NFPA® 1005

Standard for Professional Qualifications for Marine Fire Fighting for Land-Based Fire Fighters

2014 Edition

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

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NFPA® 1005

Standard for

Professional Qualifications for Marine Fire Fighting for Land-Based Fire Fighters

2014 Edition

This edition of NFPA 1005, *Standard for Professional Qualifications for Marine Fire Fighting for Land-Based Fire Fighters*, was prepared by the Technical Committee on Fire Fighter Professional Qualifications and released by the Technical Correlating Committee on Professional Qualifications. It was issued by the Standards Council on November 12, 2013, with an effective date of December 2, 2013, and supersedes all previous editions.

This edition of NFPA 1005 was approved as an American National Standard on December 2, 2013.

Origin and Development of NFPA 1005

In 1972, the Joint Council of National Fire Service Organizations (JCNFSO) created the National Professional Qualifications Board for the Fire Service (NPQB) to facilitate the development of nationally applicable performance standards for uniformed fire service personnel. On December 14, 1972, the Board established four technical committees to develop those standards using the National Fire Protection Association (NFPA) standards-making system. The initial committees addressed the following career areas: fire fighter, fire officer, fire service instructor, and fire inspector and investigator.

The original concept of the professional qualification standards, as directed by the JCNFSO and the NPQB, was to develop an interrelated set of performance standards specifically for the fire service. The various levels of achievement in the standards were to build upon each other within a strictly defined career ladder. In the late 1980s, revisions of the standards recognized that the documents should stand on their own merit in terms of job performance requirements for a given field. Accordingly, the strict career ladder concept was abandoned, except for the progression from fire fighter to fire officer. The later revisions, therefore, facilitated the use of the documents by other than the uniformed fire services.

The Standards Council, at its July 2000 meeting, received a letter from the Department of Defense (DoD), requesting consideration for a new project on shipboard fire fighting for land-based units. The Standards Council placed a notice in *NFPA News* seeking input on interest for such a project. At its January 2001 meeting, the Council approved the establishment of a new technical committee under the Professional Qualifications Project to address the request.

The Technical Correlating Committee on Professional Qualifications assigned this new project to the Technical Committee on Fire Fighter Professional Qualifications. That committee in turn named Mike Wieder to chair a task group of individuals with background in shipboard fire fighting.

The first edition of this standard included the professional qualifications for shipboard fire fighting for land-based units at Level I and Level II. The technical committee expressed thanks to the members of the Ship Board Fire Fighting Task Group who provided their time and expertise in the development of this document, which included Mike Wieder, Chair; Paul Calderwood; Luke Carpenter; Douglas Dillon; Brian Gallant; Jeff Johnson; John Lewis; Henry Morse; William Sullivan; and Don Merkle.

For the 2014 edition, the Technical Committee on Fire Fighter Professional Qualifications has reassessed the job performance requirements for land-based fire fighters responding to marine fire-fighting incidents. The result has been a significant change to the document, including the deletion of similar JPRs found in NFPA 1001, *Standard on Fire Fighter Professional Qualifications*, and the combining of JPRs for two levels into one. The technical committee has expanded the prerequisite requirement to also include personnel who have qualified to NFPA 1081, *Standard on Industrial Fire Brigade*, Chapters 6 and 7. The subsections for this document have been revised to include general requirements, access, response, communications, and fire control.

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Committee Scope: This Committee shall have primary responsibility for the management of the NFPA Professional Qualifications Project and documents related to professional qualifications for fire service, public safety, and related personnel.

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Committee Scope: This Committee shall have primary responsibility for documents on professional qualifications required of fire fighters.

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

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

Chapter 1 Administration

1.1 Scope. This standard identifies the minimum job performance requirements (JPRs) for Marine Fire Fighting for Land-Based Fire Fighters.

1.2* Purpose. The purpose of this standard is to specify the minimum job performance requirements for service as a Marine Fire Fighting for Land-Based Fire Fighters.

1.2.1 This standard shall define Marine Fire Fighting for Land-Based Fire Fighters.

1.2.2 The intent of the standard shall be to ensure that personnel serving as Marine Fire Fighting for Land-Based Fire Fighters are qualified.

1.2.3* This standard shall not address organization/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* Job performance requirements are the tasks personnel shall be able to perform to carry out the job duties.

1.2.6* Marine Fire Fighting for Land-Based Fire Fighters shall remain current with the general knowledge and skills and JPRs addressed in the level of qualification.

1.3 Application. The application of this standard is to specify which requirements within the document shall apply to Marine Fire Fighting for Land-Based Fire Fighters.

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.

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

1.3.4 The JPRs 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 for Marine Fire Fighting for Land-Based Fire Fighters shall meet all of the requirements defined in Chapter 4 prior to being qualified.

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

1.3.7 JPRs involving exposure to products of combustion shall be performed in approved personal protective equipment.

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 as established by the AHJ
(4) Job-related physical performance requirements as established by the AHJ

1.3.9 Wherever in this standard the terms *rules, regulations, policies, procedures, supplies, apparatus,* or *equipment* are referred to, it is implied that they are those of the AHJ.

