

NFPA®

1620

Standard for
Pre-Incident Planning

2020



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NFPA® 1620

Standard for

Pre-Incident Planning

2020 Edition

This edition of NFPA 1620, *Standard for Pre-Incident Planning*, was prepared by the Technical Committee on Pre-Incident Planning. It was issued by the Standards Council on November 4, 2019, with an effective date of November 24, 2019, and supersedes all previous editions.

This edition of NFPA 1620 was approved as an American National Standard on November 24, 2019.

Origin and Development of NFPA 1620

In 1987, following a report of a large loss fire in a sprinklered warehouse in Ohio, fire service and insurance company officials met at NFPA headquarters to discuss such fires and to determine whether there were steps that could be taken to address the problem cooperatively. After a series of meetings, the group made several recommendations relating to large loss fires in sprinklered properties.

One of the recommendations was that NFPA develop a document that addressed the need for adequate pre-incident planning for such occupancies. The NFPA Standards Council assigned the project to the Fire Service Training Committee. The committee established a subcommittee with additional expertise from the insurance industry to develop a document relating to pre-incident planning for warehouse occupancies. That document, NFPA 1420, *Recommended Practice for Pre-Incident Planning for Warehouse Occupancies*, was adopted by the NFPA membership in 1993.

Following adoption of NFPA 1420, the subcommittee of the training committee that had been involved with developing NFPA 1420 felt that the scope of the document could be expanded to include all occupancies. At the urging of the subcommittee, the Standards Council established a separate technical committee to assume responsibility for the document and to expand it. The 1998 edition was the result of that work. The document was renumbered as NFPA 1620 and retitled *Recommended Practice for Pre-Incident Planning*.

The 2003 edition of NFPA 1620 incorporated editorial changes to comply with the *NFPA Manual of Style*.

The 2010 edition featured a number of technical and editorial changes. The document was completely revised and changed from a recommended practice to a standard as the technical committee established minimum requirements for developing pre-incident plans for use by personnel responding to emergencies.

In the 2010 edition, Chapters 4 through 10 addressed the pre-incident planning process, physical and site considerations, occupant considerations, water supplies and fire protection systems, special hazards, emergency operations, and pre-incident plan testing and maintenance.

In the annex, case histories, information addressing special or unique characteristics of specific occupancy classifications, and pre-incident plan field collection cards and facility data record sample forms were provided.

In the 2014 edition, the committee provided greater clarity for an all-hazards and all emergency services approach to pre-incident planning. Some definitions were modified to align with other NFPA standards. New sections were added to address combustible dusts and vacant and abandoned structures. In the annex, case studies were updated and information was provided on building marking systems and the national grid system to show the importance of using technology with pre-incident planning.

At the time of the first draft meeting in San Antonio, Texas, in April 2013, two major events occurred. On April 15, 2013, in Boston two bombs exploded near the finish line of the Boston Marathon. On April 17, 2013, there was a large explosion at a fertilizer plant in West, Texas. The committee discussed these events and included information to the standard on mass gatherings and hazardous materials.

This edition was the final edition under the leadership of Chairman John Welling. The committee extended gratitude and appreciation to Chairman Welling for his many years of leadership and vision.

The 2020 edition of NFPA 1620 incorporates a number of technical changes and a substantial rewrite for clarity. In particular, the committee addressed the relationship between pre-fire plans for buildings under construction and pre-incident plans. Pre-fire plans for buildings under construction are typically developed by those in charge of the facility or site. Pre-incident plans are typically developed by emergency response departments once a building is occupied. A great deal of the safety information in the pre-fire plan, when developed in accordance with NFPA 241, *Standard for Safeguarding Construction, Alteration, and Demolition Operations*, can be beneficial to the emergency response departments and used in their pre-incident plans.

The specialized requirements for hazardous materials, buildings under construction, and mass gathering events were moved to a revised Chapter 8, Special Considerations. As a result, the standard now has a better flow, starts with requirements that apply to all pre-incident plans, and gathers the specialized requirements in a single chapter. Guidance relating to transportation has been added. References were added to applicable NFPA standards for supplemental specialized preplanning information.

Finally, the committee revised Chapter 9, Incident Operations, and Chapter 10, Pre-Incident Plan Maintenance. Conflicting and duplicative requirements were removed, and the role of an on-site emergency representative contrasted with a site liaison was clarified.

The committee also engaged in multiple efforts to have NFPA 1620 referenced in a number of other applicable NFPA standards.

The goals of this effort are to represent NFPA 1620 across the entire library of NFPA standards and to emphasize the benefits of pre-incident planning to users.

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

Committee Scope: This Committee shall have primary responsibility for documents on the site-specific pre-incident planning for response to fires and other types of emergencies.

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NFPA 1620

Standard for

Pre-Incident Planning

2020 Edition

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

A reference in brackets [] following a section or paragraph indicates material that has been extracted from another NFPA document. Extracted text may be edited for consistency and style and may include the revision of internal paragraph references and other references as appropriate. Requests for interpretations or revisions of extracted text shall be sent to the technical committee responsible for the source document.

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

Chapter 1 Administration

1.1* Scope. This standard provides criteria for developing pre-incident plans for use by personnel responding to emergencies. Not every portion of this standard is applicable to the development of all pre-incident plans.

1.2* Purpose. The purpose of this standard is to identify a process for the development of pre-incident plans that will assist personnel in effectively managing incidents and events for the protection of occupants, responding personnel, property, and the environment.

