



## First Revision No. 36-NFPA 914-2021 [ Detail ]

[Insert new annex text as shown below:]

### **A.15.4**

Section 15.4 is intended to highlight the importance of proper fire prevention practices when a fire protection system is out of service. It provides a broad-based pathway for the fire safety manager, as defined in 3.3.36, to follow during a fire protection system impairment. There are many stakeholders that need to be involved when a fire protection system is impaired, such as the insurance carrier, code officials, property owner, and alarm monitoring company. Some of these stakeholders might also have requirements for the property to follow during an impairment that might be outside of the requirements of the code.

NFPA 25, NFPA 72, and NFPA 914 use different terminology to refer to the individuals responsible for fire protection system impairment oversight. NFPA 25 refers to an impairment coordinator, NFPA 72 identifies a representative designated by the owner, and NFPA 914 refers to a fire safety manager. It can be advantageous for the same project team member to serve as the fire safety manager as identified in NFPA 914, the designated representative as identified in NFPA 72, and the impairment coordinator for the fire protection systems as identified in NFPA 25; however, this might not be possible for all projects.

When different individuals serve in the various roles, each must verify the impairment and shutdown procedures for the system or systems for which they are responsible. The requirements of NFPA 914 are in no way intended to negate the responsibilities of the impairment coordinator per NFPA 25 or the designated representative as identified in NFPA 72.

This section is intended to be used in conjunction with NFPA 25, NFPA 72, and the locally adopted fire code, all of which can have requirements applicable to fire protection system impairments and are in addition to what is required by NFPA 914. The requirements of NFPA 914 are intended to supplement the requirements of NFPA 25, NFPA 72, and the locally adopted fire code, not to overrule, undermine, supersede, or negate them.

## Submitter Information Verification

**Committee:** CUL-AAA

**Submittal Date:** Fri Jun 11 10:01:36 EDT 2021

## Committee Statement

**Committee Statement:** The revision adds Annex A language to supplement Section 15.4 and provide guidance on the terminology used by different standards to refer to the individuals responsible for overseeing system impairments.

**Response** FR-36-NFPA 914-2021  
**Message:**



## First Revision No. 2-NFPA 914-2021 [ Section No. 2.4 ]

### 2.4 References for Extracts in Mandatory Sections.

NFPA 1, *Fire Code*, 2018 2021 edition.

NFPA 3, *Standard for Commissioning of Fire Protection and Life Safety Systems*, 2018 2021 edition.

NFPA 4, *Standard for Integrated Fire Protection and Life Safety System Testing*, 2018 2021 edition.

NFPA 13, *Standard for the Installation of Sprinkler Systems*, 2019 edition.

NFPA 25, *Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems*, 2017 2020 edition.

NFPA 51B, *Standard for Fire Prevention During Welding, Cutting, and Other Hot Work*, 2019 edition.

NFPA 70<sup>®</sup>, *National Electrical Code*<sup>®</sup>, 2017 2020 edition.

NFPA 72<sup>®</sup>, *National Fire Alarm and Signaling Code*<sup>®</sup>, 2019 edition.

NFPA 90A, *Standard for the Installation of Air-Conditioning and Ventilating Systems*, 2018 2021 edition.

NFPA 101<sup>®</sup>, *Life Safety Code*<sup>®</sup>, 2018 2021 edition.

NFPA 557, *Standard for Determination of Fire Loads for Use in Structural Fire Protection Design*, 2016 2020 edition.

NFPA 730, *Guide for Premises Security*, 2018 2020 edition.

NFPA 731, *Standard for the Installation of Electronic Premises Security Systems*, 2017 2020 edition.

NFPA 805, *Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants*, 2015 2020 edition.

NFPA 921, *Guide for Fire and Explosion Investigations*, 2017 2021 edition.

NFPA 1141, *Standard for Fire Protection Infrastructure for Land Development in Wildland, Rural, and Suburban Areas*, 2017 edition.

NFPA 5000<sup>®</sup>, *Building Construction and Safety Code*<sup>®</sup>, 2018 2021 edition.

## Submitter Information Verification

**Committee:** CUL-AAA

**Submittal Date:** Thu Jun 03 15:37:56 EDT 2021

## Committee Statement

**Committee Statement:** Extract updates.

**Response Message:** FR-2-NFPA 914-2021



## First Revision No. 27-NFPA 914-2021 [ Section No. 3.3.52 ]

### **3.3.52** Impairment.

A condition where a fire protection system or unit, or portion thereof, is out of order, and the condition can result in the fire protection system or unit not functioning in a fire event. [~~25,2017~~ 2020 ]

#### **3.3.52.1** Emergency Impairment.

A condition where a water-based fire protection system or portion thereof is out of order due to an unplanned occurrence, or the impairment is found while performing inspection testing or maintenance activities. [~~25,2017~~ 2020 ]

#### **3.3.52.2** Preplanned Impairment.

As used in this code, a condition where a fire protection system or a portion thereof is out of service due to work that has been planned.

