incorporated into the site incident management system/SOPs. When training exercises are intended to simulate emergency conditions, smoke-generating devices that do not create a hazard are required by NFPA 1404. Several accidents have occurred when smoke bombs or other smoke-generating devices that produce a toxic atmosphere have been used for training exercises.

Δ A.5.2.9 To be in compliance with OSHA 29 CFR 1910.134(g) (4) (ii), a minimum of two facility fire brigade members should be on-scene with PPE when facility fire brigade members are operating in an immediately dangerous to life and health (IDLH) or potentially IDLH atmosphere. Facility fire brigade members assigned to this function are generally known as a rapid intervention crew (RIC). Their primary purpose is the rescue of injured, lost, or trapped facility fire brigade members, and they should not be assigned other duties that would delay or impede their rescue effort. It is recognized that facility fire brigades, utilizing an incident management system along with a personnel accountability system, have incorporated an RIC into their management system. Further, it is the intent of this section to have the rapid intervention personnel standing by in

full PPE with RIC equipment immediately available. It is also recommended that NFPA 1407 be referred to during the training of brigade members in RIC operations. This state of readiness should be maintained until the incident management structure authorizes de-escalation.

A.5.3 Each site can vary significantly in the amount and types of systems, tools, and equipment that are specific to that site. The management of the facility fire brigade should document in the site SOPs the types of systems, tools, and equipment that are available for facility fire brigade use. If the system, tool, and equipment is available for use by the facility fire brigade, the authority having jurisdiction should ensure that the appropriate section knowledge and skills are tested. (See Annex E.)

Δ A.5.3.2 The facility fire brigade member should understand site safety and security practices as identified by local laws, regulations, procedural instructions, and standards of care. Each site can vary significantly as to the duties facility fire brigade members can be expected to perform when making entry into restricted areas. Entry into these areas can be accomplished by utilizing either forcible entry tools or routine access techniques. It is the intent of the NFPA 1081 technical committee to suggest that facility fire brigade members are to be trained commensurate with the duties assigned.

A.5.3.4 The facility fire brigade member should understand the use of various types of foam and other extinguishing agent applications for flammable and combustible liquid fires. Members should understand the various methods of extinguishment and the hazards associated with the various types of flammable and combustible liquid spills, leaks, and fires. Facility fire brigade members need to review and understand the storage containers, configuration, and processes where flammable and combustible liquids are stored, manufactured, and used. Plans need to be available that show piping layout, isolation valves, and remote shutdown locations.

Facility fire brigade members should review and understand boilover and slopover hazards associated with flammable and combustible liquid fires. Members should also understand the high-heat release associated with flammable and combustible liquid fires and the impact on exposed processes, equipment, and facilities. The potential for structural collapse of equipment and facilities involved or exposed to this type of fire should be recognized, as well as the possible impact on personnel safety. Facility fire brigade members should extinguish a Class B fire commensurate with the size of fire that they are or can be expected to extinguish at their facility.

A.5.3.5 Facility fire brigade members need to understand that most flammable gas fires have a high-heat release, which impacts burning and exposed processes, equipment, and facilities. The potential for structural collapse of equipment and facilities involved or exposed to this type of fire should be recognized, as well as the possible impact on personnel safety.

Facility fire brigade members also need to review specific flammable gases manufactured, stored, and used at their facilities, and the associated hazards (fire and explosion). Some flammable gas fires, such as hydrogen, can burn with an invisible flame, which creates a serious hazard to personnel.

A.5.3.6 Facility fire brigade members at sites that have dry chemical or carbon dioxide hose line systems require specialized training to become competent in the use of these devices. The facility fire brigade member should be thoroughly knowl-

edgeable in the operation of the system, how to activate the system, how to stop system flow, and procedures for restoring the system to full operational condition or reporting to the proper authority that the system has been discharged and needs to be returned to service by competent and authorized personnel. Furthermore, the facility fire brigade member should understand the proper application techniques and effects of air movement on these types of systems. Special procedures for utilizing these systems and standing by until the hazard is completely mitigated are paramount in effectively managing hazards protected by these systems.

Training in using these systems should cover all operational issues with the devices as well as discharging of these or similar systems so that members have a true understanding and feel for how to use these systems. Live fire training using similar devices to the plant system should be performed for accurate assessment of facility fire brigade members' ability. Such fire training can be done on Class B fuels of at least 4.65 m² (50 ft²) size and 76.2 mm (3 in.) depth. Emphasizing team approach and importance of backup personnel is also essential.

A.5.3.7 There are facilities that employ fixed fire protection and detection systems, and thus the facility fire brigade member operates in concert with these systems. Understanding these systems and their uses and limitations makes the facility fire brigade more effective in handling emergency procedures. Because of the many different types of systems and number of facilities that do not have fixed fire protection systems, the requirements for training the facility fire brigade member are covered as a site-specific hazard.

For fixed detection systems for fire, the facility fire brigade member needs to understand the different types of systems on the site as well as signals generated by the system such as alarm, trouble, and supervisory. This understanding is important to determining how to respond to the appropriate situation upon arrival at the control panel or annunciation device. First-arriving facility fire brigade members can then effectively communicate the indications on the control panel to other responding personnel per site procedures. As additional knowledge requirements, facility fire brigade members should be intimately familiar with system operations such as activate, silence, and reset procedures, as well as possibly releasing a specialized fire protection system such as deluge spray, FM200®, Inergen®, carbon dioxide, or foam.

For fixed gas detection systems, the facility fire brigade member should understand the different types of gas detection systems at the site. The facility fire brigade member should also understand the different signals of gas detection systems, which typically include low, medium, and high concentrations of gas as well as fault indications. Other important knowledge for facility fire brigade members is the understanding of the use of parts per million (ppm) reading and percent of lower flammable and explosive limit readings.

For portable gas monitoring devices, facility fire brigade members should be thoroughly trained in the safe use of these devices. Further, they should understand flammable and explosive atmospheres and readings. Lastly, they should have an understanding of areas that can accumulate gases and of correct entry and exit procedures.

