

# **PROPOSED DRAFT**

## **OF**

### **NFPA 1091**

#### **Standard for Traffic Control Incident Management Professional Qualifications 2015 Edition**

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# NFPA 1091

## Standard for

### Traffic Control Incident Management

### Professional Qualifications

### 2015 Edition

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

Changes other than editorial are indicated by a vertical rule beside the paragraph, table, or figure in which the change occurred. These rules are included as an aid to the user in identifying changes from the previous edition. Where one or more complete paragraphs have been deleted, the deletion is indicated by a bullet (•) between the paragraphs that remain.

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 C. Editorial changes to extracted material consist of revising references to an appropriate division in this document or the inclusion of the document number with the division number when the reference is to the original document. 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 C.

## Chapter 1 Administration

### 1.1 Scope.

This standard identifies the minimum job performance requirements (JPRs) necessary to perform temporary traffic control duties at emergency incidents on, or near an active roadway.

### 1.2 Purpose.

The purpose of this standard shall be to ensure that persons meet the requirements of this standard who are engaged in traffic control incident management. It shall not be the intent of the standard to restrict any jurisdiction from exceeding these requirements.

### 1.3 General.

**1.3.1** All of the standards for any level of traffic control incident management shall be performed in accordance with recognized practices and procedures or as defined by an accepted authority.

**1.3.2** The JPRs shall be accomplished in accordance with the requirements of the authority having jurisdiction (AHJ) and NFPA 1500, Standard on Fire Department Occupational Safety and Health Program.

**1.3.3** It is not required for the objectives to be mastered in the order in which they appear. The local or state/provincial training program shall establish both the instructional priority and the program content to prepare individuals to meet the performance objectives of this standard.

**1.3.4\*** 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 individuals to meet the JPRs of this standard.

**1.3.5\*** Performance of each requirement of this standard shall be evaluated by individuals approved by the AHJ.

**1.3.6** Emergency first responder traffic personnel shall meet all the objectives for Traffic Control Incident Management before being qualified at the Traffic Control Incident Management level.

**1.3.7** 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 AHJ.

**1.3.8\*** Traffic control incident management personnel shall remain current with traffic control incident management practices, and applicable standards, and demonstrate competency on an annual basis.

**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, as these values can be approximate. (See Table 1.4.)

**Table 1.4 SI Conversions**

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

## 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*, 2008 edition.

NFPA 1002, *Standard for Fire Apparatus Driver/Operator Professional Qualifications*, 2009 edition.

NFPA 1006, *Standard for Technical Rescuer Professional Qualifications*, 2008 edition.

NFPA 1021, *Standard for Fire Officer Professional Qualifications*, 2009 edition.

NFPA 1026, *Standard for Incident Management Personnel Professional Qualifications*, 2009 edition.

NFPA 1500, *Standard on Fire Department Occupational Safety and Health Program*, 2007 edition.

NFPA 1521, *Standard for Fire Department Safety Officer*, 2008 edition.

NFPA 1561, *Standard on Emergency Services Incident Management System*, 2008 edition.

NFPA 1901, *Standard for Automotive Fire Apparatus*, 2009 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 System*, 2010 edition.

NFPA 1002, *Standard for Fire Apparatus Driver/Operator Professional Qualifications*, 2009 edition.

NFPA 1031, *Standard for Professional Qualifications for Fire Inspector and Plan Examiner*, 2003 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 Road Tunnel.** An enclosed roadway for motor vehicles traffic with vehicle access that is limited to portals. [502, 2011]

**3.2.5\* Roadway.** Any public or private street, including bridges and rights of way. [1141, 2008]

### **3.3 General Definitions.**

**3.3.1\* Fire police officer.** An individual officially deployed to provide scene security or direct traffic.

**3.3.2 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, 2006]

**3.3.3 Requisite Knowledge.** Fundamental knowledge one must have in order to perform a specific task. [1031, 2003]

**3.3.4 Requisite Skills.** The essential skills one must have in order to perform a specific task. [1031, 2003]

**3.3.5 Safe-Positioned.** The positioning of emergency vehicles at an incident in a manner that attempts to protect both the responders performing their duties and road users traveling through the incident scene, while minimizing, to the extent practical, disruption of the adjacent traffic flow. (2009 MUTCD)