1.4 Units. In this standard, values for measurement are followed by an equivalent in SI units, but only the first stated value shall be regarded as the requirement. Equivalent values in SI units shall not be considered as the requirement, because these values can be approximate. *(See Table 1.4.)*

Table 1.4 SI Conversions

Quantity	U.S. Unit/Symbol	SI Unit/Symbol	Conversion Factor
Length	inch (in.)	millimeter (mm)	1 in. = 25.4 mm
	foot (ft)	meter (m)	1 ft = 0.305 m
Area	square foot (ft^2)	square meter (m^2)	1 ft^2 = 0.0929 m^2

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

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

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

2.3 Other Publications.

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

2.4 References for Extracts in Mandatory Sections.

NFPA 1000, *Standard for Fire Service Professional Qualifications Accreditation and Certification Systems,* 2011 edition.

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

NFPA 1002, *Standard for Fire Apparatus Driver/Operator Professional Qualifications,* 2013 edition.

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

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

NFPA 1405, *Guide for Land-Based Fire Departments That Respond to Marine Vessel Fires,* 2011 edition.

NFPA 1670, *Standard on Operations and Training for Technical Search and Rescue Incidents,* 2014 edition.

NFPA 1710, *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments,* 2010 edition.

Chapter 3 Definitions

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

3.2 NFPA Official Definitions.

3.2.1* Approved. Acceptable to the authority having jurisdiction.

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

3.2.3* 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.

3.2.4 Shall. Indicates a mandatory requirement.

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

3.2.6 Standard. A document, the main text of which contains only mandatory provisions using the word "shall" to indicate requirements and which 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 *Manual of Style for NFPA Technical Committee Documents.*

3.3 General Definitions.

3.3.1 Action Plan.

3.3.1.1 *Incident Action Plan.* A written management plan developed or approved by the Incident Commander that establishes the overall strategic decisions and assigns tactical objectives for the incident.

3.3.1.2 *Initial Action Plan.* A verbal or written management plan developed by the initial Incident Commander to an incident and upon which initial incident control actions are based.

3.3.2 Bow. The front end of a boat or vessel. [**1405,** 2011]

3.3.3 Cold Zone. See 3.3.5.1.

3.3.4 Compartment. A subdivision of space or room in a ship.

3.3.5 Control Zones. The areas at an incident that are designated based upon safety and the degree of hazard to the fire fighter.

3.3.5.1* *Cold Zone.* The control zone of an incident that contains the command post and other support functions deemed necessary to control the incident.

3.3.5.2 *Hot Zone.* The control zone of an incident that includes the fire area or the area immediately surrounding hazardous materials and that extends far enough to prevent adverse effects from fire, products of combustion and/or hazardous materials releases to personnel outside the zone.

3.3.5.3 *Warm Zone.* The control zone at an incident that surrounds the hot zone and in which the fire fighter may be exposed to low levels of the products of combustion requiring standard fire fighter personal protective equipment for protection.

3.3.6 Draft. (1) The vertical distance between the water surface and the lowest point of a vessel. (2) The depth of water a vessel needs in order to float.

3.3.7 Fire Department. An organization providing rescue, fire suppression, and related activities. The term *fire department* shall include any public, governmental, private, industrial, or military organization engaging in this type of activity.

3.3.8 Fire Fighter II. The person, at the second level of progression as defined in Chapter 6, who has demonstrated the skills and depth of knowledge to function under general supervision. [**1001,** 2013]

3.3.9 Hot Zone. See 3.3.5.2.

3.3.10 Hull. The main structural frame or body of a vessel below the weather deck.

3.3.11 Immediately Dangerous to Life or Health (IDLH). Any condition that would pose an immediate or delayed threat to life, cause irreversible adverse health effects, or interfere with an individual's ability to escape unaided from a hazardous environment. [**1670,** 2014]

3.3.12 Incident Action Plan. See 3.3.1.1.

3.3.13 Initial Action Plan. See 3.3.1.2.

3.3.14 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,** 2011]

3.3.15 List. The continuous lean or tilt of a vessel to one side due to an imbalance of weight within the vessel.

3.3.16 Marine Facility. Any land-based facility that incorporates buildings, personnel, equipment, docks, moorings, and other features to support the docking, loading, unloading, maintenance, and servicing of marine vessels.

3.3.17 Marine Incident. Any fire, explosion, hazardous material, utility, or other type of emergency incident on or in the vicinity of a marine vessel and/or facility to which a fire department can be expected to respond.

3.3.18 Master. The captain of a merchant ship. [**1405,** 2011]

3.3.19 Mate. A deck officer on a merchant ship ranking below the master. [**1405,** 2011]

3.3.20 Mooring. (1) Permanent anchor equipment (attached by a chain to a buoy) to which a vessel can connect a line, wire, or chain, eliminating the need to use the vessel's anchor. (2) The act of securing a vessel. (3) The location where a vessel is berthed.

3.3.21 Personal Protective Clothing. The full complement of garments fire fighters are normally required to wear while on an emergency scene including turnout coat, protective trousers, fire-fighting boots, fire-fighting gloves, a protective hood, and a helmet with eye protection. [**1001,** 2013]

3.3.22 Personal Protective Equipment. Full personal protective clothing, plus a self-contained breathing apparatus (SCBA) and a personal alert safety system (PASS) device.

3.3.23 Port. General area of a shore establishment having facilities for the landing, loading/unloading, and maintenance of vessels; harbor with piers.