A.5.3.8 Many sites have fixed fire suppression systems, including sprinkler systems, foam systems, total flooding and local application carbon dioxide systems, dry chemical systems, clean

agent systems (e.g., FM200® and Inergen®), and halon systems. These systems are installed to provide a first line of defense of fire protection of areas or specific equipment. Operating with these systems is essential to all facility fire brigade members. Failure of a system to operate by automatic means can be cause for operating the equipment manually to achieve the desired result of fire control or extinguishment. Further, the shutting down of these systems prematurely can cause the fire to intensify and spread. In the case of the total flooding agents such as carbon dioxide, FM200®, Inergen®, and halon, interrupting the integrity of the enclosing structure can cause the system to be ineffective.

Facility fire brigade members should know how the specific systems at their site are intended to perform so that the brigade does not unintentionally interfere with the operation of these systems. The facility fire brigade member should know by which means they can control the system using electrical and mechanical means. Closing a valve or de-energizing a solenoid as well as performing the opposite functions to initiate the system can be one way to shut down a system. Understanding the system overrides such as bypasses, valve opening, and mechanical overrides of electrical devices allows the facility fire brigade member to institute the system operation in the event of automatic system failure. A facility fire brigade member should also recognize that operating a damaged fixed fire protection system, such as one damaged by explosion, can create a more dangerous situation by wasting resources; for example, damaged piping flowing water away from the fire and depleting the water supply to other members or agencies working at the emergency.

Understanding the hazard associated with these systems is essential to facility fire brigade and personnel safety. Discharging carbon dioxide into an occupied area can be life threatening. Large-volume water flow from monitors or deluge systems can present injury hazards to personnel operating in the area of the discharge from both the effects of the agent as well as moving the fire and smoke into areas occupied by personnel.

A.5.3.9 Class C fires become Class A or B fires when de-energized. The facility fire brigade member should understand the potential shock hazard associated with Class C fires. The member should understand that high-voltage wiring and equipment can have an electrical field that can create a shock hazard without actually having direct contact with the wire or equipment.

Facility fire brigade members should understand the company policies for lockout, tagout, and testing equipment to verify that the equipment has been de-energized and that the fire area or component is safe before entering locked electrical rooms or touching electrical equipment. The facility fire brigade member should understand the safe method of using hose streams on electrical equipment.

A.5.3.10 Site-specific tools and equipment can include ropes, handlights, power tools, hand tools, power plants, portable lighting equipment, hose and hose accessories, salvage and overhaul tools and equipment, and special-purpose equipment such as special agent appliances.

N A.5.3.12 Other personal protective equipment might include hearing protection in cabs that have a noise level in excess of 90 dBA, eye protection for fire fighters riding in jump seats that are not fully enclosed, and SCBAs for those departments that

require fire fighters to don SCBAs while en route to the emergency. [1001:A.5.3.2]

N A.6.1.2.1 It is known that during overhaul, many fire fighters remove their respiratory protective equipment and, as a result, expose themselves to probable contamination by carcinogens, toxic substances, and so forth. Respiratory protective equipment should be worn during overhaul and all PPE should be washed down after any incident involving fire prior to leaving the scene.

A.6.1.2.2 See A.5.2.2.

Δ A.6.2.1 Site-specific hazards should be identified and itemized for the facility fire brigade, along with a detailed explanation of each hazard. Special hazards can involve operations or materials. Typical operations are data processing and electronic control equipment, where the discharge of a special extinguishing agent can present a hazard to the facility fire brigade members; engine test areas; paint dip, mix, and storage rooms; spray booths; flammable liquid tank farms; machinery operations; energized electrical equipment; hazardous materials; and combustible dusts.

Fire hose should be in accordance with NFPA 1961. Hose should be maintained in accordance with NFPA 1962.

Handline should be commensurate with the size and type of fires that the members are expected to extinguish in their normal duties.

Radios can be used for communications on the fireground; however, they cannot be the sole tool for accounting for one's partner in the interior of a structure fire [see 29 CFR 1910.134(g)(4)(i)].

A.6.2.3 Some sites have fixed smoke removal systems already installed for ventilation of products of combustion. The management of the facility fire brigade should ensure that appropriate education and training are provided on these systems.

A.6.2.4 The facility fire brigade member should be able to recognize important evidence as to a fire's cause and maintain the evidence so that further testing can be done without contamination or chain-of-custody problems. Evidence should be left in place (when possible; otherwise, chain of custody should be established); not altered by improper handling, walking, and so forth; and not destroyed. Possible means to protect evidence is to avoid touching, to protect with salvage covers during overhaul, or to rope off the area where the evidence lies. The facility fire brigade member is not intended to be highly proficient at origin and cause determination.

Δ A.6.2.5 Personnel accountability systems vary from site to site and should be incorporated into the site incident management system/SOPs. When training exercises are intended to simulate emergency conditions, smoke-generating devices that do not create a hazard are required by NFPA 1404. Several accidents have occurred when smoke bombs or other smoke-generating devices that produce a toxic atmosphere have been used for training exercises.

A.6.2.6 See A.4.3.4.

A.6.2.9 See A.5.2.5.

A.6.2.10 See A.5.2.9.

A.6.3 See Annex E.

A.6.3.1 See A.5.3.7.

A.6.3.2 See A.5.3.8.

A.6.3.4 See A.5.3.4.

A.6.3.5 See A.5.3.5.

A.6.3.6 See A.5.3.6.

A.6.3.7 Site-specific tools and equipment can include ropes, hand lights, power tools, hand tools, power plants, portable lighting equipment, hose and hose accessories, salvage and overhaul tools and equipment, and special-purpose equipment such as special agent appliances.

A.6.3.9 Personnel accountability systems vary from site to site and should be incorporated into the site incident management system/SOPs. This system should include the interface between the site personnel and the outside mutual aid personnel, recognizing that the personnel accountability system for the site can be different from the system of the outside mutual aid organization.