**3.3.6 Task.** A specific job behavior or activity. [1002, 2003]

**3.3.7\* Temporary Traffic Control (TTC) device.** The primary functions at a traffic incident management area are to inform road users of the incident and to provide guidance information on the path to follow through the incident area

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

**3.3.9\* Traffic Incident Management Area.** An area of a highway where temporary traffic controls are installed, as authorized by a public authority or the official having jurisdiction of the roadway.

## Chapter 4 General

### 4.1\* General Requirements.

**4.1.1** Because traffic control incident management assignments are inherently dangerous and traffic control incident management personnel are frequently required to perform rigorous activities in adverse conditions, regional and national safety standards shall be included in agency policies and procedures.

**4.1.2** Traffic control incident management personnel shall complete all activities in the safest possible manner and shall follow national, federal, state, provincial, and local safety standards as they apply to the traffic control incident management.

### 4.2\* Entrance Requirements.

Before beginning training activities or engaging in rescue operations, traffic control incident management personnel shall comply with the following requirements:

- (1) Age requirement established by the AHJ
- (2) Minimum educational requirements established by the AHJ
- (3) Minimum requirements for hazardous material incident and contact control training for entry-level personnel, validated by the AHJ

**4.2.1 General.** For qualification to Traffic Control Incident Management standard, the candidate shall meet the general knowledge requirements in 4.1.1, the general skill requirements in 5.1 and the job performance requirements (JPRs) defined in Sections 5.2 through 5.13.

**4.2.2 Certification.** To be qualified traffic control incident management professional qualifications, the candidate shall meet the requirements NFPA 1091, *Standard for Traffic Control Incident Management* as defined in this standard.

### 4.3 Safety.

**4.3.1** Candidates shall safely complete job performance requirements in accordance with recognized practices and procedures.

**4.3.2** Candidates also shall meet all applicable occupational safety and health requirements of the jurisdiction.

### 4.4 Job Performance Requirements.

**4.4.1** Job performance requirements defined by this standard shall be evaluated by individuals approved by the authority having jurisdiction.

**4.4.2** Job performance requirements shall not be required to be mastered in the order in which they appear.

**4.4.3** The local, state/provincial, or federal training program shall establish the instructional priority and the training program content to prepare individuals to meet the job performance requirements of this standard.

#### **4.5 Maintenance of Skills and Knowledge.**

**4.5.1** Personnel who could be assigned Traffic Control Incident Management shall remain current with traffic control incident management technology, traffic control incident management practices, and applicable standards as determined by the AHJ.

### **Chapter 5 Traffic Control Incident Management**

#### **5.1 General Requirements.**

**5.1.1 Qualifications.** To be qualified as Traffic Control Incident Management personnel, the candidate shall meet each of the job performance requirements defined in this chapter.

**5.1.1.1 Function.** The primary function of the Traffic Control Incident Management personnel shall be to execute traffic control incident management activities.

**5.2\*** Demonstrate the appropriate use of personal protective equipment, warning signals, temporary traffic control devices and vehicle lighting, given a roadway incident, vehicle, policies and procedures, personal protective equipment and temporary traffic control devices so that the responder is protected, traffic is controlled, personal protective equipment is donned in accordance with AHJ, temporary traffic control (TTC) devices and vehicle lighting is deployed.

**(A) Requisite Knowledge.** Principles of temporary traffic control, traffic incident management area, policies and procedures, personal protective equipment, temporary traffic control devices, types and applications, driver reactions, hazards of traffic control, traffic patterns.

**(B) Requisite Skill.** Personal protective equipment selection and usage, temporary traffic control devices selection and placement, flagging operations, sign placement, vehicle warning systems.