3.3.24 Port Side. The left-hand side of a ship when facing forward. [**1405,** 2011]

3.3.25 Port State Control. The government authority having ultimate legal jurisdiction over a port or jurisdictional waterways.

3.3.26 Procedure. The series of actions, conducted in an approved manner and sequence, designed to achieve an intended outcome. [**1081,** 2012]

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

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

3.3.29 Secondary Line. A back-up hose line and crew that accompanies the primary attack line and crew into the hot zone at an incident.

3.3.30 Ship's Agent. A person or firm who transacts all business in a port on behalf of ship owners or charterers.

3.3.31 Ship's Engineer. Officer on a mechanically propelled vessel charged with maintenance and efficient operation of main engines and, usually, all powered machinery on board.

3.3.32 Starboard Side. The right-hand side of a ship as one faces forward. [**1405,** 2011]

3.3.33 Stern. The after end of boat or vessel. [**1405,** 2011]

3.3.34 Structural Fire Fighting. The activities of rescue, fire suppression, and property conservation in buildings or other structures, vehicles, rail cars, marine vessels, aircraft, or like properties. [**1710,** 2010]

3.3.35 Task. A specific job behavior or activity. [**1002,** 2013]

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

3.3.37 Trim. (1) The longitudinal angle of a vessel. (2) The relation of the vessel's floating attitude to the water considered from front to back. (3) The difference between fore and aft draft readings. (4) To cause a vessel to assume a desirable position in the water by arrangement of ballast, cargo, or passengers.

3.3.38 Vessel. The general term for all craft capable of floating on water and larger than a rowboat.

3.3.39 Warm Zone. See 3.3.5.3.

Chapter 4 Marine Fire Fighter

4.1 General Requirements. To meet the requirements for Marine Fire Fighter, the Fire Fighter II shall meet the JPRs in Sections 4.1 through 4.5 of this standard and the requirements defined in Chapter 6 of NFPA 1001, *Standard for Fire Fighter Professional Qualifications*, or Chapters 6 and 7 of NFPA 1081, *Standard for Industrial Fire Brigade Member Professional Qualifications*.

4.1.1 Identify marine vessel types and potential products transported given, general information on the vessel types in the local response jurisdiction, awareness level information on products transported by marine vessels, AHJ policies and procedures, and overall scene safety considerations at marine incidents so that the scene of the incident and the hazards are recognized.

(A) Requisite Knowledge. Generalized marine vessel types; awareness level hazardous product information; general hazard classes of product and structural fire fighting PPE compatibilities; policies and procedures associated with marine incident response.

(B) Requisite Skills. Reading comprehension and oral communication skills.

4.1.2 Define common marine vessel construction and terminology given vessel construction terminology, marine vessel terminology and general structural hazards associated with marine vessels so that land-based fire fighters have a working knowledge of general terms when communicating with marine vessel personnel.

(A) Requisite Knowledge. General knowledge of marine vessel construction, marine vessel terminology, structural hazards with marine vessels.

(B) Requisite Skills. Reading comprehension and oral communication skills.

4.1.3* Board a marine vessel, given a vessel, gangway, approved PPE, water survival techniques, approved hand tools

and suppression equipment, and AHJ policies and procedures, so that land-based fire fighters are transferred to the vessel in a safe manner.

(A) Requisite Knowledge. Effect of vessel movement due to tide, wakes, currents, or other factors; effect of water depth; water survival techniques; and draft for gangways.

(B) Requisite Skills. Donning approved PPE; carrying tools and equipment in a proper and safe manner, climbing techniques for gangways.

4.1.4 Retrieve a vessel fire control plan and other specified documents from a cold zone on the vessel, given a vessel, an assignment, a vessel fire control plan and other documents, and any necessary equipment, so that the vessel fire control plan and documents are located and brought to the Incident Commander within the time specified by the AHJ.

(A) Requisite Knowledge. Location(s) on the vessel where the vessel fire control plan and other documents, such as dangerous cargo manifests, trim and stability documents, cargo-loading manuals where applicable, and crew and passenger lists are stored; primary and alternative routes to reach the location(s) where the vessel fire control plan and other documents are stored; understanding of response personnel utilization of the vessel fire control plan; location of the command post.

(B) Requisite Skills. Boarding and negotiating or traveling through the vessel; recognition of the vessel fire control plan and other types of documents.

4.2 Access. This duty involves making safe access to the vessel.

4.2.1 Identify a specified location on a vessel, given a vessel fire control plan and an assignment, so that the assignment is completed and reported.

(A) Requisite Knowledge. Vessel construction, including maritime terminology (e.g., bow, stern, port, starboard); unique hazards associated with various location in a vessel; terminology and symbols used on a vessel fire control plan.

(B) Requisite Skills. Negotiating vessel ladders, decks, and corridors; operating vessel doors and hatches.

4.2.2 Identify onboard vessel fixed fire suppression systems as a member of a team, given an incident, an assignment, standard operating procedures, and communications equipment, so that the system is activated or shut down when information is requested by the Incident Commander.

(A) Requisite Knowledge. Types of fixed suppression systems found on vessels; appropriate times to activate fixed suppression systems on vessels; hazards associated with operating fixed suppression systems and agents.

(B) Requisite Skills. Recognizing fire suppression system controls; operating communications equipment located at the fire suppression system control room; understanding vital precautions to be taken as a fire team member after fire suppression systems have been activated.