1.3 Application.

1.3.1 The AHJ determines the location(s) to be pre-incident planned, data to be collected, and extent of documentation and training appropriate for the jurisdiction.

1.3.2 The AHJ applies the requirements in this standard to the development of a pre-incident plan.

1.3.3* When this standard is adopted by a jurisdiction, the AHJ sets a date or dates for achieving compliance with the requirements of this standard.

1.3.4* The AHJ is permitted to establish a phase-in schedule for compliance with specific requirements of this standard.

1.3.5* Policies and procedures are required to ensure the protection of proprietary or sensitive information.

N 1.4 Units and Formulas.

N 1.4.1 SI Units. Units of measurement in this standard are in accordance with the modernized metric system known as the International System of Units (SI).

N 1.4.2 Primary Values. The inch-pound value for a measurement, and the SI value given in parentheses, shall each be acceptable for use as the primary value units for satisfying the requirements of this standard.

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 130, *Standard for Fixed Guideway Transit and Passenger Rail Systems*, 2020 edition.

NFPA 170, *Standard for Fire Safety and Emergency Symbols*, 2018 edition.

NFPA 241, *Standard for Safeguarding Construction, Alteration, and Demolition Operations*, 2019 edition.

NFPA 303, *Fire Protection Standard for Marinas and Boatyards*, 2016 edition.

NFPA 424, *Guide for Airport/Community Emergency Planning*, 2018 edition.

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

NFPA 502, *Standard for Road Tunnels, Bridges, and Other Limited Access Highways*, 2020 edition.

2.3 Other Publications.

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

Title 29, Code of Federal Regulations, 1910.146, “Permit-Required Confined Spaces.”

2.3.2 Other Publications.

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

2.4 References for Extracts in Mandatory Sections.

NFPA 101®, *Life Safety Code*®, 2018 edition.

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

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

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

Chapter 3 Definitions

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

3.2 NFPA Official Definitions.

3.2.1* Approved. Acceptable to the authority having jurisdiction.

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

3.2.3 Shall. Indicates a mandatory requirement.

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

3.2.5 Standard. An NFPA Standard, the main text of which contains only mandatory provisions using the word "shall" to indicate requirements and that is in a form generally suitable for mandatory reference by another standard or code or for adoption into law. Nonmandatory provisions are not to be considered a part of the requirements of a standard and shall be located in an appendix, annex, footnote, informational note, or other means as permitted in the NFPA Manuals of Style. When used in a generic sense, such as in the phrase "standards development process" or "standards development activities," the term "standards" includes all NFPA Standards, including Codes, Standards, Recommended Practices, and Guides.

3.3 General Definitions.

3.3.1 Abandoned Building. A building that is unoccupied/unused with no intention of re-occupying and reusing.

3.3.2 Access/Convenience Stairs. Limited floor-level stair that is located between two or more common floors utilized by a single tenant and distinct from the main building staircase.

3.3.3 Anchor Store. A department store or major merchandising center that has direct access to the covered mall but in which all required means of egress is independent of the covered mall.

3.3.4 Apartment Building. A building or portion thereof containing three or more dwelling units with independent cooking and bathroom facilities.

3.3.5 Area of Refuge. An area that is either (1) a story in a building where the building is protected throughout by an approved, supervised automatic sprinkler system and has not less than two accessible rooms or spaces separated from each other by smoke-resisting partitions; or (2) a space located in a path of travel leading to a public way that is protected from the effects of fire, either by means of separation from other spaces in the same building or by virtue of location, thereby permitting a delay in egress travel from any level. [101, 2018]

3.3.6* Assembly Occupancy. An occupancy (1) used for a gathering of 50 or more persons for deliberation, worship, entertainment, eating, drinking, amusement, awaiting trans-

portation, or similar uses; or (2) used as a special amusement building, regardless of occupant load.

3.3.7 Atrium. A large-volume space created by a floor opening or series of floor openings connecting two or more stories that is covered at the top of the series of openings and is used for purposes other than an enclosed stairway; an elevator hoistway; an escalator opening; or as a utility shaft used for plumbing, electrical, air-conditioning, or communications facilities. [101, 2018]

3.3.8 Bulk Merchandising Retail Building. A building in which the sales area includes the storage of combustible materials on pallets, in solid piles, or in racks in excess of 3.7 m (12 ft) in storage height.

3.3.9* Business Occupancy. An occupancy used for account and record keeping or the transaction of business other than mercantile.

3.3.10 Clean Agent. Electrically nonconductive, volatile, or gaseous fire extinguishant that does not leave a residue upon evaporation.

3.3.11 Combustible Dust. A finely divided combustible particulate solid that presents a flash fire hazard or explosion hazard when suspended in air or the process-specific oxidizing medium over a range of concentrations.

3.3.12 Combustible Particulate Solid. Any solid material composed of distinct particles or pieces, regardless of size, shape, or chemical composition, that presents a fire hazard.

3.3.13 Competent Person. One who is capable of identifying existing and predictable hazards in the surroundings or working conditions that are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them. [1006, 2017]

3.3.14 Confined Space. A space that is large enough and so configured that an employee can bodily enter and perform assigned work; and has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry); and is not designed for continuous employee occupancy. [29 CFR 1910.146]

3.3.15 Controlled Atmosphere Warehouse. A facility for storing specialty products, such as fruits, that generally includes sealed storage rooms, with controlled temperature and air content, the most common being an atmosphere containing a high percentage of a gas such as nitrogen.