A.6.3.11 See A.5.3.9.

A.7.2.2(A) Size-up includes the many variables that the facility fire brigade leader collects from the time of the alarm, during response, and upon arrival, in order to develop an initial action plan to control an emergency incident. These observations can include structural type and occupancy, fire involvement, number of occupants, materials spilled or involved in fire, wind direction, topography, and other observations relevant to the incident.

A.7.2.3 An incident safety officer should be included as part of the incident management system as a command staff member, as specified in NFPA 1561. The incident commander should appoint an incident safety officer for most events. If an incident safety officer is not appointed, the incident commander also functions as the incident safety officer. Personnel accountability systems vary and should be incorporated into the site incident management system/SOPs. This system should include the interface between the site personnel and the outside mutual aid personnel, recognizing that the personnel accountability system for the site can be different from that of the outside mutual aid. The facility fire brigade leader can assign additional RICs based on the size and complexity of the incident scene.

A.7.2.3(B) This requirement takes into consideration the facility fire brigade leader's ability to give orders, direct personnel, evaluate information, and allocate resources to respond to the wide variety of emergency situations the facility fire brigade encounters.

A.7.2.4 One of the facility fire brigade leader's primary responsibilities is safety during facility fire brigade activities. This standard defines the minimum requirements for the facility fire brigade leader. Applicable OSHA regulations define additional requirements for those who could be assigned those duties.

A.9.1.3.4 Support members should be trained to recognize the control zones.

Annex B Explanation of the Professional Qualifications Standards and Concepts of JPRs

This annex is not a part of the requirements of this NFPA document but is included for informational purposes only.

B.1 Explanation of the Professional Qualifications Standards and Concepts of Job Performance Requirements (JPRs). The primary benefit of establishing national professional qualifications standards is to provide both public and private sectors with a framework of the job requirements for emergency services personnel. Other benefits include enhancement of the profession, individual as well as organizational growth and development, and standardization of practices.

NFPA professional qualifications standards identify the minimum job performance requirements (JPRs) for specific emergency services levels and positions. The standards can be used for training design and evaluation; certification; measuring and critiquing on-the-job performance; defining hiring practices; job descriptions; and setting organizational policies, procedures, and goals.

Professional qualifications standards for specific jobs are organized by major areas of responsibility defined as "duties." For example, the fire fighter's duties might include fire department communications, fireground operations, and preparedness and maintenance, whereas the fire and life safety educator's duties might include education and implementation, planning and development, and evaluation. Duties are major functional areas of responsibility within a specific job.

The professional qualifications standards are written as JPRs. JPRs describe the performance required for a specific job and are grouped according to the duties of the job. The complete list of JPRs for each duty defines what an individual must be able to do in order to perform and achieve that duty.

B.2 The Parts of a JPR.

B.2.1 Critical Components. The JPR comprises three critical components, which are as follows:

- (1) Task to be performed, partial description using an action verb
- (2) Tools, equipment, or materials that are to be provided to complete the task
- (3) Evaluation parameters and performance outcomes

Table B.2.1 gives an example of the critical components of a JPR.

Table B.2.1 Example of a JPR

(1) Task to be performed	(1) Perform overhaul at a fire scene,
(2) Tools, equipment, or materials	(2) given approved PPE, attack line, hand tools, flashlight, and an assignment,
(3) Evaluation parameters and performance outcomes	(3) so that structural integrity is not compromised, all hidden fires are discovered, fire cause evidence is preserved, and the fire is extinguished.

B.2.1.1 The Task to Be Performed. The first component is a concise statement of what the person is required to do. A significant aspect of that phrase is the use of an action verb, which sets the expectation for what is to be accomplished.

B.2.1.2 Tools, Equipment, or Materials That Must Be Provided for Successful Completion of the Task. This component ensures that all individuals completing the task are given the same tools, equipment, or materials when they are being evaluated. Both the individual and the evaluator will know what will be provided in order for the individual to complete the task.

B.2.1.3 Evaluation Parameters and Performance Outcomes. This component defines — for both the performer and the evaluator — how well the individual should perform each task. The JPR guides performance toward successful completion by identifying evaluation parameters and performance outcomes. This portion of the JPR promotes consistency in evaluation by reducing the variables used to gauge performance.

B.2.2 Requisite Knowledge and Skills. In addition to these three components, the JPR describes requisite knowledge and skills. As the term *requisite* suggests, these are the necessary knowledge and skills the individual should have prior to being able to perform the task. Requisite knowledge and skills are the foundation for task performance.

B.2.3 Examples. With the components and requisites combined, a JPR might read similar to the following two examples.

B.2.3.1 Example: Fire Fighter I. Perform overhaul at a fire scene, given approved PPE, attack line, hand tools, flashlight, and an assignment, so that structural integrity is not compromised, all hidden fires are discovered, fire cause evidence is preserved, and the fire is extinguished.

(A) Requisite Knowledge. Knowledge of types of fire attack lines and water application devices for overhaul, water application methods for extinguishment that limit water damage, types of tools and methods used to expose hidden fire, dangers associated with overhaul, signs of area of origin or signs of arson, and reasons for protection of fire scene.

(B) Requisite Skills. The ability to deploy and operate an attack line; remove flooring, ceiling, and wall components to expose void spaces without compromising structural integrity; apply water for maximum effectiveness; expose and extinguish hidden fires in walls, ceilings, and subfloor spaces; recognize and preserve signs of area of origin and arson; and evaluate for complete extinguishment.

B.2.3.2 Example: Fire and Life Safety Educator II. Prepare a written budget proposal for a specific program or activity, given budgetary guidelines, program needs, and delivery expense projections, so that all guidelines are followed and the budget identifies all program needs.

(A) Requisite Knowledge. Knowledge of budgetary process; governmental accounting procedures; federal, tribal, state, and local laws; organizational bidding process; and organization purchase requests.