**5.3** Conduct an initial size-up and establish command of a roadway incident, given procedures and policies, a roadway incident, and communication devices, so that on approach and arrival potential hazards and needed resources are identified, and communicated to responders and dispatch along with the location of the incident.

**(A)\* Requisite Knowledge.** Policies and procedures, recognizes hazardous situations, size-up, roadway types and lane designations, roadway geometrics, basic traffic control concepts, pre-incident plans, response agencies roles and responsibilities, telecommunication procedures, personal protective equipment, and ICS.

**(B) Requisite Skill.** The ability to size-up, communicate orally, operate telecommunication devices, and don personal protective equipment.

**5.4\*** Position vehicle to provide a traffic incident management area at a roadway incident, given

vehicle, and a roadway incident, so that the vehicle is safe-positioned.

**(A) Requisite Knowledge.** Appropriate vehicle positions for protecting roadway incident scenes, knowledge of how responders enter and exit their vehicles, how responders retrieve equipment from the vehicles, and responders perform their tasks at a roadway incident scene, ability to estimate the length of time that will be required for incident mitigation.

**(B) Requisite Skills.** Operate the vehicle in the correct manner, position vehicle to protect responders and civilians at a roadway incident scene, position a vehicle so it does not excessively impede traffic flow, provides access for later arriving vehicles, and reduces the likelihood of secondary incidents.

**5.5** Establish a traffic incident management area at a roadway incident, given a roadway incident, vehicles, temporary traffic control (TTC) devices, and personal protective equipment, so that a traffic incident management area is established to protect responders and move traffic through and around the incident.

**(A) Requisite Knowledge.** Types and uses of available temporary traffic control devices, rules and regulations, policies and procedures, basic traffic control concepts, road and lane designations, traffic pattern and flow, time required for establishing zone, personal protective equipment, an Incident Command System, telecommunication procedures, procedures for safe work at roadway incident.

**(B) Requisite Skills.** Communicate orally, operate telecommunication device, deploy temporary traffic control (TTC) devices, don personal protective equipment used at roadway incidents.

**5.6** Create a traffic incident management area at a roadway incident, given an incident, rules and regulations, policies and procedures, vehicles, temporary traffic control (TTC) devices, so that the traffic incident management area is established.

**(A) Requisite Knowledge.** Roles and responsibilities of available and responding resources, temporary traffic control (TTC) devices, rules and regulations, policies and procedures, temporary traffic control concepts, roadway types and lane designations, telecommunication procedures.

**(B) Requisite Skills.** Communicate orally, operate telecommunication device, deployment techniques for available temporary traffic control (TTC) devices, rules and regulations, policies and procedures, retrieving temporary traffic control (TTC) devices when terminating an incident.

**5.7** Establish advance warning for the roadway incident given an incident, rules and regulations, policies and procedures, vehicles, temporary traffic control (TTC) devices, so that advance warning is established for vehicles approaching the traffic queue to prevent secondary incidents.

**(A) Requisite Knowledge.** Roles and responsibilities of available and responding resources, types of temporary traffic control (TTC) devices, rules and regulations, policies and procedures,

temporary traffic control concepts, roadway types and lane designations, telecommunication procedures.

**(B) Requisite Skills.** Communicate orally, operate telecommunication device, deployment techniques for advanced warning temporary traffic control (TTC) devices.

**5.8** Operate in the traffic incident management area, given an established temporary traffic control (TTC) area, personal protective equipment, a vehicle, and an assignment, so that personal protective equipment is worn, personnel enter or exit the vehicle and work within traffic incident management area with due regard for moving traffic and the assigned tasks are performed.

**(A) Requisite Knowledge.** Policies and procedures, regulations and rules, pre-incident plan, telecommunication procedures, personal protective equipment, types of temporary traffic control (TTC) devices and their uses, procedures for entering and exiting a vehicle.