3.3.16* Covered Mall Building. A building, including the covered mall, enclosing a number of tenants and occupancies, such as retail stores, drinking and dining establishments, entertainment and amusement facilities, offices, and other similar uses, wherein two or more tenants have a main entrance into the covered mall.

3.3.17 Defend in Place. The operational response in which the action is to relocate the affected occupants to a safe place within the structure during an emergency.

3.3.18* Detention and Correctional Occupancy. An occupancy used to house four or more persons under varied degrees of restraint or security where such occupants are mostly incapable of self-preservation because of security measures not under the occupants' control.

3.3.19* Dormitory. A building or a space in a building in which group sleeping accommodations are provided for more than 16 persons who are not members of the same family in one room, or a series of closely associated rooms, under joint occupancy and single management, with or without meals, but without individual cooking facilities.

3.3.20* Educational Occupancy. An occupancy used for educational purposes through the twelfth grade by six or more persons for 4 or more hours per day or more than 12 hours per week.

3.3.21 Elevator Evacuation System. A system, including a vertical series of elevator lobbies and associated elevator lobby doors, an elevator shaft(s), and a machine room(s), that provides protection from fire effects for elevator passengers, people waiting to use elevators, and elevator equipment so that elevators can be used safely for egress. [101, 2018]

3.3.22 Emergency Operations Center. A fixed, designated area to be used in supporting and coordinating operations during emergencies.

N 3.3.23 Emergency Power Supply (EPS). An electric power source of the capacity and quality required for an EPS system.

3.3.24 Emergency Services Organization (ESO). Any public, private, governmental, or military organization that provides emergency response and other related activities, whether for profit, not for profit, or governmentally owned and operated.

3.3.25* Evacuation Capability. The ability of occupants, residents, and staff as a group either to evacuate a building or to relocate from the point of occupancy to a point of safety.

Δ 3.3.26 Event. A planned nonemergency activity (e.g., sporting event, concert, parade, mass gathering).

3.3.27 Facility. Permanent, semi-permanent, or temporary commercial or industrial property such as a building, plant, or structure, built, established, or installed for the performance of one or more specific activities or functions including all processes performed therein.

3.3.28* Facility Emergency Action Plan. A plan of designated actions by employers, employees, and other building occupants to ensure their safety from fire and other emergencies.

3.3.29 Fire Alarm System. A system or portion of a combination system that consists of components and circuits arranged to monitor and annunciate the status of fire alarm or supervisory signal-initiating devices and to initiate the appropriate response to those signals.

3.3.30* Fire Barrier. A continuous membrane or a membrane with discontinuities created by protected openings with a specified fire protection rating, where such membrane is designed and constructed with a specified fire resistance rating to limit the spread of fire, and that also restricts the movement of smoke.

3.3.31 Fire Compartment. A space within a building that is enclosed by fire barriers on all sides, including the top and bottom.

3.3.32 Fire Wall. A wall separating buildings or subdividing a building to prevent the spread of fire and having a fire resistance rating and structural stability.

3.3.33* Health Care Occupancy. An occupancy used for purposes of medical or other treatment or care of four or more persons where such occupants are mostly incapable of self-preservation due to age, physical or mental disability, or because of security measures not under the occupants' control.

3.3.34* Hotel. A building or groups of buildings under the same management in which there are sleeping accommodations for more than 16 persons and primarily used by transients for lodging with or without meals.

3.3.35 HVAC. An acronym for heating, ventilation, and air conditioning systems and their related components.

3.3.36 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, 2018]

3.3.37* Industrial Occupancy. An occupancy in which products are manufactured or in which processing, assembling, mixing, packaging, finishing, decorating, or repair operations are conducted.

3.3.38 Key Box. See 3.3.40, Lock Box.

3.3.39 Lift. A mechanically or electrically operated platform used to work at various heights.

3.3.40* Lock Box. A locked container often used to store building entry keys, pre-incident plans, and/or related data.

3.3.41 Lodging or Rooming House. A building or portion thereof that does not qualify as a one- or two-family dwelling, that provides sleeping accommodations for a total of 16 or fewer people on a transient or permanent basis, without personal care services, with or without meals, but without separate cooking facilities for individual occupants.

N 3.3.42* Mass Gatherings. An event expected to be attended by a sufficient number of people to strain the planning and response resources of the hosting community, state, province, nation, or region where it is being held.

3.3.43* Mercantile Occupancy. An occupancy used for the display and sale of merchandise.

N 3.3.44 On-Site Emergency Representative. The person responsible for coordinating and implementing the site emergency action plan during an incident.

3.3.45 Permit-Required Confined Space. A confined space that has one or more of the following characteristics: (1) contains or has a potential to contain a hazardous atmosphere; (2) contains a material that has the potential for engulfing an entrant; (3) has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section; or (4) contains any other recognized serious safety or health hazard. [OSHA 29 CFR 1910.146]

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

3.3.47 Pre-Incident Plan Developer. The individual, group, or agency responsible for developing or maintaining the pre-incident plan.

3.3.48* Process Hazard Analysis. An analysis of a process or system used to identify potential cause and effect relationships and resultant hazards or system failures.

3.3.49 Remain in Place. The operational response of directing occupants to remain inside the structure, at their locations, during an emergency.