(B) Requisite Skills. The ability to estimate project costs; complete budget forms; requisition/purchase orders; collect, organize, and format budgetary information; complete program budget proposal; and complete purchase requests.

B.3 Potential Uses for JPRs.

B.3.1 Certification. JPRs can be used to establish the evaluation criteria for certification at a specific job level. When used for certification, evaluation should be based on the successful completion of the JPRs.

The evaluator would verify the attainment of requisite knowledge and skills prior to JPRs evaluation. Verification could be through documentation review or testing.

The individual seeking certification would be evaluated on completion of the JPRs. The individual would perform the task and be evaluated based on the evaluation parameters and performance outcomes. This performance-based evaluation is based on practical exercises for psychomotor skills and written examinations for cognitive skills.

Psychomotor skills are those physical skills that can be demonstrated or observed. Cognitive skills cannot be observed but rather are evaluated on how an individual completes the task (process-oriented) or on the task outcome (product-oriented).

Performance evaluation requires that individuals be given the tools, equipment, or materials listed in the JPR in order to complete the task.

B.3.2 Curriculum Development and Training Design and Evaluation. The statements contained in this document that refer to job performance were designed and written as JPRs. Although a resemblance to instructional objectives might be present, these statements should not be used in a teaching situation until after they have been modified for instructional use.

JPRs state the behaviors required to perform specific skills on the job, as opposed to a learning situation. These statements should be converted into instructional objectives with behaviors, conditions, and degree to be measured within the educational environment.

While the differences between JPRs and instructional objectives are subtle in appearance, their purposes differ. JPRs state what is necessary to perform the job in practical and actual experience. Instructional objectives, on the other hand, are used to identify what students must do at the end of a training session and are stated in behavioral terms that are measurable in the training environment.

By converting JPRs into instructional objectives, instructors would be able to clarify performance expectations and avoid confusion caused by the use of statements designed for purposes other than teaching. Instructors would be able to add jurisdictional elements of performance into the learning objectives as intended by the developers.

Requisite skills and knowledge could be converted into enabling objectives, which would help to define the course content. The course content would include each item of the requisite knowledge and skills ensuring that the course content supports the terminal objective.

B.3.2.1 Example: Converting a Fire Fighter I JPR into an Instructional Objective. The instructional objectives are just two of several instructional objectives that would be written to support the terminal objective based on the JPR.

JPR: Perform overhaul at a fire scene, given approved PPE, attack line, hand tools, flashlight, and an assignment, so that structural integrity is not compromised, all hidden fires are discovered, fire cause evidence is preserved, and the fire is extinguished.

Instructional Objective (Cognitive): The Fire Fighter I will identify and describe five safety considerations associated with structural integrity compromise during overhaul as part of a written examination.

Instructional Objective (Psychomotor): The Fire Fighter I will demonstrate the designed use of tools and equipment during overhaul to locate and extinguish hidden fires without compromising structural integrity.

B.3.2.2 Example: Converting a Fire and Life Safety Educator II JPR into an Instructional Objective. The instructional objectives are just two of several instructional objectives that would be written to support the terminal objective based on the JPR.

JPR: Prepare a written budget proposal for a specific program or activity, given budgetary guidelines, program needs, and delivery expense projections, so that all guidelines are followed and the budget identifies all program needs.

Instructional Objective (Cognitive): The Fire and Life Safety Educator II will list and describe the bidding process for the purchase of a published program using budgetary guidelines, program needs, and the guidelines established by local organizational procedures as part of a written examination.

Instructional Objective (Psychomotor): The Fire and Life Safety Educator II will lead in the purchase of a specific fire and life safety educational program by following the bidding process to completion, using local organizational guidelines, including budgetary procedures, program needs, and delivery expense projections.

B.4 Other Uses for JPRs. While the professional qualifications standards are used to establish minimum JPRs for qualification, they have been recognized as guides for the development of training and certification programs, as well as a number of other potential uses.

These areas might include the following:

- (1) *Employee Evaluation/Performance Critiquing.* The professional qualifications standards can be used as a guide by both the supervisor and the employee during an evaluation. The JPRs for a specific job define tasks that are essential to perform on the job, as well as the evaluation criteria to measure completion of the tasks.
- (2) *Establishing Hiring Criteria.* The professional qualifications standards can be helpful in a number of ways to further the establishment of hiring criteria. The authority having jurisdiction (AHJ) could simply require certification at a specific job level, for example, Fire Fighter I. The JPRs could also be used as the basis for pre-employment screening to establish essential minimal tasks and the related evaluation criteria. An added benefit is that individuals interested in employment can work toward the minimal hiring criteria at local colleges.

- (3) *Employee Development.* The professional qualifications standards can be practical for both the employee and the employer in developing a plan for the employee's growth within the organization. The JPRs and the associated requisite knowledge and skills can be used as a guide to determine additional training and education required for the employee to master the job or profession.
- (4) *Succession Planning.* Succession planning addresses the efficient placement of individuals into jobs in response to current needs and anticipated future needs. A career development path can be established for targeted employees to prepare them for growth within the organization. The JPRs and requisite knowledge and skills could then be used to develop an educational path to aid in the employee's advancement within the organization or profession.
- (5) *Establishing Organizational Policies, Procedures, and Goals.* The professional qualifications standards can be functional for incorporating policies, procedures, and goals into the organization or agency.

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N Annex C An Overview of JPRs for Facility Fire Brigade Member

This annex is not a part of the requirements of this NFPA document but is included for informational purposes only.

N C.1 Facility Fire Brigade Member. Table C.1 provides the user of the standard with an overview of the JPRs and shows the progression of the three Fire Brigade Member levels found in the document. It is intended to assist the user of the document with the implementation of the requirements and the development of training programs using the JPRs.

