NFPA® 1521

Standard for Fire Department Safety Officer

2008 Edition



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

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NFPA 1521

Standard for

Fire Department Safety Officer

2008 Edition

This edition of NFPA 1521, *Standard for Fire Department Safety Officer*, was prepared by the Technical Committee on Fire Service Ocupational Safety and Health. It was issued by the Standards Council on June 4, 2007, with an effective date of June 24, 2007, and supersedes all previous editions. This edition of NFPA 1521 was approved as an American National Standard on June 24, 2007.

Origin and Development of NFPA 1521

The first edition of the *Standard for Fire Department Safety Officer* was issued in 1977 as NFPA 1501 and established a standard for a new role in the fire service. Very few fire departments had safety officers, and their role was not well defined. The second edition was issued in 1987 to coincide with and support a new document, NFPA 1500, *Standard on Fire Department Occupational Safety and Health Program*. The 1987 edition of NFPA 1501 provided more specific direction on the duties, responsibilities, and qualifications for the position based on the experience and insight gained since the first edition.

In 1992, the document was redesignated as NFPA 1521, and the concept of assistants serving as safety officers under a fire department safety officer was introduced, recognizing that the safety job requires many persons operating in the system. The text was revised in several areas to emphasize the role of the fire department safety officer as the program manager.

The 1997 edition focused on differentiating between the incident safety officer (ISO) and the health and safety officer (HSO) in response to questions concerning the roles, responsibilities, qualifications, and training required for each of these positions. That edition also showed how each position fit into a fire department's risk management plan, and it included sample forms for fire station inspections.

The 2002 edition was a reconfirmation of the standard with editorial changes to bring the document in line with the *Manual of Style for NFPA Technical Committee Documents*.

The 2008 edition updates the standard to reflect current practices in organizing and appointing a health and safety officer within a fire department. The qualifications and functions of both a health and safety officer and an incident safety officer are updated to reflect both current requirements and best practices. A role is defined for a person with special technical expertise to serve as an assistant to the incident safety officer when the technical complexities of the incident are beyond the expertise of an incident safety officer.

In this 2008 edition, the requirement for the health and safety officer to be a fire department officer has been deleted, as this position is sometimes filled by a person who is not a uniformed member of the fire department. The requirement for the incident safety officer to be a fire department officer has also changed to allow persons who have certain professional qualifications to fill that role even if they are not appointed as fire department officers.

Annex material has been added to assist the incident safety officer in writing a post-incident analysis (PIA) report, along with examples of forms that can be used to track the items the ISO is responsible for at the incident scene.

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(Alt. to G. P. Benarick)

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David A. Love, Jr., Volunteer Firemen's Insurance Services, Inc., PA [I]
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Denis M. Murphy, Nassau County Fire Service Academy, NY [U]
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Joseph W. Rivera, U.S. Air Force, FL [U]
David Ross, Toronto Fire Services, Canada [E]
Rep. Fire Department Safety Officers Association
Mario D. Rueda, Los Angeles City Fire Department, CA [U]
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Donald F. Stewart, Medocracy Inc./Fairfax County Fire & Rescue, VA [E]
Philip C. Stittleburg, LaFarge Fire Department, WI [U]
Rep. National Volunteer Fire Council
Teresa Wann, Santa Ana College, CA [SE]
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Kim D. Zagaris, State of California, CA [E]

Alternates

Janice C. Bradley, International Safety Equipment Association, VA [M]
(Alt. to P. Eckhardt)
Michael L. Finkelman, East Meadow, NY [U]
(Alt. to D. M. Murphy)
Craig A. Fry, Los Angeles City Fire Department, CA [U]
(Alt. to M. D. Rueda)
Al H. Gillespie, North Las Vegas Fire Department, NV [E]
(Alt. to I. D. Daniels)
John Granby, Lion Apparel, Inc., OH [M]
(Alt. to D. Aldridge)
Allen S. Hay, Fire Department City of New York, NY [U]
(Alt. to G. L. Maier III)
Thomas Healy, Daisy Mountain Fire District, AZ [E]
(Alt. to S. L. Kreis)
James Johannessen, Underwriters Laboratories Inc., PA [RT]
(Alt. to T. Hillenbrand)
Sandra S. Kirkwood, Las Vegas Fire/Rescue Department, NV [SE]
(Alt. to T. Wann)
Robert L. McLeod III, City of Chandler Fire Department, AZ [E]
(Alt. to D. Ross)
Robert P. Murgallis, U.S. Department of Homeland Security, MD [SE]
(Alt. to H. E. Wood)
Gary L. Neilson, Reno Fire Department, NV [U]
(Alt. to T. DiAnda Lopes)
Michael W. Smith, Nevada Division of Forestry, NV [U]
(Alt. to P. C. Stittleburg)
Fred C. Terryn, U.S. Air Force, FL [U]
(Alt. to J. W. Rivera)
Michael L. Young, Volunteer Firemen's Insurance Services, Inc., PA [I]
(Alt. to D. A. Love, Jr.)

Nonvoting

Matthew I. Chibbaro, U.S. Department of Labor, DC [E]
Thomas R. Hales, U.S. Department of Health and Human Services, OH [RT]
Andrew Levinson, U.S. Department of Labor, DC [E]
(Alt. to M. I. Chibbaro)
Mark F. McFall, U.S. Department of Health and Human Services, WV [RT]
(Alt. to T. R. Hales)

Carl E. Peterson, NFPA Staff Liaison

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Committee Scope: This Committee shall have primary responsibility for documents on occupational safety and health in the working environment of the fire service. The Committee shall also have responsibility for documents related to medical requirements for fire fighters.

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A reference in brackets [ ] following a section or paragraph indicates material that has been extracted from another NFPA document. As an aid to the user, the complete title and edition of the source documents for extracts in mandatory sections of the document are given in Chapter 2 and those for extracts in informational sections are given in Annex D. 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 D.

Chapter 1 Administration

1.1 Scope. This standard contains minimum requirements for the assignment, duties, and responsibilities of a health and safety officer (HSO) and an incident safety officer (ISO) for a fire department.

1.2 Purpose.

1.2.1 The purpose of this standard is to specify the minimum requirements for a fire department health and safety officer and an incident safety officer.

1.2.2 Compliance with this standard is intended to further define the qualifications, authorities, and functions of the health and safety officer and the incident safety officer as referenced in NFPA 1500, *Standard on Fire Department Occupational Safety and Health Program.*

1.2.3 Nothing herein is intended to restrict any jurisdiction from exceeding the minimum requirements of this standard.

1.3 Application.

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

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

1.4 Equivalency.

1.4.1* The authority having jurisdiction (AHJ) is permitted to approve an equivalent level of qualifications for the requirements specified in Sections 4.2 and 4.5 of this standard.

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

Chapter 2 Referenced Publications

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

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

NFPA 472, *Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents,* 2008 edition.

NFPA 1006, *Standard for Rescue Technician Professional Qualifications,* 2003 edition.

NFPA 1021, *Standard for Fire Officer Professional Qualifications,* 2003 edition.

NFPA 1403, *Standard on Live Fire Training Evolutions,* 2007 edition.

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

NFPA 1561, *Standard on Emergency Services Incident Management System,* 2005 edition.

NFPA 1581, *Standard on Fire Department Infection Control Program,* 2005 edition.

2.3 Other Publications.

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

Title 29, Code of Federal Regulations, Part 1910.1030, "Occupational Exposure to Bloodborne Pathogens," December 6, 1991, U.S. Government Printing Office, Washington, DC 20402.

2.4 References for Extracts in Mandatory Sections.

NFPA 472, *Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents,* 2008 edition.

NFPA 600, *Standard on Industrial Fire Brigades,* 2005 edition.

NFPA 1002, *Standard for Fire Apparatus Driver/Operator Professional Qualifications,* 2003 edition.

NFPA 1451, *Standard for a Fire Service Vehicle Operations Training Program,* 2007 edition.

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

NFPA 1561, *Standard on Emergency Services Incident Management System,* 2005 edition.

NFPA 1581, *Standard on Fire Department Infection Control Program,* 2005 edition.

NFPA 1670, *Standard on Operations and Training for Technical Search and Rescue Incidents,* 2004 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,* 2004 edition.

NFPA 1901, *Standard for Automotive Fire Apparatus,* 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

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be defined using their ordinarily accepted meanings within the context in which they are used. *Merriam-Webster's Collegiate Dictionary,* 11th edition, shall be the source for the ordinarily accepted meaning.

3.2 NFPA Official Definitions.

3.2.1* Approved. Acceptable to the authority having jurisdiction.

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

3.2.3 Shall. Indicates a mandatory requirement.

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

3.3 General Definitions.

3.3.1 Accident. An unplanned occurrence, which results in a loss such as unintended injury, illness, death, property damage, or damage to the environment.

3.3.2 Active Cooling. See 3.3.6.1.

3.3.3 Assistant. Title for subordinates of the command staff positions; this title indicates a level of technical capability, qualifications, and responsibility subordinate to the primary functions. *(See also 3.3.44.1.1, Assistant Health and Safety Officer, and 3.3.44.2.1, Assistant Incident Safety Officer.)* [**1561**, 2005]

3.3.4 Cold Zone. See 3.3.5.1.

3.3.5 Control Zones. The areas at an incident that are designated based upon safety and the degree of hazard. [**1500**, 2007]

3.3.5.1 ***Cold Zone.*** The control zone of an incident that contains the command post and such other support functions as are deemed necessary to control the incident. [**1500**, 2007]

3.3.5.2 ***Hot Zone.*** The control zone immediately surrounding a hazardous area, which extends far enough to prevent adverse effects to personnel outside the zone. [**1500**, 2007]

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

3.3.5.4 ***Warm Zone.*** The control zone outside the hot zone where personnel and equipment decontamination and hot zone support takes place. [**1500**, 2007]

3.3.6 Cooling.

3.3.6.1 ***Active Cooling.*** The process of using external methods or devices (e.g., hand and forearm immersion, misting fans, ice vests) to reduce elevated core body temperature.

3.3.6.2 ***Passive Cooling.*** The process of using natural evaporative cooling (e.g., sweating, doffing personal protective equipment) to reduce elevated core body temperature.

3.3.7 Emergency Incident. Any situation to which the emergency services organization responds to deliver emergency services, including rescue, fire suppression, emergency medical care, special operations, law enforcement, and other forms of hazard control and mitigation. [**1561**, 2005]

3.3.8 Emergency Medical Care. The provision of treatment to patients, including first aid, cardiopulmonary resuscitation, basic life support (first responder or EMT level), advanced life support (paramedic level), and other medical procedures that occur prior to arrival at a hospital or other health care facility. [**1581**, 2005]

3.3.9 Emergency Operations. Activities of the fire department relating to rescue, fire suppression, emergency medical care, and special operations, including response to the scene of the incident and all functions performed at the scene. [**1500**, 2007]

3.3.10 Fire Apparatus. A vehicle designed to be used under emergency conditions to transport personnel and equipment, and to support the suppression of fires and mitigation of other hazardous situations. [**1901**, 2003]

3.3.11 Fire Chief. The highest ranking officer in charge of a fire department. [**1710**, 2004]

3.3.12* Fire Department. An organization providing rescue, fire suppression, emergency medical care, special operations, and related services.

3.3.13* Fire Department Facility. Any building or area owned, operated, occupied, or used by a fire department on a routine basis. [**1500**, 2007]

3.3.14 Fire Department Member. See 3.3.31, Member.

3.3.15 Fire Department Safety Officer. See 3.3.44, Safety Officer.

3.3.16 Fire Department Vehicle. Any vehicle, including fire apparatus, operated by a fire department. [**1002**, 2003]

3.3.17* Fire Suppression. The activities involved in controlling and extinguishing fires. [**1500**, 2007]

3.3.18* Hazard. A condition that presents the potential for harm or damage to people, property, or the environment.