4.3 Response. This duty involves connecting to the water supply for fire-fighting operations, establishing effective incident communications, and protecting exposures.

4.3.1 Establish connections for the water supply at an incident, given international shore connections, so that an uninterrupted supply of water is established and all hoses are connected and positioned according to procedures.

(A) Requisite Knowledge. International shore connection.

(B) Requisite Skills. Ability to recognize and use an international shore connection.

4.3.2 Protect an exposure on a vessel as a member of a team, given an assignment, an exposure, a water supply source, approved PPE, fire hose, nozzles, and equipment, so that the exposure is protected.

(A) Requisite Knowledge. Environment, vessel construction, and fire behavior aboard vessel.

(B) Requisite Skills. Participating as part of a team to protect exposures, operating handlines, and master streams.

4.3.3 Access a fire compartment as a member of a team, given a vessel, an incident, and an assignment, so that vessel integrity is maintained, doors and hatches are opened, tools are used, barriers are removed, and the opening is made ready for entry.

(A) Requisite Knowledge. Construction and normal operation of vessel doors and hatches; safety procedures for securing vessel doors and hatches to prevent them from closing behind fire fighters; desired entry methods for various tactical operations, including ventilation, observation, dewatering, and agent application.

(B) Requisite Skills. Identifying and operating vessel doors and hatches.

4.3.4 Collect and report vessel stability information, given a vessel, an incident, an assignment, measuring devices, and standard operating procedures, so that any current or potential hazards to stability are recognized and reported according to procedures.

(A) Requisite Knowledge. Effect of tide, wakes/waves, currents, fire-fighting operations, vessel stability; procedures for reporting the information; vessel draft marking systems.

(B) Requisite Skills. Visualizing the position of a vessel; using internal and external measuring devices or procedures.

4.4 Communications. This duty involves using marine facility and vessel communications equipment to receive and relay verbal information at an incident.

4.4.1 Transmit and receive messages via marine facility and vessel communications equipment, given marine facility and vessel communications equipment and standard operating procedures, so that the information is accurate, complete, clear, and relayed within the time established by the AHJ.

(A) Requisite Knowledge. Marine communications terminology and procedures; proper marine radio frequencies to be used; types and capabilities of vessel communications systems; methods for overcoming language barriers.

(B) Requisite Skills. Operating marine facility and vessel communications systems; operating marine radios.

4.4.2 Locate a marine facility or vessel representative, given a marine facility or vessel and an assignment, so that a line of communication is established between the fire department and the facility or vessel representatives.

(A)* Requisite Knowledge. Locations on a vessel where the ship's master, mate, engineer, or ship's agent can be located; marine frequencies monitored by the vessel master; locations where facility representatives are normally located; methods for contacting representatives after normal working hours.

(B) Requisite Skills. Operating marine facility and vessel communications equipment; boarding the vessel; negotiating or traveling through the facility or vessel.

4.4.3 Retrieve a vessel fire control plan and other specified documents from a cold zone on the vessel, given a vessel, an assignment, a fire control plan and other documents, and any necessary equipment, so that the fire control plan and documents are located and brought to the Incident Commander within the time specified by the AHJ.

(A) Requisite Knowledge. Location(s) on the vessel where the fire control plan and other documents, such as dangerous cargo manifests, trim and stability booklets, cargo-loading manuals, and crew and passenger lists are stored; primary and alternative routes to reach the location(s) where the fire control plan and other documents are stored; understanding of response personnel utilization of the fire control plan; location of the command post.

(B) Requisite Skills. Boarding and negotiating or traveling through the vessel; recognition of the fire control plan and other types of documents.

4.4.4 Transmit and receive messages to vessel personnel and other agencies responding to an incident, given an incident, a list of the other agencies responding to the incident, communications equipment, and standard operating procedures, so that the information is accurate, complete, clear, and relayed within the time established by the AHJ.

(A) Requisite Knowledge. Marine communications terminology and procedures; proper marine radio frequencies to be used; land-based frequencies used in mutual aid situations; other agencies that respond to marine incidents.

(B) Requisite Skills. Operating vessel and mobile communications systems, marine radios, and fire department communications equipment.

4.4.5 Control access to a vessel, given a vessel, an incident, an accountability system, an incident management system, and response personnel, so that all emergency responders boarding the vessel are noted and accounted for.

(A) Requisite Knowledge. The accountability systems used by the AHJ; knowledge of personnel who are authorized to operate at a marine incident.

(B) Requisite Skills. Using accountability tactical worksheets.

4.4.6 Evacuate a vessel or exposure, given an occupied vessel or exposure, an incident, an accountability system, an incident management system, and response personnel, so that all personnel are removed from the hazard area to an area of refuge.

(A) Requisite Knowledge. Vessel evacuation and accountability procedures used by the AHJ.

(B) Requisite Skills. Controlling, directing and moving passengers and crew.

4.5 Fire Control. This duty involves the control and extinguishment of fires on vessels, including fire attack, ventilation, reconnaissance operations, dewatering operations, and rescue of vessel occupants.

4.5.1 Ventilate smoke from a vessel as a member of a team, given a vessel, an incident, an assignment, approved PPE, ventilation equipment, and standard operating procedures, so that equipment is positioned for ventilation, vessel integrity is maintained, a specified ventilation opening is created and left unobstructed, and ventilation barriers are removed.