**(B) Requisite Skills.** The ability to communicate orally, operate telecommunication devices, don personal protective equipment, entering and exiting a vehicle, work within a traffic incident management area.

**5.9** Operate as a member of a team within an ICS/unified command structure at a roadway incident, given a roadway incident and an assignment, so that the assignment is accomplished, accountability is maintained, and safety policies are followed.

**(A) Requisite Knowledge.** Policies and regulations, rules and procedures, their role within the Incident Command System, ICS/unified command structure, pre-incident plans, personnel accountability system, telecommunication procedures.

**(B) Requisite Skills.** Perform assigned duties within the ICS/unified command structure, communicate orally, operate telecommunication devices, work as a team member, follow safety policies, and accountability procedures.

**5.10** Manage non-authorized persons found near or within a traffic incident management area, given an incident scene, non-authorized persons, temporary traffic control (TTC) devices, local policies and procedures for entering or exiting a traffic incident management area, so that non-authorized persons are identified, denied access, and directed to a safe location.

**(A) Requisite Knowledge.** Scene and perimeter control techniques, limited access procedures for non-authorized personnel and victims, pre-incident plans, policies and procedures.

**(B) Requisite Skills.** Use of equipment and techniques to control access to and exit from the roadway incident scene, implement and operate an accountability system, communicate orally, operate telecommunication devices.

**5.11** Assess the effectiveness of ongoing temporary traffic control measures at a roadway incident, given a traffic incident management area, a traffic control problem, and an ICS/unified command structure, so that traffic control problems are identified and reported through the chain

of command.

**(A) Requisite Knowledge.** Policies and procedures, uses of temporary traffic control devices, traffic control concepts, change in work environment, telecommunication procedures, ICS/unified command structure.

**(B) Requisite Skills.** The ability to communicate orally, operate communication devices.

**5.12** Adapt the traffic incident management area in response to a special hazard, given an existing roadway incident, special hazard, policies and procedures, personal protective equipment, temporary traffic control (TTC) devices, so that protection is maintained, the special hazard is recognized, addressed, and operations are continued.

**(A)\* Requisite Knowledge.** Types of special hazards threats to traffic incident management area, policies and procedures, accountability, warning signals.

**(B) Requisite Skills.** Communicate warning signals, alter response, control and coordinate responder safety, maintain and adjust traffic incident management area, augmenting and adjusting temporary traffic control (TTC) devices.

**5.13** Perform traffic control incident management area demobilization functions, given a roadway incident, orders to demobilize, and temporary traffic control (TTC) devices, so that safety and communication between all responders is maintained, all temporary traffic control (TTC) devices are removed, and all resources and personnel are cleared from the scene.

**(A) Requisite Knowledge.** Traffic incident management area demobilization concepts, working as a team, temporary traffic control (TTC) devices, policies and procedures, telecommunication procedures.

**(B) Requisite Skills.** Communicate orally, operate telecommunication devices, demobilize traffic incident management area in a manner that protects response workers and motorists, operate within a team, remove all temporary traffic control (TTC) devices and resources from the incident scene.

## **Annex A Explanatory Material**

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

**A.1.3.4** See Annex B for additional information regarding the use of JPRs for training and evaluation.

**A.1.3.5** It is recommended, where practical, that evaluators be individuals who were not directly involved as instructors for the requirement being evaluated.

**A.1.3.8** Ongoing training and continuing education are necessary to ensure that traffic control incident management personnel remain current in the ever-changing field of traffic control incident management. Attending workshops and seminars, reading professional publications, and participating in refresher training are ways in which traffic control incident management personnel can update their knowledge and skills. Proficiency in current traffic control incident management practices can be demonstrated by achieving and maintaining certification through a nationally recognized certifying body.

**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.

**A3.2.4 Roadway.** It is the intent of the Committee to recognize all classifications, types, and descriptions of roadways.

**A.3.3.1** An individual serving in accordance with State or local law as an officially recognized or designated member of a legally organized public safety agency. Deployment could include response to any fire drill, fire call, or other fire, rescue, or police emergency; or at a planned special event.