3.3.19 Health and Safety Management System. A management system that integrates and directs the risk management process to enable an organization to control and/or reduce the frequency and severity of the risks associated with fire department emergency and nonemergency operations in order to realize the fire department's health and safety goals. Health and safety programs are elements of a health and safety management system.

3.3.20 Health and Safety Officer (HSO). See 3.3.44.1.

3.3.21 Health Hazard. Any property of a material that either directly or indirectly can cause injury, illness, or incapacitation, either temporary or permanent, from exposure by contact, inhalation, or ingestion.

3.3.22 Hot Zone. See 3.3.5.2.

3.3.23 Imminent Hazard. An act or condition that is judged to present a danger to persons or property that is so urgent and severe that it requires immediate corrective or preventive action.

3.3.24 Incident Action Plan. The objectives reflecting the overall incident strategy, tactics, risk management, and member safety that are developed by the incident commander. Incident action plans are updated throughout the incident. [**1500**, 2007]

3.3.25 Incident Commander (IC). The individual responsible for all incident activities, including the development of strategies and tactics and the ordering and the release of resources. [**472,** 2008]

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3.3.26* Incident Management System (IMS). A system that defines the roles and responsibilities to be assumed by responders and the standard operating procedures to be used in the management and direction of emergency incidents and other functions. [**1561,** 2005]

3.3.27 Incident Safety Officer (ISO). See 3.3.44.2.

3.3.28 Incident Safety Plan. Hazard control strategies developed by the incident safety officer to address the incident action plan and the type of incident encountered.

3.3.29* Incident Scene. The location where activities related to a specific incident are conducted. [**1561**, 2005]

3.3.30 Industrial Fire Brigade. An organized group of employees within an industrial occupancy who are knowledgeable, trained, and skilled in at least basic fire fighting operations, and whose full-time occupation might or might not be the provision of fire suppression and related activities for their employer. [**600**, 2005]

3.3.31* Member. A person involved in performing the duties and responsibilities of a fire department under the auspices of the organization. [**1500,** 2007]

3.3.32 No-Entry Zone. See 3.3.5.3.

3.3.33 Occupational Illness. An illness or disease contracted through or aggravated by the performance of the duties, responsibilities, and functions of a fire department member. [**1500**, 2007]

3.3.34 Occupational Injury. An injury sustained during the performance of the duties, responsibilities, and functions of a fire department member. [**1500**, 2007]

3.3.35* Occupational Safety and Health Program. An occupation specific program, implemented to reduce the risks associated with the occupation, that outlines the components of a program and the roles and responsibilities of the fire department and its members.

3.3.36 Passive Cooling. See 3.3.6.2.

3.3.37 Procedure. An organizational directive issued by the authority having jurisdiction or by the department that establishes a specific policy that must be followed. [**1561**, 2005]

3.3.38 Recovery. Those activities directed at locating and removing persons who have obviously or likely sustained fatal consequences from the incident.

3.3.39* Rehabilitation. An intervention designed to mitigate against the physical, physiological, and emotional stress of fire fighting in order to sustain a member's energy, improve performance, and decrease the likelihood of on-scene injury or death.

3.3.40 Rescue. Those activities directed at locating endangered persons at an emergency incident, removing those persons from danger, treating the injured, and providing for transport to an appropriate health care facility. [**1500**, 2007]

3.3.41 Risk. A measure of the probability and severity of adverse effects that result from exposure to a hazard. [**1451,** 2007]

3.3.42* Risk Management. Identification and analysis of exposure to hazards, selection of appropriate techniques to control exposures, implementation of chosen techniques, and monitoring of results to ensure the health and safety of members.

3.3.43 Risk Management Plan. A risk management plan is a written document that evaluates all the activities typically performed by a fire department and identifies the risk associated with those activities.

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

3.3.44.1* *Health and Safety Officer (HSO).* The member of the fire department assigned and authorized by the fire chief as the manager of the safety and health program. [**1500**, 2007]

3.3.44.1.1 *Assistant Health and Safety Officer.* A member of the fire department assigned and authorized by the authority having jurisdiction to assist the fire department health and safety officer in the performance of their duties and responsibilities.

3.3.44.2* *Incident Safety Officer (ISO).* A member of the command staff responsible for monitoring and assessing safety hazards or unsafe situations and for developing measures for ensuring personnel safety.

3.3.44.2.1 *Assistant Incident Safety Officer.* An individual appointed to respond or assigned at an incident scene by the incident commander to assist the incident safety officer in the performance of the incident safety officer functions.

3.3.45 Service Test. The regular, periodic inspection and testing of apparatus and equipment, according to an established schedule and guideline, to ensure that they are in safe and functional operating condition. [**1500**, 2007]

3.3.46* Special Operations. Those emergency incidents to which the fire department responds that require specific and advanced training and specialized tools and equipment. [**1500**, 2007]

3.3.47 Standard Operating Guideline. A written organizational directive that establishes or prescribes specific operational or administrative methods to be followed routinely, which can be varied due to operational need in the performance of designated operations or actions.

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

3.3.49 Tactical Level Management Component (TLMC). A management unit identified in an incident management system commonly known as "division" or "group."

3.3.50 Technical Rescue. The application of special knowledge, skills, and equipment to safely resolve unique and/or complex rescue situations. [**1670**, 2004]

3.3.51* Technical Specialist. A person with specialized skills, training, and/or certification who can be used anywhere within the incident management system organization where their skills might be required.

3.3.52 Warm Zone. See 3.3.5.4.

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Chapter 4 Organization

4.1 Assignment of the Health and Safety Officer.

4.1.1* The fire chief, the fire chief's designated representative, or the AHJ shall appoint a fire department health and safety officer (HSO) to administer and manage the fire department occupational safety and health program.

4.1.2 The health and safety officer shall report directly to the fire chief or to the fire chief's designated representative.

4.1.3* Assistant health and safety officers shall be appointed when the activities, size, or character of the fire department warrants extra safety personnel.

4.1.4* The health and safety officer shall recommend the utilization of technical specialists based on the occupational safety and health needs of the fire department.

4.2 Qualifications of the Health and Safety Officer.

4.2.1* The health and safety officer shall have and maintain a knowledge of the current principles and techniques of occupational safety and health management systems.

4.2.2* The health and safety officer shall have and maintain a knowledge of NFPA 1500, *Standard on Fire Department Occupational Safety and Health Program*, and other current applicable laws, codes, and standards regulating occupational safety and health to the fire service.

4.2.3* The health and safety officer shall have and maintain a knowledge of occupational health and safety hazards and the role of these hazards in diseases, illnesses, and injuries as related to emergency and nonemergency operations.

4.2.4* The health and safety officer shall have and maintain a knowledge of current health maintenance and physical fitness issues that affect the fire service members.

4.2.5* The health and safety officer shall have and maintain a knowledge of infection control practices and procedures as required in NFPA 1581, *Standard on Fire Department Infection Control Program*.

4.2.6 The health and safety officer shall have and maintain a knowledge of the practices and procedures for live fire training evolutions as defined in NFPA 1403, *Standard on Live Fire Training Evolutions*.

4.2.7 The health and safety officer shall maintain an awareness of the work of safety organizations, standards-making organizations, and regulatory agencies, in order to track changes in regulations or practices that are designed to eliminate unsafe practices and reduce existing hazardous conditions and that could affect the policies and procedures of the fire department.

4.3 Authority of the Health and Safety Officer.

4.3.1 The health and safety officer shall have the responsibility to identify and cause correction of health and safety hazards.

4.3.2 The health and safety officer shall have the following authority:

(1) Cause immediate correction of situations that create an imminent hazard to members
(2) Attend fires and other fire department activities for the purpose of operational review
(3) Investigate accidents, injuries, and near misses

4.3.3 Where nonimminent hazards are identified, a health and safety officer shall develop actions to correct the situation within the administrative process of the fire department.

4.3.4 The health and safety officer shall have the authority to bring notice of such hazards to whoever has the ability to cause correction.

4.4 Assignment of the Incident Safety Officer.

4.4.1* The fire department shall have a predesignated incident safety officer system to ensure that a separate incident safety officer (ISO), independent of the incident commander (IC) is appointed and responds automatically to predesignated incidents.

4.4.2* If the predesignated incident safety officer is not available, the incident commander shall appoint an incident safety officer.

4.4.3 An additional assistant incident safety officer(s) shall be appointed when the activities, size, or need of the incident warrants extra safety personnel.

4.4.4* Technical specialists shall be appointed by the incident commander based on the incident type, technical requirements of the incident, or as recommended by the incident safety officer or other members of the command staff.

4.5 Qualifications of the Incident Safety Officer.

4.5.1 The incident safety officer shall meet the requirements of Fire Officer Level 1 specified in NFPA 1021, *Standard for Fire Officer Professional Qualifications*.

4.5.2* The incident safety officer shall have the knowledge, skill, and abilities to manage incident scene safety as defined in Chapter 6.

4.5.3* The incident safety officer shall have and maintain a knowledge of safety and health hazards involved in emergency operations.

4.5.4* The incident safety officer shall have and maintain a knowledge of building construction.

4.5.5* The incident safety officer shall have and maintain a knowledge of fire science and behavior relative to predicting hostile fire events.

4.5.6* The incident safety officer shall have and maintain a knowledge of the fire department's personnel accountability system.

4.5.7* The incident safety officer shall have and maintain a knowledge of incident scene rehabilitation strategies.

4.6 Authority of the Incident Safety Officer.

4.6.1 At an emergency incident, the incident commander shall be responsible for the overall management of the incident and the safety of all members involved at the scene. [**1500**:8.1.5]

4.6.2 At an emergency incident where activities are judged by the incident safety officer as posing an imminent threat to fire fighter safety, the incident safety officer shall have the authority to stop, alter, or suspend those activities.

4.6.3 The incident safety officer shall immediately inform the incident commander of any actions taken to correct imminent hazards at the emergency scene.

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4.6.4 At an emergency incident where an incident safety officer identifies unsafe conditions, operations, or hazards that do not present an imminent threat to fire fighters, the incident safety officer shall take appropriate action through the incident commander to mitigate or eliminate the unsafe condition, operation, or hazard at the incident scene.

4.6.5 An assigned assistant incident safety officer(s) shall be granted the authority authorized in 4.6.2.

Chapter 5 Functions of the Health and Safety Officer

5.1 Risk Management.

5.1.1* The health and safety officer (HSO) shall be involved in the development, implementation, and management of the official written risk management plan as specified in Chapter 4 of NFPA 1500, *Standard on Fire Department Occupational Safety and Health Program*.

5.1.1.1 The health and safety officer shall communicate the health and safety aspects of the risk management plan to all members through training and education.

5.1.1.2 The health and safety officer shall make the written risk management plan available to all fire department members.

5.1.1.3* The health and safety officer shall develop, implement, and maintain health and safety programs to control risks as identified within the risk management plan.

5.1.2* The health and safety officer shall monitor the effectiveness of the risk management plan and shall ensure the plan is revised annually as it relates to fire fighter health and safety.

5.1.3* The health and safety officer shall develop an incident risk management plan that is incorporated into the fire department's incident management system.

5.1.4 This risk management plan shall meet the requirements of Chapter 8 of NFPA 1500.

5.2 Laws, Codes, and Standards.

5.2.1* Based on health and safety laws, codes, and standards, the health and safety officer shall develop and maintain standard operating procedures (SOPs) or standard operating guidelines (SOGs) pertaining to the fire department occupational health and safety program.