(A) Requisite Knowledge. Construction principles of a vessel that affect ventilation operations; principles, advantages, limitations, and effects of horizontal, vertical, natural, and forced ventilation; safety considerations when venting a vessel; signs, causes, effects, and prevention of backdrafts; methods of heat transfer and principles of thermal layering on vessels; effects of vessel construction on fire behavior and heat transfer.

(B) Requisite Skills. Transporting, deploying, and operating ventilation equipment on a vessel.

4.5.2 Monitor fire conditions on a vessel as a member of a team, given a vessel, an assignment, an incident, approved PPE, a hose or safety line, a thermal imaging camera, and communications equipment, so that vessel integrity is maintained and changes to fire conditions are reported to the Incident Commander.

(A) Requisite Knowledge. Fire behavior on vessels; procedures for operating a thermal imaging camera; safety procedures for operating in or near fire compartments on vessels.

(B) Requisite Skills. Negotiating vessel ladders, stairs, corridors, and decks; operating in high heat and vision-obscured areas utilizing a thermal imaging camera.

4.5.3 Remove water from a vessel as a member of a team, given a vessel containing water, an assignment, dewatering equipment, and approved PPE, so that hazards are identified, water is removed, and vessel stability is maintained.

(A) Requisite Knowledge. Safety precautions to be taken when working in water; hazards associated with water collecting in various areas of a vessel; hazards associated with water removal in a vessel.

(B) Requisite Skills. Deploying and operating dewatering equipment.

4.5.4* Attack a fire on a vessel as a member of a team, given a vessel, an incident, an assignment, attack line, a secondary line, approved PPE, tools and equipment, so that vessel integrity is maintained, attack line is deployed, access is gained to the fire compartment, effective water application practices are used, and fire is extinguished and overhauled.

(A) Requisite Knowledge. Precautions to be followed when advancing hose lines to a fire on a vessel; principles of exposure protection; types of fuels found on a vessel; types and application of attack lines used on vessels; effective application of fire streams.

(B) Requisite Skills. Advancing charged and uncharged hose lines up and down vessel ladders and stairs, through corridors, and across decks; operating fire streams; and advancing multiple hose lines for fire attack.

4.5.5 Conduct a search and rescue operation for a missing person on a vessel as a member of a team, given a vessel, an incident, an assignment, a vessel fire control plan or other documents, a person, approved PPE, forcible entry tools, and other equipment, so that areas where the person could be located are searched, the person is located and removed, and vessel integrity is maintained.

(A) Requisite Knowledge. Psychological effects of operating in obscured-vision conditions; methods to determine if the area is tenable; primary and secondary search techniques; victim removal methods; likely locations of passengers, crew members, shipyard workers, and contractors.

(B) Requisite Skills. Using forcible entry tools; using self-contained breathing apparatus (SCBA); accessing remote or enclosed compartments; advancing charged and uncharged hose lines up and down vessel ladders and stairs, through corridors, and across decks; and removing victims.

4.5.6 Assist in deploying extinguishing agents other than water, given a vessel, an incident, an assignment, approved PPE, select extinguishing agents, and agent application equipment, so that the need is identified and communicated to the Incident Commander and agent is applied.

(A) Requisite Knowledge. Appropriate extinguishing agents; effects of various extinguishing agents; hazards associated with various extinguishing agents, including onboard systems; sources of bulk extinguishing agents.

(B) Requisite Skills. Reading cargo manifests and technical information on extinguishing agents, deploying and operating extinguishing equipment and agents.

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.1.2 The committee believes that this document specifies the minimum job performance requirements for Marine Fire Fighting for Land-Based Fire Fighters. The committee recognizes that emergency services organizations might have to invest considerable resources to provide the equipment and training needed to perform safely and efficiently. The committee does not mean to imply that organizations with limited resources cannot provide response services, only that the individuals charged with performing responsibilities are qualified to specific levels according to this standard.

A.1.2.3 Organization/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.1.2.5 *See Annex B.*

A.1.2.6 The committee recognizes the importance of formal and continuing education and training programs to ensure Marine Fire Fighting for Land-Based Fire Fighters has 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, or federal agencies as well as 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.1.3.2 *See Annex B.*

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

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

A.3.2.3 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.

A.3.3.5.1 Cold Zone. Personnel operating in the cold zone are not exposed to the products of combustion, hazardous materials, or other inherent hazards created by the incident.

A.4.1.3 The intent of the committee is to define water survival as the ability to survive in the water in approved PPE.

A.4.4.2(A) The importance of having crew members present, especially the Captain or First Officer, and Chief Engineer, cannot be overemphasized. These professionals and the other crew members know the layout of the vessel, the critical points of stability, and how to secure/activate ships' systems. They are an excellent resource for the IC and not to be ignored.

A.4.5.4 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, etc. Respiratory protective equipment should be worn during overhaul and all PPE should be washed down after exposures in any incident involving fire.

Annex B Explanation of the 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 Standards and Concepts of Job Performance Requirements (JPRs). The primary benefit of establishing national professional qualification standards is to provide the public and private sectors with a framework of the job requirements for the fire service. Other benefits include enhancement of the profession, individual as well as organizational growth and development, and standardization of practices.