N Table C.1 Overview of JPRs for Facility Fire Brigade Member

Incipient Facility Fire Brigade Member	Advanced Exterior Facility Fire Brigade Member	Interior Structural Facility Fire Brigade Member
General		
4.1 General. This duty shall involve initiating communications, using facility communications equipment to effectively relay oral or written information, responding to alarms, returning equipment to service, and completing incident reports, according to the JPRs in 4.1.1 through 4.2.3. 4.1.1 Qualification or Certification. For qualification or certification at the incipient facility fire brigade level, the facility fire brigade member shall meet the entrance requirements in Chapter 1 and Sections 4.1 and 4.2, the site-specific requirements in Section 4.3 as defined by the management of the facility fire brigade, and the requirements defined in Chapter 4 of NFPA 1072. 4.1.2 Basic Incipient Facility Fire Brigade Member JPRs. All basic incipient facility fire brigade members shall have a general knowledge of basic fire behavior; operation within an incident management system; operation within the emergency response operations plan for the site, the standard operating and safety procedures for the site, and site-specific hazards. 4.1.2.1 Initiate a response to a reported emergency, given the report of an emergency, facility standard operating procedures, and communications equipment, so that all necessary information is obtained and communications equipment is operated properly.	5.1 General. 5.1.1 Qualification or Certification. For qualification or certification at the advanced exterior facility fire brigade member level, the facility fire brigade member shall meet the entrance requirements in Chapter 1 and Sections 4.1, 4.2, 5.1, and 5.2; the site-specific requirements in Sections 4.3 and 5.3 as defined by the management of the facility fire brigade; and the requirements defined in Chapter 4 of NFPA 1072. 5.1.2 Basic Advanced Exterior Facility Fire Brigade Member JPRs. 5.1.2.1 Utilize a pre-incident plan, given pre-incident plans and an assignment, so that the facility fire brigade member implements the responses detailed by the plan.	6.1 General. 6.1.1 Qualification or Certification. For qualification or certification at the interior structural facility fire brigade member level, the member shall meet the entrance requirements in Chapter 1 and Sections 4.1, 4.2, 6.1, and 6.2; the site specific requirements in Sections 4.3 and 6.3 as defined by the management of the facility fire brigade; and the requirements defined in Chapter 4 of NFPA 1072. 6.1.2 Basic Interior Structural Fire Brigade Member JPRs. 6.1.2.1 Use thermal protective clothing during structural fire-fighting operations, given thermal protective clothing, so that the clothing is correctly donned within 2 minutes (120 seconds), worn, and doffed.

(continues)

N Table C.1 *Continued*

Incipient Facility Fire Brigade Member	Advanced Exterior Facility Fire Brigade Member	Interior Structural Facility Fire Brigade Member
4.1.2.2 Transmit and receive messages via the facility communications system, given facility communications equipment and operating procedures, so that the information is promptly relayed and is accurate, complete, and clear. 4.1.2.3 Respond to a facility emergency, given the necessary equipment and facility response procedures, so that the team member arrives in a safe manner. 4.1.2.4 Return equipment to service, given an assignment, policies, and procedures, so that the equipment is inspected, damage is noted, the equipment is cleaned, and the equipment is placed in a ready state for service or is reported otherwise. 4.1.2.5 Complete a basic incident report, given the report forms, guidelines, and incident information, so that all pertinent information is recorded, the information is accurate, and the report is complete. 4.1.3 Activate an emergency call for assistance, given vision-obscured conditions, personal protective equipment (PPE), and department standard operating procedures (SOPs), so that the fire fighter can be located and rescued.	5.1.2.2 Interface with outside mutual aid organizations, given standard operating procedures (SOPs) for mutual aid response and communication protocols, so that a unified command is established and maintained.	6.1.2.2 Use self-contained breathing apparatus (SCBA) during emergency operations, given SCBA and other PPE, so that the SCBA is correctly donned, the SCBA is correctly worn, controlled breathing techniques are used, emergency procedures are enacted if the SCBA fails, all low-air warnings are recognized, respiratory protection is not intentionally compromised, and hazardous areas are exited prior to air depletion. 6.1.2.3 Utilize a pre-incident plan, given pre-incident plans and an assignment, so that the facility fire brigade member implements the pre-incident plan. 6.1.2.4 Given a structural fire-fighting ensemble including respiratory protection, decontamination equipment on the fireground or at the fire station, the interior structural fire brigade member shall describe and perform field reduction of contaminants of PPE so that the PPE is handled in the proper manner and maintained in a safe working condition.
Manual Fire Suppression		
4.2 Manual Fire Suppression. This duty shall involve tasks related to the manual control of fires and property conservation activities by the incipient facility fire brigade member. 4.2.1 Extinguish incipient fires, given an incipient fire and a selection of portable fire extinguishers, so that the correct extinguisher is chosen, the fire is completely extinguished, proper extinguisher-handling techniques are followed, and the area of origin and fire cause evidence are preserved.	5.2 Manual Fire Suppression. 5.2.1 Use thermal protective clothing during exterior fire-fighting operations, given thermal protective clothing, so that the clothing is correctly donned within 2 min (120 sec), worn, and doffed.	6.2 Manual Fire Suppression. 6.2.1 Attack an interior structural fire operating as a member of a team, given a water source, a handline, PPE, tools, and an assignment, so that team integrity is maintained, the handline is deployed for advancement, access is gained into the fire area, correct application practices are used, the fire is approached safely, attack techniques facilitate suppression given the level of the fire, hidden fires are located and controlled, the correct body posture is maintained, hazards are avoided or managed, and the fire is brought under control.
		<i>(continues)</i>