5.2.2 The SOP/SOGs developed in 5.2.1 shall be submitted to the fire chief or the fire chief's designated representative by the health and safety officer for issuance.

5.2.3 The health and safety officer shall report semiannually to the fire chief or the fire chief's designated representative on the adequacy of, effectiveness of, and compliance with applicable laws, codes, standards, standard operating procedures, and standard operating guidelines.

5.2.4 The fire chief shall define the role of the health and safety officer in ensuring compliance with the applicable laws, codes, standards, standard operating procedures, and standard operating guidelines.

5.3 Training and Education.

5.3.1* The health and safety officer shall develop and distribute health and safety information for the education of fire department members.

5.3.2* The health and safety officer shall ensure that training in safety procedures relating to all fire department operations and functions is provided to fire department members.

5.3.3 The health and safety officer shall develop corrective recommendations arising from the investigation of accidents, injuries, occupational deaths, illnesses, exposures, and the observation of incident scene activities to eliminate or reduce future occurrences.

5.3.3.1 The health and safety officer shall submit these recommendations to the fire chief through the chain of command.

5.3.4 The health and safety officer shall ensure that safety supervision is provided at all live training activities.

5.3.4.1 The health and safety officer or the health and safety officer's designated representative shall ensure that all live fire training evolutions are conducted in accordance with NFPA 1403, *Standard on Live Fire Training Evolutions*, and that those supervising these evolutions are familiar with that standard.

5.3.4.2 The health and safety officer or the health and safety officer's designated representative shall be personally involved in preburn inspections of any acquired structures to be utilized for live fire training.

5.4 Accident Prevention.

5.4.1 The health and safety officer shall manage an accident prevention program that addresses the items specified in this section.

5.4.2* The accident prevention program shall provide instruction for all fire department members in safe work practices for emergency and nonemergency operations.

5.4.3 The accident prevention program shall address the training and testing of all fire department vehicle drivers and operators.

5.4.4* The health and safety officer shall periodically survey operations, procedures, equipment, and fire department facilities with regard to maintaining safe working practices and procedures.

5.4.5 The health and safety officer shall report any recommendations to the fire chief or the fire chief's designated representative through the chain of command.

5.5 Accident Investigation, Procedures, and Review.

5.5.1 The health and safety officer shall develop and implement procedures to ensure that a member(s) suffering a life-threatening occupational injury or illness is provided immediate emergency medical care and transportation to a medical facility.

5.5.1.1 These procedures shall also ensure that all occupational injuries and illnesses are treated at the most appropriate health care facilities.

5.5.2* The health and safety officer shall investigate, or cause to be investigated, all occupational injuries, illnesses, exposures, and fatalities, or other potentially hazardous conditions involving fire department members and all accidents involving fire department vehicles, fire apparatus, equipment, or fire department facilities.

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5.5.3 The health and safety officer shall develop accident and injury reporting and investigation procedures and shall periodically review these procedures for revision.

5.5.3.1 These accident and injury reporting procedures shall comply with all local, state, and federal requirements.

5.5.4 The health and safety officer shall review the procedures employed during any unusually hazardous operation.

5.5.5 Wherever incorrect or questionable procedures are determined to be employed, the health and safety officer shall submit corrective recommendations to the fire chief or the fire chief's designated representative through the chain of command.

5.5.6 The health and safety officer shall develop corrective recommendations that result from accident investigations and submit such corrective recommendations to the fire chief or the fire chief's designated representative through the chain of command.

5.6 Records Management and Data Analysis.

5.6.1* The health and safety officer shall manage the collection and analysis of data related to accidents, occupational deaths, injuries, illnesses, and exposures to infectious agents and communicable diseases in accordance with Chapter 4 of NFPA 1500.

5.6.2* The health and safety officer shall identify and analyze health and safety hazards and shall develop corrective actions to deal with those hazards.

5.6.3 The health and safety officer shall ensure that records on the following are maintained as specified in NFPA 1500:

(1) Periodic inspection and service testing of apparatus and equipment
(2) Periodic inspection and service testing of personal safety equipment
(3) Periodic inspection of fire department facilities

5.6.4 All recommendations made and actions taken by the health and safety officer to correct health and safety hazards or unsafe practices shall be documented and maintained.

5.6.5 The health and safety officer shall maintain records of all control measures implemented to enhance health and safety procedures and accident prevention methods.

5.6.6 The health and safety officer shall issue a report on fire department accidents, occupational injuries, illnesses, deaths, and exposures to the fire chief semiannually.

5.7 Apparatus and Equipment.

5.7.1 The health and safety officer shall review specifications for new apparatus, equipment, and protective clothing and equipment for compliance with the applicable safety standards in Chapters 6 and 7 of NFPA 1500.

5.7.2 The health and safety officer shall assist with making recommendations regarding the evaluation of new equipment and its acceptance or approval by the fire department in accordance with the applicable provisions of NFPA 1500.

5.7.3 The health and safety officer shall assist with making recommendations regarding the service testing of apparatus and equipment to determine its suitability for continued service in accordance with Chapter 6 of NFPA 1500.

5.7.4 The health and safety officer shall develop, implement, and maintain a protective clothing and equipment program that meets the requirements in Chapter 7 of NFPA 1500 and that provides for the periodic inspection and evaluation of all protective clothing and equipment to determine its suitability for continued service.

5.8 Facility Inspection.

5.8.1 The health and safety officer shall ensure all fire department facilities are inspected in accordance with Chapter 9 of NFPA 1500.

5.8.2 The health and safety officer shall ensure that any safety or health hazards or code violations are corrected in a prompt and timely manner.

5.9 Health Maintenance.

5.9.1 The health and safety officer shall ensure that the fire department complies with the requirements of Chapter 10 of NFPA 1500.

5.9.2 The health and safety officer shall incorporate medical surveillance, wellness programs, physical fitness, nutrition, and injury and illness rehabilitation into the health maintenance program.

5.10 Liaison.

5.10.1 The health and safety officer shall be a member of the fire department occupational health and safety committee.

5.10.2 The health and safety officer shall report the recommendations of the fire department occupational health and safety committee to the fire chief or the fire chief's designated representative through the chain of command.

5.10.3 The health and safety officer shall submit recommendations on occupational health and safety to the fire chief or the fire chief's designated representative.

5.10.4 The health and safety officer shall provide information and assistance to officers and fire fighters for surveying their districts, so they will be able to identify and report health and safety hazards that could have adverse effects on fire department operations.

5.10.5 The health and safety officer shall maintain a liaison with staff officers regarding recommended changes in equipment, procedures, and methods to eliminate unsafe practices and reduce existing hazardous conditions.

5.10.6 The health and safety officer shall maintain a liaison with the fire department physician to ensure that needed medical advice and treatment are available to the members of the fire department.

5.11 Occupational Safety and Health Committee.

5.11.1 The fire chief or the authority having jurisdiction (AHJ) shall ensure that an occupational safety and health committee is established by the fire department.

5.11.2 The fire chief or AHJ shall appoint a health and safety officer who will serve as a member of the occupational safety and health committee and ensure that the committee meets the requirements of Section 4.5 of NFPA 1500.

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5.12 Infection Control.

5.12.1 The health and safety officer shall ensure that the fire department's infection control program meets the requirements of 29 CFR 1910.1030, "Occupational Exposure to Bloodborne Pathogens," and NFPA 1500.

5.12.2 The health and safety officer shall maintain a liaison with the person(s) designated as infection control officer to assist in achieving the objectives of the infection control program as specified in NFPA 1581.

5.12.3 The health and safety officer shall function as the fire department infection control officer if an infection control officer position does not exist in the fire department.

5.13 Critical Incident Stress Management.

5.13.1 The health and safety officer shall ensure that the fire department establishes a critical incident stress management (CISM) program.

5.13.2 The critical incident stress management program shall meet the requirements of Chapter 12 of NFPA 1500.

5.13.3 The health and safety officer shall ensure that the critical incident stress management program is incorporated into the fire department's member assistance program.

5.14 Post-Incident Analysis.

5.14.1 The health and safety officer shall develop procedures to ensure that health and safety issues are addressed during post-incident analysis.

5.14.2 The health and safety officer shall provide a written report that includes pertinent information about the incident relating to health and safety issues.

5.14.2.1 The written report shall include information based upon input from the incident safety officer (ISO).

5.14.2.2 The written report shall include or address the following:

(1) The incident action plan
(2) The incident safety officer's incident safety plan
(3) Issues related to the use of protective clothing and equipment
(4) Issues related to the personnel accountability system
(5) Rehabilitation operations
(6) Other issues affecting the safety and welfare of personnel at the incident scene

Chapter 6 Functions of the Incident Safety Officer

6.1 General Functions of the Incident Safety Officer.

6.1.1* The incident safety officer (ISO) shall be integrated with the incident management system (IMS) as a command staff member, as specified in NFPA 1561, *Standard on Emergency Services Incident Management System.*

6.1.2* Standard operating procedures (SOPs) shall define criteria for the response of a predesignated incident safety officer.

6.1.2.1 If the incident safety officer is designated by the incident commander, the fire department shall establish criteria for appointment based upon 6.1.1.

6.1.3* The incident safety officer and assistant incident safety officer(s) shall be readily identifiable at the incident scene.

6.1.4* Upon arrival or assignment as the incident safety officer at an incident, he or she shall obtain a situation-status briefing from the incident commander, that includes the incident action plan.

6.1.5 The incident safety officer shall monitor the incident action plan, conditions, activities, and operations to determine whether they fall within the criteria as defined in the fire department's risk management plan.

6.1.6 When the perceived risk(s) is not within the fire department's risk management criteria, the incident safety officer shall take action as outlined in Section 4.6.

6.1.7 The incident safety officer shall monitor the incident scene and report to the incident commander the status of conditions, hazards, and risks.

6.1.8 The incident safety officer shall ensure that the fire department's personnel accountability system is being utilized.

6.1.9* The incident safety officer shall offer judgment to the incident commander on establishing control zones and no-entry zones and ensure that established zones are communicated to all members present on the scene.

6.1.10 The incident safety officer shall evaluate motor vehicle incident scene traffic hazards and apparatus placement and take appropriate actions to mitigate hazards as described in Section 8.7 of NFPA 1500, *Standard on Fire Department Occupational Safety and Health Program.*

6.1.11 The incident safety officer shall monitor radio transmissions and stay alert to transmission barriers that could result in missed, unclear, or incomplete communication.

6.1.12* The incident safety officer shall ensure that the incident commander establishes an incident scene rehabilitation tactical level management component during emergency operations.

6.1.13* The incident safety officer shall communicate to the incident commander the need for assistant incident safety officers and/or technical specialists due to the need, size, complexity, or duration of the incident.

6.1.14 The incident safety officer or assistant incident safety officer shall survey and evaluate the hazards associated with the designation of a landing zone and interface with helicopters.

6.1.15* The incident safety officer shall recognize the potential need for critical incident stress interventions and notify the incident commander of this possibility.

6.1.16 If the incident safety officer or an assistant safety officer needs to enter a hot zone or an environment that is immediately dangerous to life or health (IDLH), the incident safety officer or assistant safety officer shall be paired up with another member and check in with the entry control officer.

6.2 Fire Suppression.

6.2.1 The incident safety officer shall meet the provisions of Section 6.2 during fire suppression operations.

6.2.2* The incident safety officer shall ensure that a rapid intervention team meeting the criteria in Chapter 8 of NFPA 1500, is available and ready for deployment.