NFPA professional qualification standards identify the minimum JPRs for specific fire service positions. The standards can be used for implementing training design and evaluation; certifying, measuring and critiquing on-the-job performance; defining hiring practices; and setting organizational policies, procedures, and goals. (Other applications are encouraged.)

Professional qualification standards for a specific job are organized by major areas of responsibility defined as duties. For example, the fire fighter's duties might include fire suppression, rescue, and water supply; and the public fire educator's duties might include education, planning and development, and administration. Duties are major functional areas of responsibility within a job.

The professional qualification standards are written as JPRs. JPRs describe the performance required for a specific job. JPRs are grouped according to the duties of a job. The complete list of JPRs for each duty defines what an individual must be able to do in order to successfully perform that duty. Together, the duties and their JPRs define the job parameters; that is, the professional qualification standard as a whole is a job description.

B.2 Breaking Down the Components of a JPR. The JPR is the assembly of three critical components. *(See Table B.2.)* These components are as follows:

(1) Task that is to be performed
(2) Tools, equipment, or materials that must be provided to successfully complete the task
(3) Evaluation parameters and/or performance outcomes

Table B.2 Example of a JPR

(1) Task	(1) Ventilate a pitched roof
(2) Tools, equipment, or materials	(2) Given an ax, a pike pole, an extension ladder, and a roof ladder
(3) Evaluation parameters and performance outcomes	(3) So that a 4 ft × 4 ft hole is created; all ventilation barriers are removed; ladders are properly positioned for ventilation; ventilation holes are correctly placed; and smoke, heat, and combustion by-products are released from the structure

B.2.1 The Task to Be Performed. The first component is a concise statement of what the person is supposed to do.

B.2.2 Tools, Equipment, or Materials that Must Be Provided to Successfully Complete the Task. This component ensures that all individuals completing the task are given the same minimal tools, equipment, or materials when being evaluated. By listing these items, the performer and evaluator know what must be provided in order to complete the task.

B.2.3 Evaluation Parameters and/or Performance Outcomes. This component defines how well one must perform each task — for both the performer and evaluator. The JPR guides performance outcomes. This portion of the JPR promotes consistency in evaluation by reducing the variables used to gauge performance.

In addition to these three components, the JPR contains requisite knowledge and skills. Just as the term *requisite* suggests, they are the necessary knowledge and skills one must have prior to being able to perform the task. Requisite knowledge and skills are the foundation for task performance.

Once the components and requisites are put together, the JPR might read as follows.

B.2.3.1 Example 1. The Fire Fighter I shall ventilate a pitched roof, given an ax, a pike pole, an extension ladder, and a roof ladder, so that a 4 ft × 4 ft hole is created, all ventilation barriers are removed, ladders are properly positioned for ventilation, and ventilation holes are correctly placed.

(A) Requisite Knowledge. Pitched roof construction, safety considerations with roof ventilation, dangers associated with incorrect ventilation, knowledge of ventilation tools, effects of ventilation on fire growth, smoke movement in structures, signs of backdraft, knowledge of vertical and forced ventilation.

(B) Requisite Skills. Remove roof covering; correctly initiate roof cuts; use the pike pole to clear ventilation barriers; use ax correctly for sounding, cutting, and stripping; position ladders; climb and position self on ladder.

B.2.3.2 Example 2. The fire investigator shall interpret burn patterns, given standard equipment and tools and some structural/content remains, so that each individual pattern is evaluated with respect to the burning characteristics of the material involved.

(A) Requisite Knowledge. Knowledge of fire development and the interrelationship of heat release rate, form, and ignitibility of materials.

(B) Requisite Skill. Interpret the effects of burning characteristics on different types of materials.

B.3 Examples of Potential Uses.

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 must be based on the successful completion of JPRs.

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

Next, the candidate would then be evaluated on completing the JPRs. The candidate would perform the task and be evaluated based on the evaluation parameters, the performance outcomes, or both. This performance-based evaluation can be either practical (for psychomotor skills such as "ventilate a roof") or written (for cognitive skills such as "interpret burn patterns").

Note that psychomotor skills are those physical skills that can be demonstrated or observed. Cognitive skills (or mental skills) cannot be observed but are evaluated on how one completes the task (process oriented) or on the task outcome (product oriented).

Using Example 1, a practical performance-based evaluation would measure the ability to "ventilate a pitched roof." The candidate passes this particular evaluation if the standard was met, that is, if a 4 ft × 4 ft hole was created, all ventilation barriers were removed, ladders were correctly positioned for ventilation, ventilation holes were correctly placed, and smoke, heat, and combustion by-products were released from the structure.

For Example 2, when evaluating the task "interpret burn patterns," the candidate might be given a written assessment in the form of a scenario, photographs, and drawings and then be asked to respond to specific written questions related to the JPR's evaluation parameters.

Remember, when evaluating performance, candidates must be given the tools, equipment, or materials listed in the JPR before they can be correctly evaluated: for example, an ax, a pike pole, an extension ladder, and a roof ladder.

B.3.2 Curriculum Development/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 a specific skill on the job, as opposed to a learning situation. These statements should be converted into instructional objectives with behaviors, conditions, and standards that can be measured within the teaching/learning environment. A JPR that requires a fire fighter to "ventilate a pitched roof" should be converted into a measurable instructional objective for use when teaching the skill. *[See Figure B.3.2(a).]*

A terminal instructional objective might read as follows:

The candidate shall ventilate a pitched roof, given a simulated roof, an ax, a pike pole, an extension ladder, and a roof ladder, so that 100 percent accuracy is attained on a skills checklist. (At a minimum, the skills checklist should include each of the measurement criteria from the JPR.)