N Table C.1 *Continued*

Incipient Facility Fire Brigade Member	Advanced Exterior Facility Fire Brigade Member	Interior Structural Facility Fire Brigade Member
4.2.2 Conserve property, given special tools and equipment and an assignment within the facility, so that the facility and its contents are protected from further damage. 4.2.3 Exit hazardous area, given that the fire has progressed beyond the incipient stage, so that a safe haven is found and the team members' safety is maintained.	5.2.2 Use self-contained breathing apparatus (SCBA) during emergency operations, given SCBA and other PPE, so that the SCBA is correctly donned, the SCBA is correctly worn, controlled breathing techniques are used, emergency procedures are enacted if the SCBA fails, all low-air warnings are recognized, respiratory protection is not intentionally compromised, and hazardous areas are exited prior to air depletion. 5.2.3 Attack an exterior fire operating as a member of a team, given a water source, a handline, PPE, tools, and an assignment, so that team integrity is maintained, the attack line is correctly deployed for advancement, access is gained into the fire area, appropriate application practices are used, the fire is approached in a safe manner, attack techniques facilitate suppression given the level of the fire, hidden fires are located and controlled, the correct body posture is maintained, hazards are avoided or managed, and the fire is brought under control. 5.2.4 Conduct search and rescue operations as a member of a team, given an assignment, obscured vision conditions, PPE, scene lighting, forcible entry tools, handlines, and ladders when necessary, so that all equipment is correctly used, all assigned areas are searched, all victims are located and removed, team integrity is maintained, and team members' safety, including respiratory protection, is not compromised. 5.2.5 Conserve property operating as a member of a team, given special tools and equipment and an assignment within the facility, so that exposed property and the environment are protected from further damage. 5.2.6 Overhaul a fire scene, given PPE, a handline, hand tools, scene lighting, and an assignment, so that structural integrity is not compromised, all hidden fires are discovered, fire cause evidence is preserved, and the fire is extinguished. 5.2.7 Establish a water supply for fire-fighting operations, given a water source and tools, so that a water supply is established and maintained. 5.2.8 Exit a hazardous area as a team, given vision-obscured conditions, so that a safe haven is found before exhausting the air supply, others are not endangered, and the team integrity is maintained.	6.2.2 Force entry into a structure, given PPE, tools, and an assignment, so that the tools are used, the barrier is removed, and the opening is in a safe condition and ready for entry. 6.2.3 Perform ventilation on a structure operating as a member of a team, given an assignment, PPE, and tools, so that a sufficient opening is created, all ventilation barriers are removed, structural integrity is not compromised, and products of combustion are released from the structure. 6.2.4 Overhaul a fire scene, given PPE, attack line, hand tools, a flashlight, and an assignment, so that structural integrity is not compromised, all hidden fires are discovered, fire cause evidence is preserved, and the fire is extinguished. 6.2.5 Exit a hazardous area as a team, given vision-obscured conditions, so that a safe haven is found before exhausting the air supply, others are not endangered, and the team integrity is maintained. 6.2.6 Establish a water supply for fire-fighting operations, given a water source and tools, so that a water supply is established and maintained. 6.2.7 Interface with outside mutual aid organizations, given SOPs for mutual aid response and communication protocols, so that a unified command is established and maintained. 6.2.8 Conduct search and rescue operations as a member of a team, given an assignment, obscured vision conditions, PPE, a flashlight, forcible entry tools, handlines, and ladders when necessary, so that all equipment is correctly used, all assigned areas are searched, all victims are located and removed, team integrity is maintained, and team members' safety, including respiratory protection, is not compromised.

(continues)

N Table C.1 *Continued*

Incipient Facility Fire Brigade Member	Advanced Exterior Facility Fire Brigade Member	Interior Structural Facility Fire Brigade Member
	5.2.9 Operate as a member of a rapid intervention crew, given size-up information, basic rapid intervention tools and equipment, and an assignment, so that strategies to effectively rescue the facility brigade member(s) are identified and implemented; hazard warning systems are established and understood by all participating personnel; incident-specific PPE is identified, provided, and utilized; physical hazards are identified; and confinement, containment, and avoidance measures are discussed.	6.2.9 Conserve property operating as a member of a team, given special tools and equipment and an assignment within the facility, so that exposed property and the environment are protected from further damage. 6.2.10 Operate as a member of a rapid intervention crew, given size-up information, basic rapid intervention tools and equipment, and an assignment, so that strategies to effectively rescue the brigade member(s) are identified and implemented; hazard warning systems are established and understood by all participating personnel; incident-specific PPE is identified, provided, and utilized; physical hazards are identified; and confinement, containment, and avoidance measures are discussed.
Site-Specific Requirements		
4.3 Site-Specific Requirements. The management of the facility fire brigade shall determine the site-specific requirements that are applicable to the incipient facility fire brigade members operating on their site. The process used to determine the site-specific requirements shall be documented, and these additional JPRs added to those identified in Sections 4.1 and 4.2.	5.3 Site-Specific Requirements. The JPRs in 5.3.1 through 5.3.11 shall be considered as site-specific functions of the advanced exterior facility fire brigade member. The management of the facility fire brigade shall determine the site-specific requirements that are applicable to the advanced exterior facility fire brigade member operating on their site. The process used to determine the site-specific requirements shall be documented, and these additional JPRs added to those identified in Sections 5.1 and 5.2. Based on the assessment of the site-specific hazards of the facility and the duties that facility fire brigade members are expected to perform, the management of the facility fire brigade shall determine the specific requirements of Chapters 5 or 6 of NFPA 472, or the corresponding requirements in OSHA 29 CFR 1910.120(q) that apply.	6.3 Site-Specific Requirements. The management of the facility fire brigade shall determine the site-specific requirements that are applicable to the interior structural facility fire brigade member operating on their site. The process used to determine the site-specific requirements shall be documented, and these additional JPRs added to those identified in Sections 6.1 and 6.2. Based on the assessment of the site-specific hazards of the facility and the duties that facility fire brigade members are expected to perform, the management of the facility fire brigade shall determine the specific requirements of Chapters 5 and 6 of NFPA 472, or the corresponding requirements in OSHA 29 CFR 1910.120(q) that apply.
4.3.1 Attack an incipient stage fire, given a handline flowing up to 473 L/min (125 gpm), appropriate equipment, and a fire situation, so that the fire is approached safely, exposures are protected, the spread of fire is stopped, agent application is effective, the fire is extinguished, and the area of origin and fire cause evidence are preserved.	5.3.1 Perform a fire safety survey in a facility, given an assignment, survey forms, and procedures, so that fire and life safety hazards are identified, recommendations for their correction are made, and unresolved issues are referred to the proper authority.	6.3.1 Interpret alarm conditions, given an alarm signaling system, a procedure, and an assignment, so that the alarm condition is correctly interpreted and a response is initiated.
4.3.2 Activate a fixed fire protection system, given a fixed fire protection system, a procedure, and an assignment, so that the steps are followed and the system operates.	5.3.2 Gain access to facility locations, given keys, forcible entry tools (e.g., bolt cutters, small hand tools, and ladders), and an assignment, so that areas are accessed and remain accessible during advanced exterior facility fire brigade operations.	6.3.2 Activate a fixed fire protection system, given required PPE, a fixed fire protection system, a procedure, and an assignment, so that the procedures are followed and the system operates.
4.3.3 Utilize master stream appliances, given an assignment, an extinguishing agent, and a master stream device, so that the agent is applied to the fire as assigned.	5.3.3 Utilize master stream appliances, given an assignment, an extinguishing agent, and a master stream device and supply hose, so that the appliance is set up correctly and the agent is applied as assigned.	6.3.3 Utilize master stream appliances, given an assignment, an extinguishing agent, a master stream device, and a supply hose, so that the appliance is set up correctly and the agent is applied as assigned.