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6.2.3 Where fire has involved a building(s) the incident safety officer shall advise the incident commander of hazards, collapse potential, and any fire extension in such building(s).

6.2.4 The incident safety officer shall evaluate visible smoke and fire conditions and advise the incident commander, tactical level management component's (TLMC) officers, and company officers on the potential for flashover, backdraft, blow-up, or other events that could pose a threat to operating teams.

6.2.5 The incident safety officer shall monitor the accessibility of entry and egress of structures and its effect on the safety of members conducting interior operations.

6.3 Emergency Medical Service Operations.

6.3.1 The incident safety officer shall meet the provisions of Section 6.3 during emergency medical service (EMS) operations.

6.3.2 The incident safety officer shall ensure compliance with the department's infection control plan and NFPA 1581, *Standard on Fire Department Infection Control Program*, during emergency medical service operations.

6.3.3 The incident safety officer shall ensure that incident scene rehabilitation and critical incident stress management are established as needed at emergency medical service operations, especially mass casualty incidents (MCIs).

6.4 Technical Rescue.

6.4.1 The incident safety officer shall meet the provisions of Section 6.4 during technical rescue operations.

6.4.2* In cases where a designated incident safety officer does not meet the technician-level requirements of NFPA 1006, *Standard for Rescue Technician Professional Qualifications*, the incident commander shall appoint an assistant incident safety officer or a technical specialist who meets the technician-level requirements of NFPA 1006 to assist with incident safety officer functions.

6.4.3 The incident safety officer shall attend strategic and tactical planning sessions and provide input on risk assessment and member safety.

6.4.4* The incident safety officer shall ensure that a safety briefing is conducted and that an incident action plan and an incident safety plan are developed and made available to all members on the scene.

6.5 Hazardous Materials Operations.

6.5.1 The incident safety officer shall meet the provisions of Section 6.5 during hazardous materials operations.

6.5.2* In cases where a designated incident safety officer does not meet the technician-level requirements of NFPA 472, *Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents*, the incident commander shall appoint an assistant incident safety officer or a technical specialist who meets the technician-level requirements of NFPA 472 to assist with incident safety officer functions.

6.5.3 The incident safety officer shall attend strategic and tactical planning sessions and provide input on risk assessment and member safety.

6.5.4* The incident safety officer shall ensure that a safety briefing is conducted and that an incident action plan and an incident safety plan are developed and made available to all members on the scene.

6.5.5 The incident safety officer shall ensure that control zones are clearly marked and communicated to all members.

6.6 Accident Investigation and Review.

6.6.1 Upon notification of a member injury, illness, or exposure, the incident safety officer shall immediately communicate this information to the incident commander to ensure that emergency medical care is provided.

6.6.2 The incident safety officer shall initiate the accident investigation procedures as required by the fire department.

6.6.3* In the event of a serious injury, fatality, or other potentially harmful occurrence to a member, the incident safety officer shall request assistance from the health and safety officer.

6.7 Post-Incident Analysis.

6.7.1* The incident safety officer shall prepare a written report for the post-incident analysis that includes pertinent information about the incident relating to health and safety issues.

6.7.2* The incident safety officer shall participate in the post-incident analysis.

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.1.4.1 In no case should the equivalency afford less competency of members or safety to members than that which, in the judgment of the AHJ, would be provided by meeting the requirements of Chapter 4.

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

A.3.2.2 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.

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A.3.3.12 Fire Department. The term *fire department* includes any public, governmental, private, industrial, or military organization providing these services.

A.3.3.13 Fire Department Facility. This does not include locations where a fire department can be summoned to perform emergency operations or other duties, unless such premises are normally under the control of the fire department. [**1500**, 2007]

A.3.3.17 Fire Suppression. Fire suppression includes all activities performed at the scene of a fire incident or training exercise that expose fire department members to the dangers of heat, flame, smoke, and other products of combustion, explosion, or structural collapse. [**1500**, 2007]

A.3.3.18 Hazard. Hazards include the characteristics of facilities, equipment, systems, property, hardware, or other objects and the actions and inactions of people that create such hazards.

A.3.3.26 Incident Management System (IMS). The system is also referred to as an incident command system (ICS). [**1561,** 2005]

A.3.3.29 Incident Scene. This location should include the entire area subject to incident-related hazards and all areas used by fire department responders and equipment in proximity to the incident scene. [**1561**, 2005]

A.3.3.31 Member. A fire department member can be a full-time or part-time employee, can be a paid or unpaid volunteer, can occupy any position or rank within the fire department, and might or might not engage in emergency operations.

A.3.3.35 Occupational Safety and Health Program. This program is also referred to as the Occupational Safety and Health Management System.

A.3.3.39 Rehabilitation. Rehabilitation efforts should include providing relief from extreme climate and/or incident conditions, rest and recovery, rehydration, replacement of calories and electrolytes, active cooling (or warming if necessary), medical monitoring, and member accountability.

A.3.3.42 Risk Management. The risk management process includes the identification and analysis of exposure to hazards, evaluation and prioritization of those hazards, selection of appropriate risk management techniques to mitigate exposure to those hazards, implementation of selected control measures, and monitoring of results.

Risk management is a vital component to any organization's operation, especially a fire department. Health and safety programs are elements of a health and safety management system that directs the risk management process. The risk management process enables an organization to control or reduce the frequency and severity of the risks associated with fire department emergency and nonemergency operations.

A.3.3.44.1 Health and Safety Officer (HSO). This individual can also be the incident safety officer or that role can be assigned to another individual as a separate function.

A.3.3.44.2 Incident Safety Officer (ISO). The incident safety officer can have "assistants."

A.3.3.46 Special Operations. Special operations include responses to water rescue, hazardous materials releases, situations involving confined space entry, high-angle rescue, terrorism [chemical, biological, radiological, nuclear, and explosive (CBRNE)] and other operations requiring specialized training.

A.3.3.48 Standard Operating Procedure. The intent of standard operating procedures is to establish directives that must be followed. Standard operating guidelines allow flexibility in application.

A.3.3.51 Technical Specialist. Technical specialists could be needed in areas of fire behavior, special operations (i.e., hazardous materials, technical rescue), water resources, environmental concerns, building construction, Urban Search and Rescue (USAR), resource use, training, geographic information systems, and damage inspections.

A.4.1.1 The fire chief is responsible for the overall management and authority of the fire department, including member safety and health. The fire chief delegates the responsibility of member safety and health to a health and safety officer. The health and safety officer is the manager or administrator of the occupational health and safety program.

The determination of whether the role of fire department health and safety officer will be a full-time or part-time assignment should be made by the fire chief. This determination should depend on the size and structure of the organization; the activity level; the level of risk in the fire department's work environment; and the history of accidents, injuries, occupational illnesses, fatalities, and exposures.

A.4.1.3 A large fire department should have one or more assistant health and safety officers working in the area of safety and health under the direction of the health and safety officer. A small department can have one individual assigned as the health and safety officer, which can be on a part-time basis. This individual can depend on assistance from members of the occupational safety and health committee and technical specialists who have expertise in various areas of fire fighter safety and health.

A.4.1.4 Examples of technical specialists include industrial hygienists, ergonomists, asbestos abatement consultants, and occupational physicians.

A.4.2.1 The health and safety officer should utilize occupational safety and health management principles and techniques as a basis for establishing the fire department's occupational health and safety programs. Basic occupational safety and health management principles and techniques can be found through college courses, correspondence programs, safety management texts, and certification programs.

A.4.2.2 The standard requires the health and safety officer to have and maintain a knowledge of current applicable laws, codes, and standards. Obtaining this current knowledge requires an ongoing effort to be aware of the developing bodies of knowledge and experience pertaining to fire service occupational safety and health. This awareness can be gained through reading journals and periodicals, attending classes and seminars, and regularly reviewing additions and changes in applicable laws, codes, and standards.

A.4.2.3 The health and safety officer should recognize health and safety hazards and know how to reduce the severity of those hazards. Health and safety hazards can include, but are not limited to, respiratory hazards, cancer, and heart disease. They can also include exposure to communicable diseases and hazardous materials, apparatus and vehicle issues, traffic safety, heat stress, and hazardous energy.

A.4.2.4 The health and safety officer should be familiar with occupational disease, illness, and injury prevention strategies

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that identify real and potential health risks in the work environment and that inform, motivate, and otherwise help members to adopt and maintain healthy practices and lifestyles.

A.4.2.5 The health and safety officer can utilize NFPA 1581, *Standard on Fire Department Infection Control Program*, to develop, implement, and maintain an infection control program and serve as a resource for infection control issues.

A.4.4.1 A recurring recommendation from NIOSH Fire Fighter Investigative Reports emphasizes the need for a predesignated incident safety officer for fire departments. Predesignated incidents include working fires, multiple-alarm fires, fires in commercial facilities or high-risk buildings, situations where a fire fighter is injured or transported for treatment, reported mass casualties, or technical rescues.

A.4.4.2 There are circumstances at emergency incidents that require the immediate response or attention of a separate incident safety officer. It is unrealistic to assume that one individual would be available on a continual basis to fulfill the requirements of a predesignated incident safety officer. The response of the predesignated incident safety officer to an emergency incident might be delayed by distance, simultaneous events, or other circumstances. When an incident safety officer is needed at an incident scene and none is available, the incident commander should assign a qualified member to the incident safety officer function.

A.4.4.4 Fire departments respond to incidents that may be outside, or have elements outside, the level of knowledge, skill, and ability of response members. In these cases, it is incumbent upon the incident safety officer or incident commander to utilize technical specialists (civilians or personnel from other emergency service organizations) to assist an incident safety officer with the health and safety issues of that incident.

Some technical specialists may have achieved certification through accredited agencies or licensing bodies in disciplines not typically held by fire department members. Examples include but are not limited to structural engineer, occupational hygienist, hydrologist, doctor, lawyer, chemist, and any other technical specialist as required by the incident.

Although usually assigned to the planning section, depending on the requirements of the incident and the needs of the section chief, the technical specialist may be assigned anywhere within the incident management system structure.

When dealing with safety matters at an incident, a technical specialist(s) should report directly to the incident safety officer or the assistant safety officer assigned to the respective division or group.

A.4.5.2 It is imperative that the member who functions as the incident safety officer be qualified to assume this function. Training, experience, and knowledge in incident scene operations are excellent qualifiers for an incident safety officer. The incident safety officer needs to have an understanding of the operations of the particular incident and the hazards associated with those operations, risk management, the incident management system, and personnel accountability.

A.4.5.3 Safety and health hazards can include lack of or improper use of protective clothing and equipment, structural conditions, scene safety, infection control, hazardous materials, conditions associated with technical rescue incidents, personnel accountability, or any hazard that affects the safety and health of personnel operating at the incident scene.

A.4.5.4 Identification of building construction problems or concerns has a direct impact on fire fighter safety. The incident safety officer needs to be able to identify and evaluate the following:

(1) Building types
(2) Construction features
(3) Characteristics of materials
(4) Load imposition, resistance, and transfer
(5) Structural impact of fire degradation
(6) Collapse potential and control

Prefire planning should be incorporated into this process to identify any other building construction factors that affect fire fighter safety.

A.4.5.5 The incident safety officer is responsible for evaluating conditions and advising the incident commander, tactical level officers, and company officers of the potential for hostile fire events such as flashover, backdraft, or other fire extension threats.

The incident safety officer should maintain a knowledge, at minimum, of ignition causes, fire spread, fire growth, heat transfer, combustion products, smoke movement, and how they relate to flashover, backdraft, and rapid fire extension.

The incident safety officer should also maintain a knowledge of topography, climactic conditions, fuel load, conditions, and any other factors that can affect the health and safety of members.