Figure B.3.2(b) is a sample checklist for use in evaluating this objective.

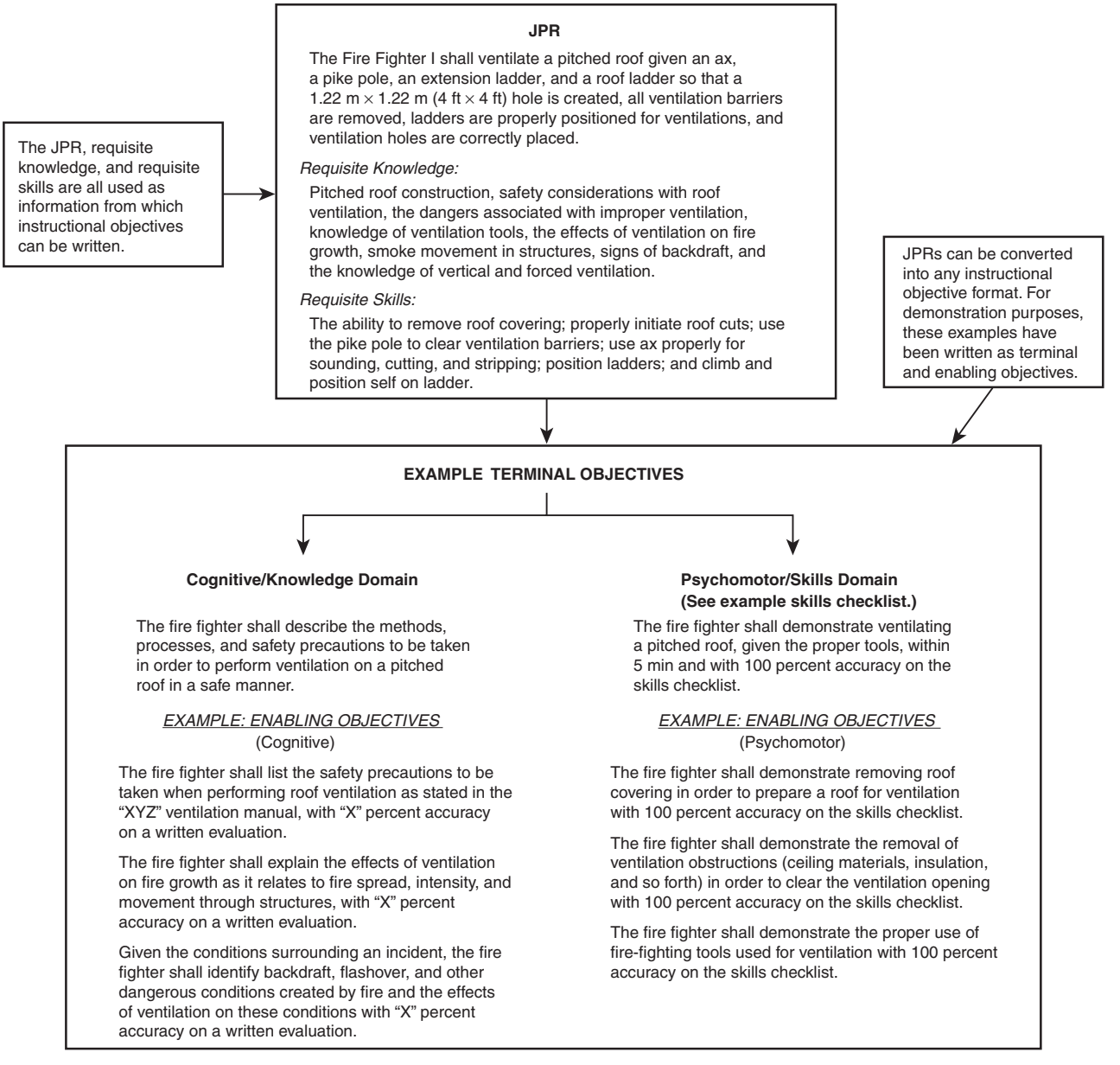

FIGURE B.3.2(a) Converting JPRs into Instructional Objectives.

Objective:
The fire fighter shall demonstrate ventilating a pitched roof, given the proper tools, within 5 min and with 100 percent accuracy on the skills checklist.

1. A 1.22 m × 1.22 m (4 ft × 4 ft) hole was created.	❑ Yes	❑ No
2. All ventilation barriers were removed.	❑ Yes	❑ No
3. Ladders were properly positioned.	❑ Yes	❑ No
4. Ventilation holes were correctly placed (directly over fire, at highest point, etc.)	❑ Yes	❑ No
5. Task completed within 5 min	❑ Yes	❑ No
(Time to complete task: _____)		

FIGURE B.3.2(b) Sample Skills Checklist.

While the differences between job performance requirements and instructional objectives are subtle in appearance, the purpose of each statement differs greatly. JPRs state what is necessary to perform the job in the "real world." Instructional objectives, however, 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 will be able to clarify performance expectations and avoid confusion related to using statements designed for purposes other than teaching. Additionally, instructors will be able to add local/state/regional elements of performance into the standards as intended by the developers.