3.3.50* Residential Board and Care Occupancy. A building or portion thereof that is used for lodging and boarding of four or more residents, not related by blood or marriage to the owners or operators, for the purpose of providing personal care services.

3.3.51* Responding Personnel. Personnel, whether public or private, available to respond to emergencies.

Δ 3.3.52 Safety Data Sheet (SDS). Formatted information provided by chemical manufacturers and distributors of hazardous products that contains information about chemical composition, physical and chemical properties, health and safety hazards, emergency response, and waste disposal of the material. [472, 2018]

3.3.53 Sally Port (Security Vestibule). A compartment provided with two or more doors where the intended purpose is to prevent continuous and unobstructed passage by allowing the release of only one door at a time.

3.3.54 Scissor Stair. Two interlocking stairways providing two separate paths of egress located within one stairwell enclosure.

3.3.55* Security Vulnerability Assessment. Security vulnerability assessment methodology identifies and assesses potential security threats, risks, and vulnerabilities and guides the chemical facility industry in making security improvements.

N 3.3.56 Site Liaison. An individual who has in-depth operating knowledge of the site or facility.

3.3.57 Sky Lobby. An intermediate floor where people can change from an express elevator that only stops at the sky lobby to a local elevator which stops at every floor within a segment of the building.

3.3.58* Smoke Barrier. A continuous membrane, or a membrane with discontinuities created by protected openings, where such membrane is designed and constructed to restrict the movement of smoke.

3.3.59 Smoke Compartment. A space within a building enclosed by smoke barriers on all sides, including the top and bottom.

3.3.60 Spill Prevention Control and Countermeasure (SPCC) Plan. A plan prepared for facilities with a chemical or chemicals that exceed certain capacities in accordance with governmental regulations.

3.3.61 Sprinkler System. For fire protection purposes, an integrated system of underground and overhead piping designed in accordance with fire protection engineering standards. The installation includes one or more automatic water supplies. The portion of the sprinkler system above ground is a network of specially sized or hydraulically designed piping installed in a building, structure, or area, generally overhead, and to which

sprinklers are attached in a systematic pattern. The valve controlling each system riser includes a device for actuating an alarm when the system is in operation. The system is usually activated by heat from a fire and discharges water over the fire area.

3.3.62 Standpipe System. An arrangement of piping, valves, hose connections, and allied equipment installed in a building or structure, with the hose connections located in such a manner that water can be discharged in streams or spray patterns through attached hose and nozzles, for the purpose of extinguishing a fire, thereby protecting a building or structure and its contents in addition to protecting the occupants. This is accomplished by means of connections to water supply systems or by means of pumps, tanks, and other equipment necessary to provide an adequate supply of water to the hose connections.

3.3.63* Storage Occupancy. An occupancy used primarily for the storage or sheltering of goods, merchandise, products, vehicles, or animals.

3.3.64 U.S. National Grid (USNG). An alphanumeric point reference system that has been overlaid on the Universal Transverse Mercator (UTM) numerical grid. Every modest-size home in a discrete area (city) can be described using 8 digits (e.g., 1234 5678). By adding a two-letter prefix (e.g., XX 1234 5678), the location is uniquely identified regionally (statewide). The U.S. National Grid is functionally identical to the Military Grid Reference System (MGRS) used by the U.S. military and NATO since 1949.

3.3.65 Vacant Building. A building that is currently unoccupied/unused and for which there is intention to **reoccupy** and reuse in the future.

Chapter 4 Pre-Incident Planning Process

4.1 General.

4.1.1* The pre-incident plan shall be developed in accordance with a format approved by the AHJ.

4.1.2* The pre-incident plan developer shall be competent and familiar with the basic information to be collected and included in the final pre-incident plan.

4.1.3 The pre-incident plan shall be a cooperative effort among the pre-incident plan developer, facility management and operations staff, and responding personnel.

4.1.4 Persons shall be consulted who are able to provide valuable input, including technical experts who do not actually respond to an incident.

4.1.5* The pre-incident plan shall be coordinated with an incident management system.

4.1.6* The pre-incident plan developer shall solicit and document information from responding agencies and personnel regarding their availability and capabilities.

4.1.7 When multiple responding agencies are involved, roles and responsibilities shall be identified in the pre-incident plan.

4.1.8* The development of a pre-incident plan for new facilities and other situations shall begin during the design phase.

4.1.9 In establishing a program for the development of pre-incident plans, the following items shall be considered:

- (1) Potential life safety hazard, including emergency responder safety
- (2) Structure size and operations complexity
- (3) Economic impact
- (4) Importance to the community
- (5) Location and seasonal variations
- (6) Presence of hazardous materials
- (7) Susceptibility to natural disasters

4.2 Pre-Incident Plan Development.

4.2.1 Once a site has been selected for pre-incident planning, the developer shall determine the information required.

4.2.2* To develop a pre-incident plan, the developers shall visit the property to become familiar with its layout, contents, construction, and protection features.

4.3* Data Collection.

4.3.1* The level of detail of the data collected shall be determined by the AHJ for the pre-incident plan.

4.3.1.1* The data shall be collected by consulting with knowledgeable personnel involved with one of the following:

- (1) Site maintenance or operations
- (2) Facility development

Δ **4.3.1.2*** The data collected shall be evaluated to determine the data that is critical to the user and that shall be included in the pre-incident plan.

4.4* Pre-Incident Plan Preparation. The AHJ shall determine a format that presents the pre-incident plan details in the most concise manner for the user(s).