A.4.5.6 The incident safety officer needs to be able to advise the incident commander and other officers if the accountability system is not working properly.

A.4.5.7 Incident scene "rehab" is a critical part of incident scene safety. The incident safety officer is not responsible for establishing the rehab tactical level management component but needs to ensure that it is established and adequately staffed with personnel and resources. The key components of the rehab process are rest, hydration, active cooling, medical monitoring, food, and protection from extreme elements.

A.5.1.1 Risk management is a vital component to any organization's operation, especially a fire department. Health and safety programs are elements of a health and safety management system that directs the risk management process. The risk management process enables an organization to control and/or reduce the frequency and severity of the risks associated with fire department emergency and nonemergency operations.

A.5.1.1.3 Strategies for controlling risks may take the form of removal of the hazard at source (e.g., elimination or substitution of a toxic chemical), along the path (e.g., at source capture of diesel exhaust), or at the worker [e.g., personal protective clothing (PPE)]. The least desirable of these controls is the control at the worker such as SCBA. Given the inherent dangers of the fire service workplace, fire fighters are typically required to opt for the least desirable control and, as such, these controls require extensive documentation to develop, implement, and maintain them. Therefore, programs are needed to create the supporting structure for the control.

A risk management plan is a written document that evaluates all those activities typically performed by a fire department and identifies the risks associated with those activities and potential controls to minimize the chance of accident, injury, or other such loss. Typically, a risk management plan directs the priorities for program development within a safety

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and health management system though the development of a comprehensive set of standard operating procedures and/or standard operating guidelines (SOP/SOGs), training notes, and/or other administrative elements that provide direction (or administrative controls) to manage those risks. A generic program format from Ottawa Fire Services is included as an example in Figure A.5.1.1.3.

Fire Services Sample Program Development Format

Programs will be developed using a standard format that incorporates the following general headings. The advantages of using a standard format include consistency, adaptability, ease of use, and familiarity across departments, to foster the goal of "internal responsibility."

Completed programs are to be subjected, where applicable, to third-party review prior to implementation.

Introduction. Describes subject and rationale for program.

Scope. Identifies to whom program applies.

Policy. Statement of policy regarding subject area.

Definitions. Description of terms/nomenclature.

Legislative Requirements. Summarizes supporting legislation, reference standards, and corporate and departmental policies used in the development of the program.

Administration. Details the administrative responsibilities.

Procedures. Operating procedures and actions to be taken.

Record Keeping. Record-keeping requirements.

Training. Training requirements for all members included in the scope of the program.

Audit. Requirements for program audit through performance/non-performance-based criteria (e.g., incident investigations/reports, quarterly report, annual report, benchmarking audit, 3-year internal audit, 5-year external audit).

Appendix. Comprehensive listing of referenced and supporting documents.

FIGURE A.5.1.1.3 Sample Program Development Format. *(Source: Ottawa Fire Services.)*

A.5.1.2 Numerous methods can be used to determine the effectiveness of the risk management plan. Injury and exposure statistics should be monitored along with operational reports from post-incident analyses (PIAs), SOP/SOGs, training notes, and program directives and records (SCBA, equipment inspections, etc.) to ensure they are being followed. Where data or observations indicate that the controls are not working effectively, they should be reviewed and changed accordingly.

A.5.1.3 The incident risk management plan can be compiled from the department's SOP/SOGs, training notes, program directives, and so forth. It should include but is not limited to all those activities that are part of the command process [accountability, entry control, use of rapid intervention teams (RITs), etc.] along with any other pertinent directives according to the department's procedures (e.g., apparatus placement, ventilation criteria, rehabilitation, etc.).

A.5.2.1 For guidance on writing SOP/SOGs, see FA-197, *Developing Effective Standard Operating Procedures For Fire & EMS Departments.*

A.5.3.1 This duty could be achieved through the development and dissemination of training notes and SOP/SOGs, which serve as administrative and operational controls. These administrative SOP/SOGs, training notes, and other administrative documents are directed at fulfilling the objectives of an operational risk management plan.

A.5.3.2 The health and safety officer is not the only safety trainer. To fulfill the function of safety trainer properly, even in a small fire department, the health and safety officer should act as a conduit for information and training programs related to occupational health and safety.

All departments have a hierarchy of ranks (from fire chief to fire fighter) and associated roles that accompany these positions. To a large extent, these positions can be categorized into three principal groups as follows:

(1) Employers and/or managers
(2) Supervisors and/or officers
(3) Workers or fire fighters

Each of these groups has associated and implied responsibilities towards member health and safety.

As stated in the Occupational Safety and Health Act (OSHA), Section 5, Duties:

(1) "Each employer –
   (a) shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees;
   (b) shall comply with occupational safety and health standards promulgated under this Act.
(2) Each employee shall comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to this Act which are applicable to his own actions and conduct."

Generally speaking, the fire chief and senior (management) staff take on the employer responsibilities for fire departments. Employers and/or managers need to take reasonable precautions for the protection of the health and safety of their workers according to the OSHA general duty clause. Workers, in turn, have a duty to abide by the Act and applicable regulations. The Act falls short in failing to detail the responsibilities of supervisors to warn workers about known hazards and take reasonable precautions for their health and safety. Although not specified here, it is reasonable to expect supervisors to perform these functions.

For health and safety legislation to be effective, all workplace parties, employers, supervisors, and workers need to take responsibility for their health and safety and for the health and safety of those people they supervise.

A.5.4.2 Instructional methods, medium/means, and materials will vary according to the potential hazards and risks associated with the operation as identified in the risk management plan. SOP/SOGs, training notes, videos, and so forth may suffice in some areas. The goal is to ensure all members possess the requisite knowledge skills to perform the required tasks in a safe and effective manner.

A.5.4.4 A survey or audit of operations, procedures, equipment, and facilities requires a standard against which to determine compliance with applicable standards and departmental

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procedures. At a minimum, NFPA 1500, *Standard on Fire Department Occupational Safety and Health Program*, should be used to determine an acceptable level of compliance.

A.5.5.2 Investigations are meant to be fact-finding not fault-finding. Their purpose is to develop corrective procedures or actions to prevent a future occurrence. In some cases, peer review panels might be set up for the purpose of unbiased factual discussions or recommendations.

A.5.6.1 Data management refers to the collection and assimilation of information related to fire department health and safety and the use of this data to enhance the efforts of the occupational safety and health program. The data management process provides the following:

(1) Summary of fire department experience in different categories (e.g., fire fighter injuries, vehicular accidents, work-related illnesses)
(2) Measure of how the experience of a particular fire department compares with that of other fire departments, national trends, and other occupations or industries
(3) Systematic method to record information for future reference and use

Data management provides a means of determining trends and program effectiveness, whether problems are becoming worse, accidents and injuries are being reduced, and the costs associated with accidents and injuries are increasing or decreasing.

Occupational safety and health requires employers to maintain records of job-related injuries and illnesses.

A.5.6.2 Hazard identification and control is one method to reduce accidents, injuries, and loss. Ultimately, accidents are investigated in order to determine both immediate and basic causes. Once these causes have been identified, controls can be put in place to help prevent future occurrences.

A.6.1.1 Incident scene safety needs to be carried out at all incidents. It is the responsibility of the incident commander (IC) who cannot perform this function due to the size or complexity of the incident to assign or request response of an incident safety officer to this function. There are, however, incidents that require immediate response or appointment of an incident safety officer. This type of incident should be defined in the fire department's response policy or procedures to ensure that the incident safety officer responds. Likewise, some situations require an incident safety officer to respond after members are on the scene, such as a working fire or at the request of the incident commander.

A.6.1.2 A fire department should develop response procedures that ensure that a predesignated incident safety officer independent of the incident commander responds automatically to predesignated incidents. Examples could be as follows:

(1) Commercial fire
(2) Multiple-alarm fire
(3) Serious member injury or member transported for treatment
(4) Hazardous materials incident
(5) Technical rescue incident
(6) At the request of the incident commander

A.6.1.3 This identification can be accomplished by wearing a highly visible vest, helmet, or other indicator that is unique to the incident safety officer position.

A.6.1.4 Upon arrival at an incident, the designated incident safety officer should meet with the incident commander to confirm the incident safety officer assignment and be integrated into the accountability system. Upon confirmation, the incident safety officer should obtain the following information:

(1) The overall situation and resource status
(2) The incident action plan and personnel accountability status
(3) Known hazards and concerns and establishment of control zones
(4) Status of rapid intervention teams and a rehab tactical level management component
(5) Confirmation of established radio communication channels

Once this information is obtained, the incident safety officer should don personal protective equipment (PPE) appropriate for the potential hazards that he or she will be exposed to, as well as an incident safety officer identifying vest or helmet. From here, the incident safety officer should perform a reconnaissance of the incident and begin incident safety officer functions as outlined in Chapter 6.

A.6.1.9 Figure A.6.1.9 shows the concept of control zones. The hot zone is the area presenting the greatest risks to members and will often be classified as an immediately dangerous to life or health (IDLH) atmosphere.

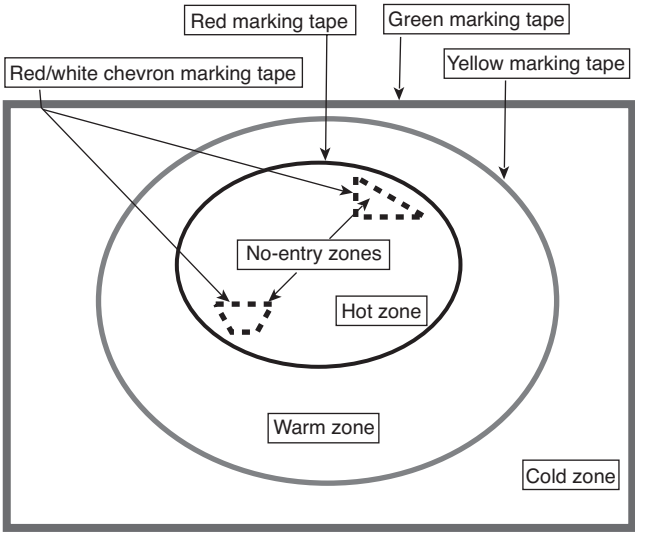

FIGURE A.6.1.9 Example of Control Zones.

The warm zone is a limited access area for members either directly aiding or indirectly supporting operations in the hot zone. Significant risk of human injury (respiratory, exposures, etc.) can still exist in the warm zone.

The cold zone establishes the public exclusion, or clean zone. There are minimal risks for human injury and exposure in this zone.

Any control zone can include a no-entry zone. Examples of no-entry zones are holes in floors, explosive devices, and crime scenes.

Wherever possible, control zones should be identified with colored hazard tape, signage, cones, flashing beacons, fences, or other appropriate means. However, because of the nature

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or location of the incident, available resources, or other considerations, it might not always be possible or practical to mark the control zones.

When colored tape is being used to mark control zones, it is recommended that the following tape colors be used:

(1) No-entry zone: Red/white chevron
(2) Hot zone: Red
(3) Warm zone: Yellow
(4) Cold zone: Green

A.6.1.12 On-scene rehabilitation should address rest, hydration, active cooling, basic life support monitoring and care, energy nutrition (food and electrolyte replacement), and accommodation strategies for extreme elements.

A.6.1.13 Incidents such as high-rise fires, hazardous materials incidents, and special operations require additional assistance and/or technical expertise.

A.6.1.15 Many departments have a number of means to access CIS/EAP services. In some cases, the incident commander may need to be relieved of dealing with stress, and another means of activating this service may need to be considered.