**A.3.3.2** Alerting road users and establishing a well defined path to guide road users through the incident area will serve to protect the incident responders and those involved in working at the incident scene and will aid in moving road users expeditiously past or around the traffic incident,

will reduce the likelihood of secondary traffic crashes, and will preclude unnecessary use of the surrounding local road system. Examples include a stalled vehicle blocking a lane, a traffic crash blocking the traveled way, a hazardous material spill along a highway, and natural disasters such as floods and severe storm damage.

**A.3.3.3** In response to a road user incident, natural disaster, hazardous material spill, or other unplanned incident. It is a type of TTC zone and extends from the first warning device (such as a sign, light, or cone) to the last TTC device or to a point where vehicles return to the original lane alignment and are clear of the incident.

**A.4.1** All traffic control incident management activities should be carried out in the safest possible manner, including the consideration that all risks taken are to the benefit of the operation. Traffic control incident management skills require a physical activity, coordination, and operational planning and a strong knowledge of all applicable protocols. It is for this reason that entrance requirements are outlined in Section 4.2 and clarified in A.4.2.

**A.4.2** The following list elaborates these requirements:

- (1) *Age Requirements.* The AHJ is empowered to set minimum and maximum age requirements. Due to the fact that traffic control incident management requires a level of maturity inherent to the traffic control incident management environment, it is recommended that the minimum age required to begin training as traffic control incident management personnel be set at 18 years.
- (2) *Medical Requirements.* The AHJ should establish medical requirements for initiation of training and continued participation as a technical rescuer. It is recommended that the AHJ adopt NFPA 1582, *Standard on Comprehensive Occupational Medical Program for Fire Departments*, in whole or in part as part of their own standard development process.
- (3) *Minimum Physical Fitness.* Traffic control incident management operations involve activities that pose great physical and mental challenges. Traffic control incident management is an inherently demanding activity requiring personnel to perform challenging activities in a high-stress environment.
- (4) *Emergency Medical Care Training.* Prior to beginning training as traffic control incident management personnel, a minimum medical training requirement should be met.
- (5) *Educational Requirements.* Because traffic control incident management personnel can be required to read and comprehend standards and procedures, prepare written reports, and understand principles of mechanical advantage, structural engineering, and other related disciplines, it is recommended that the technical rescuer be at minimum a high school graduate.
- (6) *Training.* People having the potential for encountering hazardous materials on an incident scene should be trained to recognize the hazard and implement exposure and control methods.

**A5.2 Warning Signals.** It is the intent of the Committee to recognize whistles, air horn, hand signals, audible, or other manual devices that could be used by personnel to alert other personnel at the scene of impending danger. Vehicle lighting includes headlights, floodlights, warning lights, directional devices, based on AHJ.

**A5.3(A) Roadway Geometrics.** Roadway characteristics describing items such as vertical curves, horizontal curves, frequent and abrupt changes such as lane drops, lane narrowing, roadway transitions that can cause rapid maneuvers or other characteristics that could potentially affect the establishment of traffic incident management area.

**A5.13 Special Hazard.** It is the intent of the Committee for the responder to recognize different types of hazards that may be encountered. Special hazards may include night time, water supply, weather, helicopter operations, herding livestock, hazardous materials, railroad crossings and schedules, tunnels, draw bridges, etc.

## **Annex B Explanation of the Standard and Concepts of JPRs**

*This Annex is not a part of the recommendations of this NFPA document but is included for informational purposes only.*

### **B.1 Explanation of the Standard and Concepts of Job Performance Requirements (JPRs).**

The primary benefit of establishing national professional qualification standards is to provide both 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 qualifications standards identify the minimum JPRs for specific fire service positions. The standards can be used for training design and evaluation, certification, measuring and critiquing on-the-job performance, defining hiring practices, and setting organizational policies, procedures, and goals. (Other applications are encouraged.)

Professional qualifications 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 qualifications 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 standard as a whole is a description of a job.