4.4.1 The pre-incident plan shall be created from the data collection document(s).

Δ **4.4.2*** A standardized pre-incident plan document shall be utilized throughout the AHJ's response area.

• **4.4.3** The AHJ shall consider if it is necessary to modify operational procedures to reflect unique site conditions found during preplanning data collection and include those procedures in the pre-incident plan.

Δ **4.4.4** Electronic versions of the pre-incident plan document shall be permitted if the following three conditions are met:

- (1) The electronic connection is considered reliable by the AHJ.
- (2) The electronic connection is secured against unauthorized users.
- (3) The electronic version is protected from unauthorized changes.

4.5* Pre-Incident Plan Sketches. The symbols provided in NFPA 170 shall be utilized on pre-incident plan sketches for consistency among pre-incident plan users.

4.6 Pre-Incident Plan Distribution. Copies of the pre-incident plan shall be distributed to responsible personnel as determined by the AHJ.

4.7* Training. The pre-incident planning process shall include a provision for training and education in those

portions of the pre-incident plan that involve unique or unusual operations.

4.8* During the Incident. The pre-incident plan shall be available to the incident commander during the incident.

4.9 Post-Incident.

4.9.1 The adequacy and accuracy of the pre-incident plan shall be evaluated after an emergency or event.

4.9.2 The pre-incident plan shall be revised in accordance with 10.2.1.

Chapter 5 Physical and Site Considerations

Δ **5.1* General.** Physical elements and site considerations shall be classified into the following five groups:

- (1) Construction (*see Section 5.2*)
- (2) Building management systems and utilities (*see Section 5.3*)
- (3) External site conditions (*see Section 5.4*)
- (4) Internal and external security (*see Section 5.5*)
- (5) Fences or other barriers (*see Section 5.6*)

5.2 Construction.

5.2.1* Area, Height, and Age. The entire building size, including overall height, number of stories, square footage, and approximate or actual year of original construction, shall be determined and included in the pre-incident plan.

5.2.2 Building Features.

5.2.2.1 The construction type of the building, including the combustibility of the building, shall be noted or summarized in the pre-incident plan.

5.2.2.2 Data on the following items shall be recorded:

- (1)* Wall construction and insulation
- (2)* Roof construction
- (3)* Floor construction
- (4)* Other pertinent building features
- (5) Floor plan with room identifier and occupancy and use of each room
- (6)* Location, types, and construction of access features
- (7)* Areas where fire, products of combustion, or other contaminants could spread due to a lack of structural barriers
- (8)* Atriums
- (9)* Structural integrity of walls, roofs, and floors
- (10)* Storage arrangements
- (11) Fire command center location, access, and fire rating of the area fire walls

• **5.3* Building Management Systems and Utilities.** Building management systems and utility systems data shall be recorded in the pre-incident plan.

5.3.1* Emergency Contact Information. Emergency contact information shall be recorded in the pre-incident plan for persons responsible for the operation of building systems and utilities and for persons knowledgeable of the supervisory control and data acquisition or similar systems.

Δ 5.3.2* **Electrical Components, Power Supplies, and Energy Sources.**

5.3.2.1 Transformers. The location of transformers filled with combustible and flammable fluids shall be recorded in the pre-incident plan.

Δ **5.3.2.2* Electric Utility Rooms.** The location of electric utility rooms shall be recorded in the pre-incident plan.

5.3.2.3* Alternative Energy Sources. The location of alternative energy sources shall be recorded in the pre-incident plan.

Δ 5.3.2.4 **Emergency Power Supply.**

N **5.3.2.4.1*** The following features of the emergency power supply (EPS) shall be identified and recorded in the pre-incident plan:

- (1) Location
- (2) Fuel supplies
- (3) Areas served
- (4) Equipment served
- (5) Duration
- (6) Isolation

N **5.3.2.4.2** An EPS requiring manual action shall be recorded in the pre-incident plan.

N **5.3.2.4.3** The location of the EPS' disconnecting means shall be recorded in the pre-incident plan.

5.3.2.5 Domestic Water and Process Water. Water shutoff locations shall be recorded in the pre-incident plan, with special consideration given to any equipment or processes that require an uninterrupted supply of water.

Δ **5.3.2.6* Compressed and Liquefied Gases.** The location of compressors, storage containers, storage tanks, pressure vessels, the nearest shutoff means, and the size of storage tanks, shall be recorded in the pre-incident plan.

5.3.2.7* Steam. The location of steam lines and boilers and associated equipment, as well as shutoff valves for the steam supply, shall be recorded in the pre-incident plan.

5.3.2.8 Fuels.

5.3.2.8.1 Information regarding systems that have the capability of changing over from one fuel source to another shall be recorded in the pre-incident plan.

5.3.2.8.2 The location of all fuel pumps, tanks, regulating equipment, and shutoff valves shall be recorded in the pre-incident plan.

• **5.3.3* Elevators.**

5.3.3.1 Elevator Information. Elevator information shall be recorded in the pre-incident plan.

5.3.3.2* Elevator Lobbies. The pre-incident plan shall note the presence of any fire- or smoke-resistant elevator lobbies.

5.4 External Site Conditions.

5.4.1* Access. The pre-incident plan shall note points of access for responding personnel.