A.6.2.2 The intention of this requirement is that the incident safety officer checks to see that the incident commander has established a rapid intervention team. In cases where this has not happened, the incident safety officer should inform the incident commander of the need. Where the rapid intervention team requirement has been met, the incident safety officer should meet with the rapid intervention team leader and share information and observations such as fire conditions, building construction, access and egress, hazardous energy, and other pertinent hazards.

A.6.4.2 Some functions are performed best by individuals with specific expertise, particularly in highly technical areas. The designated incident safety officer can utilize members with specific expertise in the technical specialist or assistant incident safety officer role. In these cases, the incident safety officer can address overhead safety functions while the technical specialist or assistant incident safety officer addresses safety functions for those with specific special operations expertise.

A.6.4.4 Confined space incidents require an incident safety plan and a pre-entry safety briefing for all members operating at the incident [29 CFR 1910.120(b)(4)]. It is advisable that all special operations incidents utilize a similar approach. Where a technical specialist or assistant incident safety officer is utilized, the incident safety officer should utilize their input to help develop the plan and briefing. The incident safety plan should include the following:

(1) Safety and health risks that might be encountered for each member
(2) Member training requirements for each assignment
(3) PPE required for each member assignment
(4) Medical surveillance requirements
(5) Frequency and type of air, personnel, and environmental monitoring
(6) Decontamination procedures
(7) Member emergency and rapid intervention procedures
(8) Chain of command and communication plans
(9) Overview of the incident action plan

A.6.5.2 Due to the knowledge and expertise required at a technician-level hazardous materials incident, the incident safety officer needs to have an understanding of these operations. This can be achieved by being trained to the hazardous materials technician level of NFPA 472, *Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents*. In cases where the designated ISO does not possess the technician-level training, appointing a technician-level trained assistant or technical specialist with the necessary training will help satisfy the safety needs of the technician-level members.

Title 29 CFR 1910.120(q)(3)(vii) requires the incident commander to designate a "…safety officer, who is knowledgeable in the operations being implemented at the emergency response site." This has been interpreted to apply to hazardous materials emergency incidents and confined space rescue incidents. The appointment of a technical specialist (in this case an individual with training to the technician level) can meet this requirement where the incident safety officer does not possess the knowledge, training, or experience to handle such incidents.

Examples include but are not limited to hazmat technician-level operations, confined space rescues, specialist operations such as high angle and swift water rescue, urban search and rescue incidents, federal-level wildland fires, and WMD responses.

A.6.5.4 Title 29 CFR 1910.120(b)(4) requires that a site safety and health plan (incident safety plan) is developed at hazardous materials incidents (technician-entry type incidents). All incident responders are required to receive a safety briefing pre-entry. Where a technical specialist is utilized, the incident safety officer should utilize their expertise to help develop the plan. The incident safety plan should include the following:

(1) Safety and health risks that could be encountered for each member
(2) Member training requirements for each assignment
(3) PPE required for each member assignment
(4) Medical surveillance requirements
(5) Frequency and type of air, personnel, and environmental monitoring
(6) Decontamination procedures
(7) Member emergency and rapid intervention procedures
(8) Chain of command and communication plans
(9) Overview of the incident action plan

A.6.6.3 In cases where a member sustains a serious injury or fatality, the incident safety officer may be viewed as a witness as opposed to an investigator. In these cases, the designated incident safety officer should notify the department's health and safety officer to fulfill the investigative requirements of the department. In cases where the designated incident safety officer is the department's health and safety officer, the incident safety officer needs to notify the incident commander that potential conflict exists in starting the investigative process.

A.6.7.1 The incident safety officer should document pertinent information about the incident, including assignments given by the incident commander, the incident safety plan, procedures that worked well, obstacles encountered and how to correct them, and accidents and/or injuries.

It is important to include successful or positive actions as well as those actions that require training or procedural changes to improve incident safety and health for all members.

A.6.7.2 The incident safety officer should be prepared to address issues relating to personal protective equipment, personnel accountability, rapid intervention posture, rehabilitation operations, the incident action plan, risk versus gain, and other issues affecting the safety and welfare of members at an incident scene.

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Annex B Safety Officer's Post-Incident Analysis Report

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

B.1 The following material is provided by the Ottawa Fire Services Safety Division. Section B.2 provides a template for a safety officer's post-incident analysis (PIA) report. Section B.3 provides guidance on writing the report.

B.2 Safety Officer's Post-Incident Analysis Report Template. As a result of all major incidents, or at the request of a senior officer, a Safety Division Incident Report will be prepared. The report will be a comprehensive document outlining the actions of the Ottawa Fire Services at the incident and will include the topics addressed in B.2.1 through B.2.5.

B.2.1 Introduction. The introduction states the subject matter to be discussed, the purpose, and the organization and scope of the report.

The importance of the introduction is to prepare the reader to receive what the writer intends to present. The introduction relates the subject matter of the report in a convincing and clear manner. Specifically, the introduction presents the precise subject to be presented, indicates the reasons for presenting it, and describes the scope and organization of how the report will be laid out.

The introduction should not be longer than one page in length. If the subject, objectives, and method of presentation are not complicated, one or two paragraphs will suffice. If a considerable amount of background information is necessary, try moving it to a separate section of the report (e.g., background information).

B.2.2 Sequence of Events. The intent of the sequence of events is to provide a clear, concise chronology of the major actions that took place over time at the incident.

While objectivity is an essential component of the report, seeing all actions that occurred at the incident would be difficult for the writer. Accuracy can be improved by corroborating events with others who were present at the incident. This corroboration can be accomplished readily during the post-incident analysis.

Try to be direct and concise, eliminating anecdotal (hearsay) information and irrelevant details. If specific information is required for explanation or interest, include a more detailed chronology of events as an appendix.

Separate groups or sequences of events into logical sections or periods of time. If specific, important actions took place, pinpoint key times to the nearest minute if possible.

If referring to actions that the writer has performed, use the first person in describing them. When referring to the actions of others, use the third person perspective.

B.2.3 Safety Issues. The safety issues section of the report should provide a detailed description of the hazards present at the incident, the potential for accidents/injuries, accidents/injuries that did occur, safety violations, remedial steps taken, and further action needed.

B.2.3.1 Hazards. Use the hazards section to describe the hazards that were present at the incident scene. Show the potential for danger that these hazards posed and any safety concerns associated with them.

Some subjects for consideration are weather/incident conditions, use of PPE, hazard zones, potential for collapse, confined space, hazardous materials, communications, incident command, use of equipment and apparatus, crew accountability, rehabilitation, near misses, public utilities (gas, hydro), and infection control.

B.2.3.2 Injuries. If there were injuries, document them in the injuries section and be sure to include all possible contributing factors. Describe the events leading up to the accidents and include administrative forms and photographs as an appendix if required.

B.2.3.3 Safety Violations. Document violations of safety policies and procedures and any other actions that had the potential to cause a safety hazard to personnel on the scene.

Explain remedial actions taken to point out violations and reduce safety concerns.

Try to find out why violations occurred. Were there extenuating circumstances? Did the actions of personnel at the scene start a chain of events that resulted in safety violations?

Describe further actions needed to resolve a situation and prevent further occurrences.

B.2.4 Discussion. The discussion should be an objective analysis of the incident with respect to the actions taken by the Ottawa Fire Services and the safety issues associated with those actions.

This is perhaps the most difficult section of the report to write. The opportunity is presented to synthesize objectively what has been detailed in the report so far.

Discuss the implications and results of the actions that took place during the incident with the objective of presenting a "complete" picture of what occurred. Including what went right is as important as well as what went wrong. Make absolutely clear the distinction between fact and opinion.

When discussing your conclusions make sure to state their limitations.

B.2.5 Recommendations. A prioritized list of recommendations has the potential to increase safety at incidents, reduce accidents and injuries, and improve the overall performance of the department at incidents.

The objective of making recommendations in a report of this nature is to offer solutions for improving safety at the scene, reduce injuries to personnel, and increase awareness of incident safety by the members of the Ottawa Fire Services.

List your clearly stated recommendations in order of decreasing priority. If possible, offer solutions on how to carry out the recommendations through the modification or addition of policies or procedures.

B.3 Writing the Report.

B.3.1 Report Style. While difficult to define, style establishes the readability of reports. An acceptable style will encourage the intended audience to read the report. Styles differ from writer to writer, but general report requirements must be met by any writing style to produce a good report.

B.3.2 Requirements of Reports. Whatever the specific style used to prepare a technical report, four general requirements must be met to produce good reports: *clarity*, *conciseness*, *continuity*, and *objectivity*.

B.3.3 Clarity. A report of this nature must express the exact meaning of the writer to the reader. To do this, text must be clear and unambiguous. Uncommon terms must be fully defined.

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Clarity must be understood from the readers' point of view. Rough drafts must be reexamined to ensure that there is no confusion of thought. There is usually just one chance to sell the reader on the report's objectives. Present information in a logical, simple, and systematic manner.

B.3.4 Conciseness. Report quality is often inversely related to report length. Do not be disappointed if a report describing a major incident is only a few pages long. The readers will mainly be interested in the recommendations of the report and how they are supported.

Do not hide the important aspects of the report by including irrelevant details. However, do include enough information to enable the reader clearly to understand what is being described and why.

B.3.5 Continuity. Reports should tell a complete story in an interesting and logical manner. This requires that the train of thought must be consistent between succeeding sentences, paragraphs, and sections of the report. It is preferable that references to figures, tables, or supporting documents should be placed near the beginning or end of a discussion.

B.3.6 Objectivity. Technical reports should be honest and straightforward. Suspicions will be raised if attempts are made to hide meanings or cover mistakes. Be tactful and show restraint when presenting recommendations that may conflict with current policy and procedures. Try to reduce the use of opinionated and narrow-minded statements. Remember you are writing to *express*, not *impress*.

B.3.7 Writing Style. Technical reports require a formal writing style that places personal style secondary to the clear and objective transmission of information. This does not mean that a report cannot be interesting, just that a person's style must not obscure exact meaning or lead the reader away from the report's objectives.

State your purpose or objective clearly and describe concisely how you are going to do that. Continue with the presentation while ensuring you are consistent with the stated objectives. Finally, summarize your conclusions and recommendations.

Get to the point as soon as possible. Omit information that is not directly related to the conclusions. If you need to include information that may be of interest but is not directly pertinent to your conclusions, put it in an appendix.

B.3.8 Report Checklist. As an aid in revising and drafting your report, try to answer the following questions:

(1) Have you clearly stated the purpose and scope of the report?
(2) Have you accomplished your objectives that were set out in the introduction?
(3) Did you say what you wanted to say? Do you mean what you said? Can your readers misinterpret what you said?
(4) Will the important results be clear to your readers? Is the order of importance clear?
(5) Are the limitations of the conclusions clearly stated?
(6) Have you clearly separated facts from opinions? Have you made a career altering decision (CAD)?
(7) Are your recommendations realistic? Can they be carried out?

Annex C Sample ISO Incident Checklists

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

C.1 As an aid to the users of this document, examples of ISO checklists are provided. It is suggested that the ISOs develop their own form or checklist to reflect their work organization and environment.

Figure C.1(a) is an ISO incident checklist. Figure C.1(b) is a structure fire safety report form.

Figure C.1(c) is an EMS incident safety report form. Figure C.1(d) is a marine incident safety report form. Figure C.1(e) is a technical rescue incident safety report form. In addition to the base report, there are attachments for specific types of technical rescue incidents. These incidents include confined space *[see Figure C.1(f)]*, machinery or vehicle *[see Figure C.1(g)]*, rope *[see Figure C.1(h)]*, structural collapse *[see Figure C.1(i)]*, water *[see Figure C.1(j)]*, and trench *[see Figure C.1(k)]*.