### **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 1.22 m × 1.22 m (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, brief 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 the evaluator. The JPR guides performance towards successful completion by identifying evaluation parameters and/or 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, these 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 1.22 m × 1.22 m (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, the dangers associated with improper ventilation, knowledge of ventilation tools, the effects of ventilation on fire growth, smoke movement in structures, signs of backdraft, and the knowledge of vertical and forced ventilation.

**(B) Requisite Skills.** The ability to remove roof covering; properly initiate roof cuts; use the pike pole to clear ventilation barriers; use ax properly for sounding, cutting, and stripping; position ladders; and 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 Skills.** The ability to 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 JPR evaluation. Verification might be accomplished through documentation review or testing.

Next, the candidate would 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 rather evaluated on how one completes the task (process oriented) or the task outcome (product oriented).

Using Example 1, a practical performance-based evaluation would measure one’s ability to “ventilate a pitched roof.” The candidate passes this particular evaluation if the standard was met — that is, a 1.22 m × 1.22 m (4 ft × 4 ft) hole was created; all ventilation barriers were removed; ladders were properly positioned for ventilation; ventilation holes were correctly placed; and smoke, heat, and combustion by-products were released from the structure.

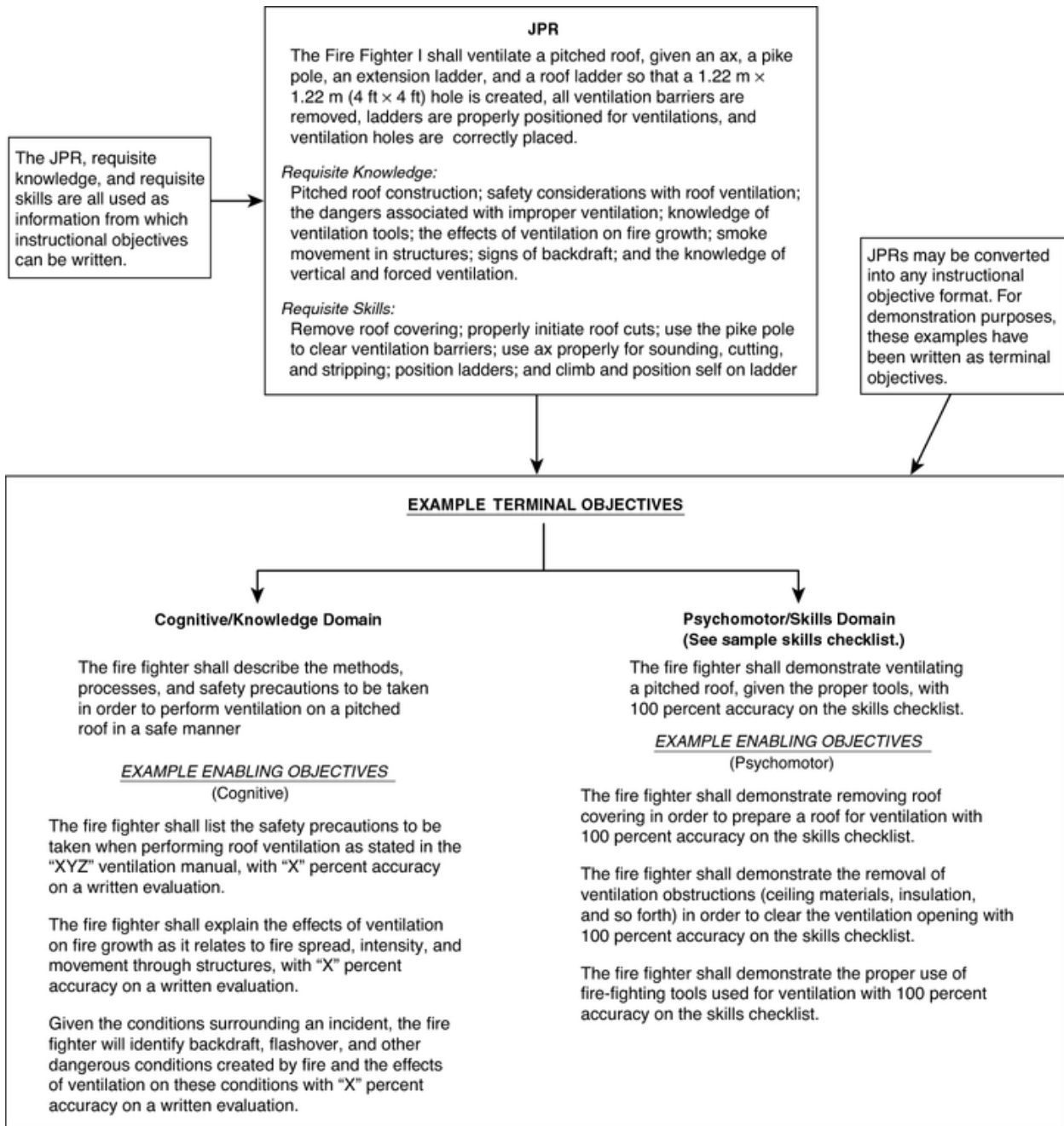
For Example 2, when evaluating the task “interpret burn patterns,” the candidate could be given a written assessment in the form of a scenario, photographs, and drawings and then be asked to respond to specific written questions related to the JPR’s evaluation parameters.