5.4.1.1 The location of key/lock box for rapid access shall be recorded on the pre-incident plan.

5.4.2* Obstacles to Access. Site conditions that would hamper access of emergency equipment, such as height, width, or weight restrictions, shall be noted in the pre-incident plan.

Δ **5.5* Internal and External Security.**

N **5.5.1 Security Measures.**

N **5.5.1.1*** Internal and external security measures shall be recorded in the pre-incident plan.

N **5.5.1.2** The pre-incident plan shall include the location of and access to keys, fobs, and RFID cards to enter secure areas.

N **5.5.1.3** The pre-incident plan shall document the performance of access control systems if primary power is lost.

Δ **5.5.2* Security Animals.** The use of security animals shall be noted in the pre-incident plan.

5.5.3 Security Systems.

5.5.3.1* Data regarding intruder security systems shall be recorded in the pre-incident plan.

5.5.3.2* Data regarding an on-site security service shall be recorded in the pre-incident plan.

5.6* Fences or Other Barriers. The height, construction, and ingress/egress points of fences or other barriers shall be recorded in the pre-incident plan.

5.7 General Overall Condition.

5.7.1 Exposures. The ground surrounding the site, structure, or building shall be surveyed to identify buildings, structures, equipment, storage, and people that could be exposed by an incident, and the information shall be noted in the pre-incident plan.

5.7.2* Environmental Impact. Information shall be collected on potential environmental contaminants. (*See Sections 8.2.4 through 8.2.10.1.*)

5.8* Communications.

5.8.1* Data regarding communications systems within the facility shall be recorded in the pre-incident plan.

5.8.2* Data regarding the functionality of radio communications shall be recorded in the pre-incident plan.

5.9 Geospatial Position.

5.9.1 Standard Coordinates. Geospatial Positioning System [e.g., U.S. National Grid (USNG)] coordinates shall be utilized to record and specify locations of the facilities, structures, assets, utility components, water supplies, and so forth.

Δ **Chapter 6 Occupancy Considerations**

6.1 Occupancy. The pre-incident plan shall document the occupancy type and use. (*See Annex C.*)

6.2 Life Safety Considerations.

6.2.1 General.

6.2.1.1 The following information shall be noted in the pre-incident plan:

- (1)* Hours of operation
- (2)* Occupant load

- (3)* Occupant accountability
- (4)* Assistance for people with self-evacuation limits
- (5)* Strategies for protecting facility occupants, other than evacuation

• **6.2.2* Means of Egress.** The number of exits, their location, and any special locking conditions, such as delayed release, limited security access, and stairwell locking, shall be noted on the pre-incident plan.

6.3 On-Site Emergency Organization.

6.3.1* Facility Emergency Action Plan. If a facility has an emergency action plan, it shall be obtained for reference during an emergency.

6.3.2* Emergency Response Capabilities. The on-site emergency response capabilities and their coordination with responding personnel shall be incorporated into the pre-incident plan.

6.3.3 Specialized Operations, Processes, and Hazards. Where occupancies contain specialized operations, processes, and hazards that can pose unique challenges in an emergency, the emergency operating procedures and personnel knowledgeable of these conditions shall be documented in the pre-incident plan.

Chapter 7 Water Supplies and Fire Protection Systems

7.1 General. Information on water supplies and fire protection systems shall be included in the pre-incident plan.

7.2* Water Supplies. Water supplies for fire suppression operations and water-based fire protection systems shall be described and identified in the pre-incident plan.

7.2.1* Required Fire Flow. The required fire flow shall be determined by the AHJ.

7.2.2* Available Water Supply.

7.2.2.1 The available water supply shall be included in the pre-incident plan.

7.2.2.2* Where the required fire flow exceeds the available water supply, the pre-incident plan shall address a response to mitigate the deficiency.

7.2.3* Public and Private Water Supply Utility Sources. The source of water supply, whether it is from a public or private water distribution system, shall be recorded in the pre-incident plan.

Δ 7.2.4 Static Water Supply Sources.

■ **7.2.4.1** Static water sources, such as ponds, lakes, rivers, tanks, and cisterns, shall be recorded in the pre-incident plan.

7.2.4.2* The pre-incident plan shall include seasonal variation information for bodies of water.

7.2.4.3 The method of drafting from the water source shall be recorded in the pre-incident plan.

7.2.5* Water Storage Tanks.

7.2.5.1 Where a water storage tank is used as a source of water, the water storage capacity shall be recorded in the pre-incident plan.

7.2.5.2* The method of obtaining water from the water storage tank shall be recorded in the pre-incident plan.

• **7.2.6* Fire Hydrants.** The location of fire hydrants shall be recorded in the pre-incident plan.

7.3* Water-Based Fire Protection Systems.

7.3.1* Sprinkler and Water Spray. Water-based systems, including type of system, location and identification of main riser valves, extent of coverage, and means of manual activation, shall be recorded in the pre-incident plan.

7.3.2* Standpipe Systems. Standpipe systems, including type of system, location and identification of control valves, location of hose valves, and presence of pressure reducing devices (PRV), shall be recorded in the pre-incident plan.

7.3.3* Fire Pumps. Fire pump(s), including location of, and access to, the fire pump and controller; rated capacity; source of water supply; and areas or systems served, shall be recorded in the pre-incident plan.

7.3.4 Fire Department Connection (FDC). Fire department connection(s) (FDC) shall be recorded in the pre-incident plan, including physical location, size, type, locking means, and area/systems supplied.