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ISO INCIDENT CHECKLIST

Safety officer: _____ Incident number: _____ Date: _____

Response type: _____ Location: _____

Incident commander: _____ Sector chief(s): _____

Time of incident (1): _____ Safety on location (2): _____ Elapsed time (2-1): _____

ISO Duties

(1) Report to incident commander. Discuss incident (incident strategy, plan of action, safety plan).

(2) Walk the incident and establish a perimeter, checking the following items as they relate to safety. Advise command staff of risk assessment of incident. **Relate any immediate safety concerns to incident commander.**

✓ = OK ✕ = Issue ◯ Circle applicable category

Strategy and Tactics

- ❑ Offensive/defensive/marginal attack
- ❑ Crews following incident commander strategy?
- ❑ Ventilation (vertical/horizontal, fans, crew location, means of egress — windows/doors, smoke conditions — volume/color/force — as related to safety of personnel)
- ❑ Incident layout (site drawing, crew locations, rapid intervention team)
- ❑ Risk management (Is the action necessary?)

Hazards

- ❑ Utilities (hydro, natural gas, LP-Gas tanks)
- ❑ Environmental (heat, cold, ice, snow, rain, wind)
- ❑ Structural conditions (roof, walls, floors, facades, signs, other construction features)

(3) After the initial incident assessment, continue to observe all listed items as well as others that might affect the safety of personnel, including the following *(periodically check back to incident commander for update briefing)*:

- ❑ Accountability (set-up, Phase I, Phase II, Phase III, PAR, rapid intervention team)
- ❑ PPE (turnouts, hoods, helmet, shields, gloves, boots, SCBA)
- ❑ Communications (radios, face-to-face, crews, sectors, command)
- ❑ Hazard control zones (No-entry zone(s): red/white, hot zone: red, warm zone: yellow, cold zone: green)
- ❑ Rehabilitation (location, fluids, food, crew rotation, manpower, shelter, heat/cooling, EMS)
- ❑ Ladders (selection, placement, secured, hazards — wires/footing, two means of egress)
- ❑ Equipment use (selection/placement of hose lines, water supply, tools, safety equipment, lighting)
- ❑ Apparatus (placement, collapse/heat zone, staging, effectiveness, enough resources)

(4) Exercise emergency authority to stop or prevent imminent unsafe acts — notify incident commander immediately —ensure all personnel are aware of any special circumstances or danger.

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FIGURE C.1(a) Example of an ISO Incident Checklist. *(Source: Ottawa Fire Services — Safety Division, Ottawa, Canada.)*

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ISO INCIDENT CHECKLIST *(continued)*

(5) Other considerations:

(a) In other than imminent unsafe acts, individuals or crews violating OFS policies and procedures will be addressed through the incident commander or through the post-incident analysis process.

(b) Be aware of the need for addressing critical incident stress if necessary as per SOP.

(c) In the event of accident/injury investigation, ensure the following is considered: scene preservation, critical injury protocol, seize PPE/equipment, document the scene with digital pictures, scene sketch (locations, measurements, etc.), witnesses, and statements.

(6) Resources

❑ Inspector ❑ Police ❑ EMS ❑ Hydro ❑ Gas Co. ❑ Water branch
❑ OC Transpo ❑ Engineer ❑ Heavy equipment ❑ Hazardous materials team

Scene Sketch

(Consider including direction, street names, apparatus, hose lines, hydrants, etc.)

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FIGURE C.1(a) *Continued*

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Fulton County Fire Department

STRUCTURE FIRE SAFETY REPORT

This form is intended to communicate safety-related issues regarding a Fulton County Fire Department incident involving a fire inside or adjacent to a structure of a magnitude requiring a full residential or commercial response. The shaded areas are major categories with subcategories for various safety-related issues. This form is not intended to be used as a strategy or tactics document, although many of the issues covered will impact strategic or tactical decisions.

Incident

- **Number.** The FCFD incident number assigned by emergency communications.
- **Operational Period (Date/Time).** The date and dispatch time of the incident as logged by emergency communications.

Communications

- **On-scene Time/Tactical Mode.** An indication upon arrival and at 20-, 40- and 60-minute intervals whether suppression operations are offensive (off.) or defensive (def.)
- **Radio transmissions clearly transmitted and repeated?** This includes all radio communications. If the answer is NO, explain in the Narrative. If radio or equipment problems hinder communications, this issue should be addressed in the Narrative.

Incident Management Facility Locations

- **Command Post.** Required for **all** incidents where command is established. Identification means it is identified by radio and has the green command post light activated.
- **Base.** The location for all out-of-service resources, rehab, and the air unit. Should be utilized any time rehab is established or when members will need more than two SCBA bottles to control the fire. Identification means that base is identified by radio.
- **Staging.** The location for resources available to be deployed within 3 minutes. Should be utilized at the discretion of the incident commander. Identification means that staging is identified by radio.

All Other Sections

Did any of the items listed present a safety hazard to fire fighters? Answer the question stated. If not applicable, mark **N/A**. If the answer to any question is **NO**, explain in the Narrative of the form.

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FIGURE C.1(b) Example of a Structure Fire Safety Report. *(Source: Fulton County Fire Department, Fulton County, GA.)*

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STRUCTURE FIRE SAFETY REPORT

INCIDENT		
Number:	Address:	Date/Time:

COMMUNICATIONS							
On-scene time/ Tactical mode	Off. _____ Def. _____	20 min:	Off. _____ Def. _____	40 min:	Off. _____ Def. _____	60 min:	Off. _____ Def. _____

Radio transmissions clearly transmitted and repeated? ❑ YES ❑ NO (If NO, explain in Narrative.)

INCIDENT MANAGEMENT FACILITY LOCATIONS		
Command post:	Base:	Staging:

HEALTH HAZARDS (If NO, explain in Narrative.)

Hazard	Mitigation	YES	NO	N/A	Time
Contaminant exposure	Proper PPE utilized by all members?				
	Gross decon conducted?				
Respiratory hazards	SCBA used by **all** in an IDLH area?				
	All members rehabbed after 2 bottles?				
	SCBA utilized properly on the roof?				
	SCBA used until CO below 35 ppm?				

STRUCTURE-SPECIFIC HAZARDS (If NO, explain in Narrative.)

Hazard	Mitigation	YES	NO	N/A	Time
Arrangement	Pre-incident survey consulted?				
Ventilation	Effective ventilation conducted?				
Roof construction	Identified?				
Floor structure	Identified?				
Levels below grade	Identified?				
Levels above grade	Identified?				
Utilities	Identified? Locked out?				
Asbestos concerns	Identified?				

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FIGURE C.1(b) ***Continued***

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STRUCTURE FIRE SAFETY REPORT

HUMAN RESOURCE MANAGEMENT CONCERNS (If NO, explain in Narrative.)

Hazard	Mitigation	YES	NO	N/A	Time
Accountability	Accountability system in place?				
	Utilized according to policy?				
	PAR after fire extinguished?				
Incident management	ICS utilized?				
Span of control	Span of control maintained (scale of 1–5)?				
Rapid intervention	Crew identified?				
Hazard area(s)/zone(s)	Identified by flagging tape?				
Team integrity	Maintained in the hazard area?				
Responder fatigue	Rehab initiated?				
Responder EMS needs	ALS unit available?				
Unit rotation	Plan developed?				

PHYSICAL HAZARDS (If NO, explain in Narrative.)

Hazard	Mitigation	YES	NO	N/A	Time
Access/egress	Secondary access identified?				
Atmospheric	Air monitored by truck company?				
Thermal	Hot spots checked with imager?				
Traffic	Controls in place?				
Hazardous materials	Mitigated by Ops level members?				
Structural stability	Collapse zone identified?				
	Floor collapse potential identified?				
	Roof collapse potential identified?				
	Wall collapse potential identified?				
Other					

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FIGURE C.1(b) ***Continued***

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STRUCTURE FIRE SAFETY REPORT

EMERGENCY ACTIONS REQUIRED

(Any of the following marked "YES" must be explained in the Narrative.)

Hazard	Brief Explanation	YES	NO	N/A	Time
Task terminated?					
Emergency traffic?					
Withdrawal required?					
Abandonment required?					

NARRATIVE

REPORT REVIEW

Name of incident commander notified at the scene:	Date:	Time:
Attachments to safety report:		
Developed by incident safety officer:	Date:	Time:

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FIGURE C.1(b) *Continued*

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EMS INCIDENT SAFETY REPORT

INCIDENT	
Number:	Date/Time:
Description:	Location:

INCIDENT MANAGEMENT FACILITY LOCATIONS		
Command Post:	Base:	Staging:

HEALTH HAZARDS

Hazard	Mitigation	YES	NO	N/A	Time
Contaminant exposure	Gloves used?				
	Full EMS PPE utilized?				
Fire suppression/extrication	Proper PPE utilized?				
Sharps	Proper disposal techniques utilized?				
Biomed waste	Proper disposal techniques utilized?				

HUMAN RESOURCE MANAGEMENT CONCERNS

Hazard	Mitigation	YES	NO	N/A	Time
Accountability	Accountability system in place?				
Incident management	ICS utilized?				
	Incident commander identified?				
	EMS group supervisor identified?				
Hazard area(s)/zone(s)	Identified?				
Span of control	Span of control (scale of 1–5)?				
Responder EMS needs	ALS unit available?				
Unit rotation	Plan developed?				
Lifting patients	Proper lifting techniques observed?				

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FIGURE C.1(c) Example of an EMS Incident Safety Report. *(Source: Fulton County Fire Department, Fulton County, GA.)*

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EMS INCIDENT SAFETY REPORT

PHYSICAL HAZARDS					
Hazard	**Mitigation**	**YES**	**NO**	**N/A**	**Time**
Scene management	Scene secured to unauthorized persons?				
Coordinated tactical plan	Plan communicated?				
Electrical	Power sources secured?				
Hazardous materials	Mitigated by operations level members?				
Traffic	Controls in place?				
	Law enforcement requested to assist?				
Fire suppression	Hose line(s) in place?				
	Extinguisher(s) in place?				

NARRATIVE

REPORT REVIEW		
Incident commander notification of concerns at the scene:	Date:	Time:
Attachments to report:		
Incident safety officer:	Date:	Time:

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FIGURE C.1(c) ***Continued***

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MARINE INCIDENT SAFETY REPORT

INCIDENT		
Incident:	Incident commander:	Date Prepared:
Pier # (Address):		Time Prepared:

COMMUNICATIONS	
Command (radio) channel:	Tactical (radio) channel:
Command phone:	FAX:

SITE INFORMATION	
Incident type:	Secondary access/egress:
Primary access:	Contact name/phone:
Yard office:	Alternate phone:

INCIDENT MANAGEMENT FACILITY LOCATIONS	
Command post:	Base:
Staging:	Marine team staging:

INCIDENT ORGANIZATION	
Incident commander:	Safety officer:
Marine Div/Gr Supv:	Marine safety officer:
Vessel rep:	USCG rep:

HUMAN RESOURCE MANAGEMENT CONCERNS (If NO, explain in Narrative.)

Hazard	Mitigation	YES	NO	N/A	Time
Accountability	Accountability system in place?				
Span of control	Span of control (scale of 1–5)?				
Responder fatigue	Rehab initiated?				
Unit rotation	Plan developed?				
Hazard area(s)/zone(s)	Identified?				