Remember, when evaluating performance, you must give the person the tools, equipment, or materials listed in the JPRs — for example, an ax, a pike pole, an extension ladder, and a roof ladder — before he or she can be properly evaluated.

**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 specific skill(s) 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).]

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

Using Example 1, a terminal instructional objective might read as follows:

The learner will 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 criterion from the JPRs.)

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

<b>OBJECTIVE:</b> The fire fighter shall demonstrate ventilating a pitched roof, given the proper tools, within 5 minutes and with 100 percent accuracy on the skills checklist.	
<b>YES</b>	<b>NO</b>
<input type="checkbox"/>	<input type="checkbox"/> 1. 1.22 m × 1.22 m (4 ft × 4 ft) hole was created.
<input type="checkbox"/>	<input type="checkbox"/> 2. All ventilation barriers were removed.
<input type="checkbox"/>	<input type="checkbox"/> 3. Ladders were properly positioned.
<input type="checkbox"/>	<input type="checkbox"/> 4. Ventilation holes were correctly placed (directly over fire, highest point, and so forth).
<input type="checkbox"/>	<input type="checkbox"/> 5. Task completed within validated time parameters established by the AHJ. (Time to complete task: _____.)

**FIGURE B.3.2(b) Sample Skills Checklist.**

While the differences between JPRs 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 help to define the course content. The course content would include each of the requisite knowledge and skills. Using the above example, the enabling objectives would be pitched roof construction, safety considerations with roof ventilation, removal of roof covering, properly initiated roof cuts, and so on. This ensures that the course content supports the terminal objective.

Note that 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 principally used to guide the development of training and certification programs, there are a number of other potential uses for the documents. Because the documents 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. These areas might include the following:

(1) Employee Evaluation/Performance Critiquing. The 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. The professional qualifications standards can be used in a number of ways to further the establishment of hiring criteria. The 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 by establishing essential minimal tasks and the related evaluation criteria. An added benefit is that individuals interested in employment can work towards 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 knowledge and skills can be used as a guide to determine additional training and education required for the employee to master his or her job or profession.

(4) **Succession Planning.** Succession planning or career path 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.

## **Annex C Informational References**

### **C.1 Referenced Publications.**

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

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

**C.1.2 U.S. Government Publications.** U.S. Government Printing Office, Washington, DC 20402. Manual on Uniform Traffic Control Devices, U.S. Department of Transportation.

**C.1.3 Other Publications. (Reserved)**

**C.2 Informational References. (Reserved)**

**C.3 References for Extracts in Informational Sections. (Reserved)**