7.4* Non-Water-Based Fire Protection Systems. Non-water-based fire protection system(s) shall be recorded in the pre-incident plan, including type of system, hazard or area protected, means of activation, location of abort devices, location of control panel, location of agent supply and reserve containers, and personnel hazards following agent release.

7.5* Fire Alarm Systems. Fire alarm systems shall be recorded in the pre-incident plan, including area of coverage, location of fire alarm control unit (FACU) and remote annunciator panels, method of system activation, and method and extent of occupant notification.

7.6* Portable Fire Extinguishers. The pre-incident plan shall note the location and type of large, wheeled equipment or specialized extinguishers or both.

7.7 Smoke Control Systems.

7.7.1 Pressurization-Based Smoke Management Systems. A smoke management system(s) shall be recorded in the pre-incident plan, including location of areas served by system, location of control systems, system operation information, location of manual override controls, and location of supply and discharge arrangement.

7.7.2 Smoke and Heat Vents. Smoke and heat vents shall be recorded in the pre-incident plan, including location and type of activation (manual or automatic).

Δ Chapter 8 Special Considerations

■ **8.1 General.** The pre-incident plan shall identify and document special considerations in accordance with this chapter.

Δ 8.2* Hazardous Materials.

■ **8.2.1 General.** The pre-incident plan shall identify and document hazardous materials recognized by the AHJ that present life safety challenges, operations challenges, or other challenges to emergency responders.

8.2.1.1 Pre-incident plans for hazardous materials shall include the specifications of Sections 8.2.4 through 8.2.10.1.

8.2.2* Transient Conditions. Where hazardous materials exist intermittently, the AHJ shall determine the need to identify and record relevant information for each hazard and the length of time the hazard is expected to be present.

8.2.3* Inventory. Where the storage or use of hazardous materials has been identified as a special hazard, the pre-incident plan shall include the anticipated maximum inventory and bulk storage locations.

8.2.4 Explosives. The use or storage of explosive materials in an occupancy shall require preplanning as determined by the AHJ.

8.2.4.1 The presence, approximate amount, explosive class and division, and location of explosive materials shall be recorded in the pre-incident plan.

8.2.4.2* Materials that have the potential to explode upon exposure to fire, heat, and pressure shall be documented on the pre-incident plan.

8.2.4.3 Isolation and evacuation distances based on the type and quantity of explosives within a facility shall be recorded in the pre-incident plan.

Δ 8.2.5* Flammable and Combustible Liquids. Where the AHJ has determined that a facility using, handling, or storing flammable and combustible liquids requires pre-incident planning, the following shall be recorded in the pre-incident plan:

- (1)* Drainage, such as the location where the flammable or combustible liquid will flow and collect if spilled
- (2) Secondary containment, such as the presence of, and capacity of, built-in secondary containment features for the collection of fire-fighting water and spilled product
- (3)* Specialized extinguishing agents, such as indicated product-specific requirements

8.2.6 Toxic or Biological Agents.

8.2.6.1 The location and quantity of toxic or biological agents shall be documented in the pre-incident plan.

8.2.6.2 The impact of toxic or biological agents on neighboring or downwind occupancies shall be evaluated.

8.2.7* Radioactive Materials.

8.2.7.1 The location and type of radioactive materials and radiation-producing devices shall be recorded in the pre-incident plan.

8.2.7.2 Isolation and evacuation distances, based on the type and quantity of radioactive material within a facility, shall be recorded in the pre-incident plan.

8.2.8* Reactive Chemicals and Materials.

8.2.8.1 Reactive chemicals and materials shall be recorded in the pre-incident plan.

8.2.8.2 Isolation and evacuation distances, based on the type and quantity of reactive chemical and material within a facility, shall be recorded in the pre-incident plan.

Δ 8.2.9* Combustible Dusts. Operations that generate, collect, or store combustible dusts shall be recorded in the pre-incident plan.

8.2.10* Special Atmospheres. Any area of an occupancy that contains rooms or equipment storing or using special gases or vapors that can present a hazard to the emergency responders shall be identified in the pre-incident plan.

8.2.10.1 The pre-incident plan shall identify special agents or procedures for emergency response to hazardous material (e.g., metal dusts and water reactive metals).

N 8.3 Vacant and Abandoned Structures.

N 8.3.1* General. The pre-incident plan shall identify and document any vacant and abandoned structures recognized by the AHJ that present life safety challenges, operations challenges, or other challenges to emergency responders.

N 8.3.2 Temporary Conditions. Where vacant and abandoned structures exist temporarily, the AHJ shall determine the need to identify and record relevant information for each hazard and the length of time the hazard is expected to be present.

N 8.3.3 Physical and Site Considerations. In addition to the building characteristics identified in Chapter 5, the following details shall be considered as part of the pre-incident plan for vacant and abandoned structures:

- (1) Last known type of occupancy
- (2) Open shafts
- (3) Pits and holes due to removal of equipment
- (4) Structural degradation due to weather and vandalism
- (5) Exposed structural members
- (6) Penetrations in barriers such as walls, floors, and ceilings that allow abnormal fire travel
- (7) Combustible contents
- (8) Maze-like configuration
- (9) Blocked, damaged, or missing stairs

N 8.3.4 Potential Hazards. The following potential hazards shall be considered as part of the pre-incident plan for vacant and abandoned structures:

- (1) Unstable structure
- (2) Fall and trip hazards
- (3) Standing water in basement
- (4) Vermin
- (5) Unexpected occupancy
- (6) Ongoing criminal activity
- (7) Rapid fire growth potential
- (8) Status of utilities (e.g., active, inactive, unknown)
- (9) Holes and penetrations in floors, walls, and roofs
- (10) Fire escape access
- (11) Maze-like configuration
- (12) Previous fires in building
- (13) Unsecured structure

N 8.3.5* Structure Markings. The presence of structural markings shall be noted in the pre-incident plan.