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FIGURE C.1(d) Example of a Marine Incident Safety Report. *(Source: Fulton County Fire Department, Fulton County, GA.)*

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MARINE INCIDENT SAFETY REPORT

VESSEL-SPECIFIC HAZARDS (If NO, attach explanation.)					
Hazard	**Mitigation**	**YES**	**NO**	**N/A**	**Time**
Vessel stability	Stability monitoring?				
Vessel access	Primary identified?				
	Secondary identified?				
Arrangement	Vessel plans acquired?				
Hazardous cargo	Cargo manifest acquired?				
Electrical	Power plant secured?				
Confined spaces	Confined space tech. on scene?				

PHYSICAL HAZARDS (If NO, attach explanation.)					
Hazard	**Mitigation**	**YES**	**NO**	**N/A**	**Time**
Depth of water	Life jackets available?				
Tide/current	Tide tables checked?				
Hazmat mitigation	Hazmat tech. available?				
Chemical/contaminant exposure	Proper PPE identified?				
Weather	Forecast obtained?				
Wind direction/speed	Upwind escape route identified?				
Atmospheric	Air monitoring commenced?				

PLAN REVIEW		
Attachments to safety plan:		
Developed by safety officer:	Date:	Time:
Approved by incident commander:	Date:	Time:

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FIGURE C.1(d) ***Continued***

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TECHNICAL RESCUE INCIDENT SAFETY REPORT

Incident name:	Operational period (date/ time):

INCIDENT TYPE (Check all that apply.)

❑ Confined space	❑ Rope	❑ Water
❑ Machinery/vehicle	❑ Structural collapse	❑ Trench

HEALTH HAZARDS (If NO, explain in Narrative.)

Hazard	Mitigation	YES	NO	N/A	Time
Atmospheric	Atmosphere monitored?				
	Space ventilated?				
	Respiratory protection utilized?				
	Respiratory protection downgraded?				
Communications	Secondary form identified?				
	Written plan developed?				
Contaminant exposure	Contaminant identified?				
	PPE utilized?				
	Decon conducted?				
	Written records maintained?				
Stress	Debriefing/defusing scheduled?				

PHYSICAL HAZARDS (If NO, explain in Narrative.)

Hazard	Mitigation	YES	NO	N/A	Time
Access/egress	Secondary access identified?				
Arrangement	Floor/plot/area plan available?				
Electrical	Utilities locked/tagged out?				
Hazmat	Awareness of Ops level materials?				
Thermal	Fire suppression measures taken?				
Weather	Forecast obtained?				

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FIGURE C.1(e) Example of a Technical Rescue Incident Safety Report. *(Source: Fulton County Fire Department, Fulton County, GA.)*

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TECHNICAL RESCUE INCIDENT SAFETY REPORT

HUMAN RESOURCE MANAGEMENT (If NO, explain in Narrative.)					
Hazard	**Mitigation**	**YES**	**NO**	**N/A**	**Time**
Accountability	Accountability system in place?				
Coordinated tactical plan	Plan communicated?				
Hazard area(s)/zone(s)	Identified?				
Management	Incident command system implemented?				
Rapid intervention	Crew identified?				
Responder fatigue	Rehab initiated?				
Responder EMS needs	ALS unit available?				
Responder rotation	Plan developed?				
Span of control	Span of control (scale of 1–5)?				
Team integrity	Maintained in the hazard area?				

EMERGENCY ACTIONS REQUIRED (If required, explain in Narrative.)					
Hazard	**Brief Explanation**	**YES**	**NO**	**N/A**	**Time**
Task terminated					
Mayday transmitted					
Withdrawal required					
Abandonment required					

PLAN REVIEW		
Incident commander notification of concerns at the scene:	Date:	Time:
Attachments to safety plan: ❑ Narrative ❑ Structural collapse ❑ Rope ❑ Confined space ❑ Trench ❑ Transp/machinery ❑ Water		
Developed by incident safety officer:	Date:	Time:

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FIGURE C.1(e) *Continued*

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TECHNICAL RESCUE INCIDENT SAFETY REPORT

NARRATIVE

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FIGURE C.1(e) *Continued*

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TECHNICAL RESCUE — CONFINED SPACE

TYPE OF EVENT

Location	❑ Vault	❑ Tank	❑ Service area	❑ Marine vessel
	❑ Cave/pit	❑ Structure	❑ Tunnel	❑ Other: _____

Description of space:

SPECIFIC HAZARDS

Hazard	Brief Explanation	YES	NO	N/A	Time
Cause of incident identified.					
Equipment/utilities secured.					
Rescue area identified.					
Rescue scene secured.					
Permit posted.					
Access maintained.					
Rescue entrant(s) identified.					
Back-up entrant(s) identified.					
O_2 level monitored.					
LEL level monitored.					
Toxicity level monitored.					
Space confirmed free of hazmat.					
Space ventilated.					
Adequate air supplies available.					

Consulted with assistant safety officer:	Date:	Time:
Developed by incident safety officer:	Date:	Time:

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FIGURE C.1(f) Example of a Confined Space Rescue Supplemental Report. *(Source: Fulton County Fire Department, Fulton County, GA.)*

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TECHNICAL RESCUE — MACHINERY/VEHICLE

TYPE OF EVENT

Location	❑ Commercial site		❑ Residential site	
	❑ Transportation corridor		❑ Other: _____	
Type of transport/machinery	❑ Auto	❑ Truck	❑ Bus	❑ Construction
	❑ Bike	❑ Motorcycle	❑ Aircraft	❑ Other: _____

SPECIFIC HAZARDS

Hazard	Brief Explanation	YES	NO	N/A	Time
Incident command system established.					
Cause of incident identified.					
Rescue area identified.					
Rescue scene secured.					
Power source identified and controlled.					
Vehicle/machine de-energized.					
Equipment locked out/tagged out.					
Utilities tagged/locked out.					
Vehicle stabilized.					
Contents/cargo identified.					
Extrication plan communicated.					
Rescue entrant(s) identified.					
Back-up entrant(s) identified.					
Alternate extrication plan in place.					
Minimum number of rescuers utilized.					

Consulted with assistant safety officer:	Date:	Time:
Developed by incident safety officer:	Date:	Time:

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FIGURE C.1(g) Example of a Machinery or Vehicle Rescue Supplemental Report. *(Source: Fulton County Fire Department, Fulton County, GA.)*

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TECHNICAL RESCUE — ROPE

TYPE OF EVENT				
Type of rescue	❑ Low angle	❑ High angle	Feet above/below grade:	
Location	❑ Structure	❑ Equipment	❑ Road/bridge	❑ Cliff/bluff
	❑ Below grade	Other: _____		

SPECIFIC HAZARDS					
Hazard	**Brief Explanation**	**YES**	**NO**	**N/A**	**Time**
Cause of incident identified.					
Equipment/utilities secured.					
Rescue area identified.					
Rescue scene secured.					
Fall protection utilized.					
Secure anchor points selected.					
Main line staffed continuously.					
Belay line staffed continuously.					
Knots and bends safety checked.					
Hardware secured.					
Fall area secured.					
Litter attachments safety checked.					
Haul team(s) briefed on tactical plan.					

Consulted with assistant safety officer:	Date:	Time:
Developed by incident safety officer:	Date:	Time:

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FIGURE C.1(h) Example of a Rope Rescue Supplemental Report. *(Source: Fulton County Fire Department, Fulton County, GA.)*

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TECHNICAL RESCUE — STRUCTURAL COLLAPSE

COLLAPSE EVENT

Type of collapse	❑ "V"	❑ Pancake	❑ Lean-to	❑ Cantilever
	❑ "A" frame	❑ Other: _____		
Location of collapse	❑ Roof	❑ Floor	❑ Wall	❑ Total
Type of construction involved	❑ Wood frame	❑ Steel	❑ Concrete	❑ Masonry
	❑ Heavy timber	❑ Other: _____		

SPECIFIC HAZARDS

Hazard	Brief Explanation	YES	NO	N/A	Time
Cause identified.					
Secondary collapse potential identified?					
Rescue area identified.					
Collapse zone identified.					
Primary access maintained.	Shoring installed?				
	Shoring reinforced.				
Escape route identified.					
Water hazard identified.					
Overall structure stabilized.					
Rescue area identified.					
Rescue scene secured.					

Consulted with assistant safety officer:	Date:	Time:
Developed by incident safety officer:	Date:	Time:

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FIGURE C.1(i) Example of a Structural Collapse Rescue Supplemental Report. *(Source: Fulton County Fire Department, Fulton County, GA.)*

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TECHNICAL RESCUE — WATER

EVENT					
Type of water	❑ Salt	❑ Fresh	❑ Ice	❑ Storage	
Watercraft	❑ None	❑ Boat	❑ Ship	❑ Barge	❑ Jet ski
Type of incident	❑ Swimming	❑ Vessel problem	❑ Other: _____		

SPECIFIC HAZARDS					
Hazard	**Brief Explanation**	**YES**	**NO**	**N/A**	**Time**
Cause of incident identified.					
Depth of water known.					
Sources of power locked out/tagged out.					
Minimum number of rescuers.					
Throw, Tow, Row options explored.					
Rescuers secured for land-based rescue.					
Rescue craft at or near carrying capacity.					
Rescue vs. recovery mode identified.					
Flotation worn devices in proximity to water.					
FFs operating within the scope of their training.					

Consulted with assistant safety officer:	Date:	Time:
Developed by incident safety officer:	Date:	Time:

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FIGURE C.1(j) Example of a Water Rescue Supplemental Report. *(Source: Fulton County Fire Department, Fulton County, GA.)*

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TECHNICAL RESCUE — TRENCH

TYPE OF EVENT		
Location	❑ Construction site	❑ Residential site
	❑ Other site: _____	
Approximate size	Trench:	Excavation:
	Depth:	Intersecting? ❑ Yes ❑ No

SPECIFIC HAZARDS

Hazard	Brief Explanation	YES	NO	N/A	Time
Cause of incident identified.					
Equipment locked out.					
Utilities tagged/locked out.					
Rescue area identified.					
Rescue scene secured.					
Spoil pile secured.					
Access maintained.					
Rescue entrant(s) identified.					
Back-up entrant(s) identified.					
Panels safety checked.					
Shores safety checked.					

Consulted with assistant safety officer:	Date:	Time:
Developed by incident safety officer:	Date:	Time:

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FIGURE C.1(k) Example of a Trench Rescue Supplemental Report. *(Source: Fulton County Fire Department, Fulton County, GA.)*

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Annex D Informational References

D.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.

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

NFPA 472, *Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents*, 2008 edition.

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

NFPA 1581, *Standard on Fire Department Infection Control Program*, 2005 edition.

D.1.2 Other Publications.

D.1.2.1 OSHA Publications. Occupational Safety and Health Administration, 200 Constitution Avenue, N.W., Washington, DC 20210.

Title 29, United States Code, Part 654, "Duties of employers and employees."

D.1.2.2 U.S. Government Publications. U.S. Government Printing Office, Washington, DC 20402.

FA-197, *Developing Effective Standard Operating Procedures For Fire & EMS Departments*, December 1999.

Title 29, Code of Federal Regulations, Part 1910, Section 120.

D.2 Informational References. (Reserved)

D.3 References for Extracts in Informational Sections.

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

NFPA 1561, *Standard on Emergency Services Incident Management System*, 2005 edition.

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- Committee votes by written ballot on Proposals. If two-thirds approve, Report goes forward. Lacking two-thirds approval, Report returns to Committee.
- Report on Proposals (ROP) is published for public review and comment.

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3.3.78 Effective Ground-Fault Current Path. An intentionally constructed, permanent, low impedance electrically conductive path designed and intended to carry ~~underground~~ electric fault current ~~conditions~~ from the point of a ground fault on a wiring system to the electrical supply source.

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