(continues)

N Table C.1 *Continued*

Incipient Facility Fire Brigade Member	Advanced Exterior Facility Fire Brigade Member	Interior Structural Facility Fire Brigade Member
4.3.4 Establish a water supply for fire-fighting operations, given an assignment, a water source, and tools, so that a water supply is established and maintained. 4.3.5 Perform a fire safety survey in a facility, given an assignment, survey forms, and procedures, so that fire and life safety hazards are identified, recommendations for their correction are made, and unresolved issues are referred to the proper authority.	5.3.4 Extinguish an ignitable (or simulated ignitable) liquid fire operating as a member of a team, given an assignment, a handline, PPE, a foam proportioning device, a nozzle, foam concentrates, and a water supply, so that the correct type of foam concentrate is selected for the given fuel and conditions, a correctly proportioned foam stream is applied to the surface of the fuel to create and maintain a foam blanket, the fire is extinguished, re-ignition is prevented, and team protection is maintained. 5.3.5 Control a flammable gas fire operating as a member of a team, given an assignment, a handline, PPE, and tools, so that crew integrity is maintained, contents are identified, the flammable gas source is controlled or isolated, hazardous conditions are recognized and acted upon, and team safety is maintained. 5.3.6 Extinguish an exterior fire using special extinguishing agents other than foam operating as a member of a team, given an assignment, a handline, PPE, and an extinguishing agent supply, so that fire is extinguished, re-ignition is prevented, and team protection is maintained. 5.3.7 Interpret alarm conditions, given an alarm signaling system, a procedure, and an assignment, so that the alarm condition is correctly interpreted and a response is initiated. 5.3.8 Activate a fixed fire suppression system, given PPE, a fixed fire protection system, a procedure, and an assignment, so that the correct steps are followed and the system operates. 5.3.9 Extinguish a Class C (electrical) or simulated Class C fire as a member of a team, given an assignment, a Class C fire-extinguishing appliance/extinguisher, and PPE, so that the proper type of Class C agent is selected for the condition, the selected agent is correctly applied to the fuel, the fire is extinguished, re-ignition is prevented, team protection is maintained, and the hazard is faced until retreat to safe haven is reached.	6.3.4 Extinguish an ignitable liquid fire operating as a member of a team, given an assignment, a handline, PPE, a foam proportioning device, a nozzle, foam concentrates, and a water supply, so that the correct type of foam concentrate is selected for the given fuel and conditions, a correctly proportioned foam stream is applied to the surface of the fuel to create and maintain a foam blanket, fire is extinguished, re-ignition is prevented, and team protection is maintained. 6.3.5 Control a flammable gas fire operating as a member of a team, given an assignment, a handline, PPE, and tools, so that team integrity is maintained, contents are identified, the flammable gas source is controlled or isolated, hazardous conditions are recognized and acted upon, and team safety is maintained. 6.3.6 Extinguish a fire using special extinguishing agents other than foam operating as a member of a team, given an assignment, a handline, PPE, and an extinguishing agent supply, so that fire is extinguished, re-ignition is prevented, and team protection is maintained. 6.3.7 Utilize tools and equipment assigned to the facility fire brigade, given an assignment and specific tools, so that tools are selected and correctly used under adverse conditions in accordance with manufacturer's recommendations and the policies and procedures of the facility fire brigade. 6.3.8 Set up and use portable ladders, given an assignment, single and extension ladders, and team members as appropriate, so that hazards are assessed, the ladder is stable, the angle is correct for climbing, extension ladders are extended to the correct height with the fly locked, the top is placed against a reliable structural component, and the assignment is accomplished. 6.3.9 Interface with outside mutual aid organizations, given SOPs for mutual aid response and communication protocols, so that a unified command is established and maintained.