N 8.4 Buildings Under Construction.

N 8.4.1 General. A pre-incident plan shall be developed for buildings under construction as determined by the AHJ.

N 8.4.2 Temporary Conditions.

N 8.4.2.1* Where construction features exist temporarily, the AHJ shall determine the need to identify and record relevant information for the following:

- (1) Each hazard present
- (2) Length of time the hazard is expected to be present

N 8.4.2.2 The AHJ shall make a determination as to the frequency of visits and the pre-incident plan updating required for buildings under construction.

N 8.4.3* Pre-Fire Plans. The pre-incident plan shall include and reference the fire safety measures found in the pre-fire plan when developed in accordance with NFPA 241.

N 8.4.4 Building Completion. Once the building is completed and occupied, the pre-incident plan shall be updated.

N 8.5 Mass Gatherings.

N 8.5.1 General. A pre-incident plan shall be developed for mass gatherings recognized by the AHJ that present life safety challenges, operations challenges, or other challenges to emergency responders.

N 8.5.1.1 The AHJ shall identify the need for, and level of detail for, addressing mass gatherings in the pre-incident plan.

N 8.5.2 Incident Management System. The pre-incident plan shall address the implementation of an incident management system (IMS) for the duration of the event.

N 8.5.3 Physical and Site Considerations. Where the AHJ has determined that a pre-incident plan is required for mass gatherings, the following items shall be included in the pre-incident plan and coordinated with other applicable agencies:

- (1) Unified command post
- (2) Access and ingress/egress for the following:
 - (a) Attendees
 - (b) First responders
- (3) Evacuation
- (4) Weather
- (5) Emergency medical services (e.g., routine and mass casualties)
- (6) Security
- (7) Traffic
- (8) Crowd management
- (9) Fire protection
- (10) Food operations
- (11) Pyrotechnics
- (12) Aeronautical operations
- (13) Communications
- (14) Fuels (e.g., cooking equipment, internal combustion engines, hot air balloons)
- (15) Safety data sheets (SDS) as determined by the AHJ
- (16) Contingency plans
- (17) Special operations (e.g. technical rescue, hazardous material)
- (18) Temporary structures
- (19) Other items as identified by the AHJ or mass gathering organizer that are necessary for an effective pre-incident plan

N 8.6 Transportation.

N 8.6.1* Highways and Interchanges. Pre-incident plans for highways, interchanges, road tunnels, and bridges shall be developed in accordance with NFPA 502.

N 8.6.2 Rail Lines, Locomotives, and Trains. Pre-incident plans for rail lines, locomotives and trains shall be developed in accordance with Chapter 9 of NFPA 130.

N 8.6.3 Airports. Pre-incident plans for airports shall be developed in accordance with NFPA 424.

N 8.6.4 Ports. Pre-incident plans for ports shall be developed in accordance with NFPA 303.

N 8.6.5* Bakken Crude Oil Response and Emergencies. Pre-incident plans for Bakken crude oil response and emergencies shall assess the potential impact on towns, communities, and facilities where products are moved or handled.

N 8.6.6 Flammable and Combustible Liquid Spills and Fires. Pre-incident plans for flammable and combustible liquid spills and fires shall be developed in accordance with NFPA 472.

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Chapter 9 Incident Operations

N 9.1* General. The pre-incident plan shall address the response to an incident at the facility or site and additional resources as required.

9.2* Incident Notification. The pre-incident plan shall provide critical information for responding personnel at the time of dispatch, as determined by the AHJ.

9.3 Operation Resources.

9.3.1* The pre-incident plan shall indicate the facility's emergency response capabilities and incident management system.

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N 9.3.2* The pre-incident plan developer shall consider the capabilities of initial public emergency response resources in managing emergencies for the protection of the occupants, responding personnel, property, and environment.

9.3.3 Where technical expertise from an outside agency, a building occupant, or a facility management representative is vital to successfully conduct emergency operations, the agency, occupant, or representative shall be considered an on-site emergency representative to the incident commander.

Δ 9.3.4 The on-site emergency representative shall be identified by name or job title in the pre-incident plan.

N 9.3.5 The contact information of the on-site emergency representative shall be included in the pre-incident plan.

9.3.6* Response to incidents that require additional agencies or organizations for other purposes shall be identified and included in the pre-incident plan.

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Chapter 10 Pre-Incident Plan Maintenance

10.1 General. Pre-incident plans shall be reviewed and updated at a frequency determined by the AHJ.

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10.2 Pre-Incident Plan Update.

Δ 10.2.1* Pre-incident plans shall be updated or revised whenever significant changes occur.

10.2.2 Prior editions of the pre-incident plan shall be archived or destroyed in accordance with local policy.

Δ 10.2.3 The list of all pre-incident plan recipients maintained by the pre-incident plan developer shall be used for distribution of pre-incident plan updates.

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N 10.3 Site Liaison.

N 10.3.1 The site liaison shall be responsible for providing site-specific information to the pre-incident plan developer.