Requisite skills and knowledge should be converted into enabling objectives. These objectives help to define the course content. The course content should include each of the requisite knowledge and skills. Using Figure B.3.2(b), the enabling objectives are pitched roof construction, safety considerations with roof ventilation, removal of roof covering, proper roof cuts, and so on. These objectives ensure that the course content supports the terminal objective.

It is assumed that the reader is familiar with curriculum development or training design and evaluation.

B.4 Other Uses. While the professional qualifications standards are used principally to guide the development of training and certification programs, there are a number of other potential uses for these documents. Because they are written in JPR terms, they lend themselves well to any area of the profession where a level of performance or expertise must be determined. Such areas might include the following:

(1) *Employee Evaluation/Performance Critiquing.* JPRs 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 when those tasks are completed.

(2) *Establishing Hiring Criteria.* Professional qualifications standards can be used in a number of ways to further the establishment of hiring criteria. The authority having jurisdiction 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 by establishing 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 useful to both the employee and the employer in developing a plan for the individual's growth within the organization. The JPRs and the associated requisite skills and knowledge 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, or career pathing, addresses the efficient placement of people into jobs in response to current needs and anticipated future needs. A career development path can be established for targeted individuals 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 individual's advancement within the organization or profession.

(5) *Establishing Organizational Policies, Procedures, and Goals.* The JPRs can be incorporated into organizational policies, procedures, and goals where employee performance is addressed.

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Annex C Informational References (Reserved)

Index

Sequence of Events for the Standards Development Process

As soon as the current edition is published, a Standard is open for Public Input

Step 1: Input Stage

- Input accepted from the public or other committees for consideration to develop the First Draft
- Committee holds First Draft Meeting to revise Standard (23 weeks)
  Committee(s) with Correlating Committee (10 weeks)
- Committee ballots on First Draft (12 weeks)
  Committee(s) with Correlating Committee (11 weeks)
- Correlating Committee First Draft Meeting (9 weeks)
- Correlating Committee ballots on First Draft (5 weeks)
- First Draft Report posted

Step 2: Comment Stage

- Public Comments accepted on First Draft (10 weeks)
- If Standard does not receive Public Comments and the Committee does not wish to further revise the Standard, the Standard becomes a Consent Standard and is sent directly to the Standards Council for issuance
- Committee holds Second Draft Meeting (21 weeks)
  Committee(s) with Correlating Committee (7 weeks)
- Committee ballots on Second Draft (11 weeks)
  Committee(s) with Correlating Committee (10 weeks)
- Correlating Committee First Draft Meeting (9 weeks)
- Correlating Committee ballots on First Draft (8 weeks)
- Second Draft Report posted

Step 3: Association Technical Meeting

- Notice of Intent to Make a Motion (NITMAM) accepted (5 weeks)
- NITMAMs are reviewed and valid motions are certified for presentation at the Association Technical Meeting
- Consent Standard bypasses Association Technical Meeting and proceeds directly to the Standards Council for issuance
- NFPA membership meets each June at the Association Technical Meeting and acts on Standards with "Certified Amending Motions" (certified NITMAMs)
- Committee(s) and Panel(s) vote on any successful amendments to the Technical Committee Reports made by the NFPA membership at the Association Technical Meeting

Step 4: Council Appeals and Issuance of Standard

- Notification of intent to file an appeal to the Standards Council on Association action must be filed within 20 days of the Association Technical Meeting
- Standards Council decides, based on all evidence, whether or not to issue the Standards or to take other action

Committee Membership Classifications[1,2,3,4]

The following classifications apply to Committee members and represent their principal interest in the activity of the Committee.

1. M *Manufacturer:* A representative of a maker or marketer of a product, assembly, or system, or portion thereof, that is affected by the standard.
2. U *User:* A representative of an entity that is subject to the provisions of the standard or that voluntarily uses the standard.
3. IM *Installer/Maintainer:* A representative of an entity that is in the business of installing or maintaining a product, assembly, or system affected by the standard.
4. L *Labor:* A labor representative or employee concerned with safety in the workplace.
5. RT *Applied Research/Testing Laboratory:* A representative of an independent testing laboratory or independent applied research organization that promulgates and/or enforces standards.
6. E *Enforcing Authority:* A representative of an agency or an organization that promulgates and/or enforces standards.
7. I *Insurance:* A representative of an insurance company, broker, agent, bureau, or inspection agency.
8. C *Consumer:* A person who is or represents the ultimate purchaser of a product, system, or service affected by the standard, but who is not included in (2).
9. SE *Special Expert:* A person not representing (1) through (8) and who has special expertise in the scope of the standard or portion thereof.

NOTE 1: "Standard" connotes code, standard, recommended practice, or guide.

NOTE 2: A representative includes an employee.

NOTE 3: While these classifications will be used by the Standards Council to achieve a balance for Technical Committees, the Standards Council may determine that new classifications of member or unique interests need representation in order to foster the best possible Committee deliberations on any project. In this connection, the Standards Council may make such appointments as it deems appropriate in the public interest, such as the classification of "Utilities" in the National Electrical Code Committee.

NOTE 4: Representatives of subsidiaries of any group are generally considered to have the same classification as the parent organization.