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N Table C.1 *Continued*

Incipient Facility Fire Brigade Member	Advanced Exterior Facility Fire Brigade Member	Interior Structural Facility Fire Brigade Member
	5.3.10 Utilize tools and equipment assigned to the facility fire brigade, given an assignment and specific tools, so that tools are selected and correctly used under adverse conditions in accordance with manufacturer's recommendations and the policies and procedures of the facility fire brigade. 5.3.11 Set up and use portable ladders, given an assignment, single and extension ladders, and team members as appropriate, so that hazards are assessed, the ladder is stable, the angle is correct for climbing, extension ladders are extended to the correct height with the fly locked, the top is placed against a reliable structural component, and the assignment is accomplished. 5.3.12 Respond on apparatus to an emergency scene, given personal protective clothing and other necessary PPE, so that the apparatus is correctly mounted and dismounted, seat belts are used while the vehicle is in motion, and other PPE is correctly used. [1001:4.3.12(A)] 5.3.13 Attack a vehicle fire operating as a member of a team, given PPE, attack line, and hand tools, so that hazards are avoided, leaking flammable liquids are identified and controlled, protection from flash fires is maintained, all vehicle compartments are overhauled, and the fire is extinguished.	6.3.10 Perform a fire safety survey in a facility, given an assignment, survey forms, and procedures, so that fire and life safety hazards are identified, recommendations for their correction are made, and unresolved issues are referred to the proper authority. 6.3.11 Extinguish a Class C (electrical) fire as a member of a team, given an assignment, a Class C fire-extinguishing appliance/extinguisher, and personal protective equipment, so that the type of Class C agent is selected for the condition, a selected agent is correctly applied to the fuel, fire is extinguished, re-ignition is prevented, team protection is maintained, and the hazard is faced until retreat to safe haven is reached.

N Annex D National Fallen Firefighters Foundation

This annex is not a part of the requirements of this NFPA document but is included for informational purposes only.

N D.1 “16 Firefighter Life Safety Initiatives.” In 2004, the National Fallen Firefighters Foundation (NFFF) held an unprecedented gathering of the fire service leadership when more than 200 individuals assembled in Tampa, Florida, to focus on the troubling question of how to prevent line-of-duty deaths and injuries. Every year approximately 100 fire fighters lose their lives in the line of duty in the United States — about 1 every 80 hours. Every identifiable segment of the fire service was represented and participated in the summit.

The first Firefighter Life Safety Summit marked a significant milestone, because it not only gathered all segments of the fire service behind a common goal but it also developed the “16 Firefighter Life Safety Initiatives.” The summit attendees agreed that the “16 Firefighter Life Safety Initiatives” serve as a blueprint to reduce line-of-duty deaths and injuries. In 2014, a second Life Safety Summit was held and more than 300 fire service leaders gathered. At the second Firefighter Life Safety Summit, the “16 Firefighter Life Safety Initiatives” were reaffirmed as being relevant to reduce line-of-duty deaths and injuries.

N D.2 NFFF’s “16 Firefighter Life Safety Initiatives.”

- (1) Define and advocate the need for a cultural change within the fire service relating to safety, incorporating leadership, management, supervision, accountability, and personal responsibility.
- (2) Enhance the personal and organizational accountability for health and safety throughout the fire service.
- (3) Focus greater attention on the integration of risk management with incident management at all levels, including strategic, tactical, and planning responsibilities.
- (4) All fire fighters must be empowered to stop unsafe practices.
- (5) Develop and implement national standards for training, qualifications, and certification (including regular recertification) that are equally applicable to all fire fighters based on the duties they are expected to perform.
- (6) Develop and implement national medical and physical fitness standards that are equally applicable to all fire fighters, based on the duties they are expected to perform.
- (7) Create a national research agenda and data collection system that relates to the initiatives.
- (8) Utilize available technology wherever it can produce higher levels of health and safety.
- (9) Thoroughly investigate all fire fighter fatalities, injuries, and near misses.
- (10) Grant programs should support the implementation of safe practices and/or mandate safe practices as an eligibility requirement.
- (11) National standards for emergency response policies and procedures should be developed and championed.
- (12) National protocols for response to violent incidents should be developed and championed.
- (13) Fire fighters and their families must have access to counseling and psychological support.

- (14) Public education must receive more resources and be championed as a critical fire and life safety program.
- (15) Advocacy must be strengthened for the enforcement of codes and the installation of home fire sprinklers.
- (16) Safety must be a primary consideration in the design of apparatus and equipment.

Annex E Management Review of Site-Specific Job Requirement Process

This annex is not a part of the requirements of this NFPA document but is included for informational purposes only.

E.1 Management’s Responsibility. Subsection 1.3.2 of this standard requires that the management of the facility fire brigade define the site-specific requirements for each level of facility fire brigade membership. The following are examples of a process that could be used to complete this required review.

E.2 Example 1. A small hospital in a rural community creates an in-house fire brigade to respond to fire until the local fire department can arrive. Each shift has four people from maintenance and security personnel who respond to the fire as a fire brigade. The problem is to determine what type of hazards the facility has and what type of fire brigade duties the management wants the fire brigade to perform.

Δ E.2.1 A risk assessment of the fire hazards of the hospital was performed by the fire brigade leader, and the leader determined that an incipient facility fire brigade would be the appropriate level of responder. The leader conducted a site-specific requirement review, which was incorporated into the hospital fire brigade organizational statement and manual as required by OSHA. The fire brigade leader, as the person in management who determines the site-specific requirements, selected the following JPRs for the brigade.

The assessment that was made was consistent with the guidance in NFPA 600. It determined what type of fire brigade would be used by the hospital: an incipient facility fire brigade.

The following JPRs are required for the hospital fire brigade:

- (1) “Attack an incipient-stage fire” — The fire brigade is going to use fire extinguishers and fixed standpipe hose streams to attack incipient-stage fires. They call the local fire department immediately to handle all other fires and to assist with incipient-stage fires (*see 4.3.1*).
- (2) “Activate a fixed fire protection system” — The hospital has a wet pipe sprinkler system that the fire brigade supports (*see 4.3.2*).

The fire brigade leader determined that the following site-specific requirements are not needed for the hospital fire brigade:

- (1) “Utilize master stream appliances” — The hospital has no master stream appliances (*see 4.3.3*).
- (2) “Establish a water supply for fire-fighting operations” — The fire brigade is looking to the local fire department to provide this type of service to them (*see 4.3.4*).
- (3) “Perform a fire safety survey” — The security officers and the risk manager conduct this survey outside their duties as fire brigade members (*see 4.3.5*).