## Submitter Information Verification

**Committee:** CUL-AAA

**Submittal Date:** Mon Jun 07 08:07:18 EDT 2021

## Committee Statement

**Committee Statement:** Extract update.

**Response Message:** FR-27-NFPA 914-2021



## First Revision No. 30-NFPA 914-2021 [ New Section after 3.3.80 ]

### 3.3.81 Readily Accessible.

Capable of being reached quickly for operation, renewal, or inspections without requiring those to whom ready access is requisite to take actions such as to use tools (other than keys), to climb over or under, to remove obstacles, or to resort to portable ladders, and so forth. [ 70: 100]

## Submitter Information Verification

**Committee:** CUL-AAA

**Submittal Date:** Mon Jun 07 17:39:16 EDT 2021

## Committee Statement

**Committee Statement:** Given the frequency over just the last year of fires in historic structures, a definition for "readily accessible" and the application of that definition in the Code, is a much-needed change to the document. This will serve as good guidance for governing bodies and their designated fire safety managers to clarify and better ensure that fire protection equipment such as fire extinguishers are "readily accessible," which, according to the Glossary of Terms, is significantly distinguishable from "accessible." The term "readily accessible" is already being used in Chapter 13 with reference to fire extinguishers. It is not used in comparable sections in Chapter 14 or in the Annex. Additionally, the term "accessible" is also widely used in the Code. Therefore, the term "readily accessible" should receive its own definition to indicate its important differentiation from something simply being accessible, which could include dealing with obstacles in order to gain access. Where fire extinguishers and other fire protection features/equipment are located, these should be readily accessible, as defined, in order to expedite fire suppression efforts. The revision extracts the definition of "readily accessible" from NFPA 70, which is also extracted into NFPA 72.

**Response Message:** FR-30-NFPA 914-2021

**Message:**

Public Input No. 10-NFPA 914-2019 [New Section after 3.3.80]



## First Revision No. 11-NFPA 914-2021 [ Section No. 4.3.2.3 ]

### 4.3.2.3

Distinctive stylistic features or examples of skilled craftsmanship that characterize a building, structure, or site shall be ~~treated with sensitivity~~ maintained .

### Submitter Information Verification

**Committee:** CUL-AAA

**Submittal Date:** Fri Jun 04 07:51:31 EDT 2021

### Committee Statement

**Committee Statement:** The term 'sensitivity' is subjective. The term 'maintained' is direct and provides a clear objective.

**Response Message:** FR-11-NFPA 914-2021

[Public Input No. 26-NFPA 914-2020 \[Section No. 4.3.2.3\]](#)



## First Revision No. 4-NFPA 914-2021 [ Section No. 4.5.1.1 ]

### 4.5.1.1

A material that complies with any one of the following shall be considered a noncombustible material:

- (1) The material, in the form in which it is used, and under the conditions anticipated, will not ignite, burn, support combustion, or release flammable vapors when subjected to fire or heat.
- (2) The material is reported as passing ASTM E136, *Standard Test Method for Behavior Assessing Combustibility of Materials in Using a Vertical Tube Furnace at 750°C*.
- (3) The material is reported as complying with the pass/fail criteria of ASTM E136 when tested in accordance with the test method and procedure in ASTM E2652, *Standard Test Method for Behavior Assessing Combustibility of Materials in Using a Tube Furnace with a Cone-shaped Airflow Stabilizer, at 750°C*.

[5000:7.1.4.1.1]

## Submitter Information Verification

**Committee:** CUL-AAA

**Submittal Date:** Fri Jun 04 06:52:51 EDT 2021

## Committee Statement

**Committee Statement:** Extract update.

**Response Message:** FR-4-NFPA 914-2021

[Public Input No. 35-NFPA 914-2020 \[Section No. 4.5.1.1\]](#)



**First Revision No. 5-NFPA 914-2021 [ Section No. 4.5.2 ]**

#### 4.5.2 Limited-Combustible Material.

A material shall be considered a limited-combustible material where ~~all the conditions of 4.5.2(1) and 4.5.2(2), and the conditions of either 4.5.2.1 or 4.5.2.2, are one of the following is met:~~

- (1) ~~The material does not comply with the requirements for a noncombustible material in accordance with 4.5.1~~ The conditions of 4.5.2.1 and 4.5.2.2, and conditions of either 4.5.2.3 or 4.5.2.4, shall be met.
- (2) ~~The material, in the form in which it is used, exhibits a potential heat value not exceeding 3500 Btu/lb (8141 kJ/kg), when tested in accordance with NFPA 259~~ The conditions of 4.5.2.5 shall be met.

[5000:7.1.4.2]

##### 4.5.2.1

The material does not comply with the requirements for a noncombustible material in accordance with 4.5.1 . [ 5000: 7.1.4.2.1]

##### 4.5.2.2

The material, in the form in which it is used, exhibits a potential heat value not exceeding 3500 Btu/lb (8141 kJ/kg) when tested in accordance with NFPA 259 . [ 5000: 7.1.4.2.2]

##### 4.5.2.3

The material shall have ~~the a~~ structural base of noncombustible material with a surfacing not exceeding a thickness of  $\frac{1}{8}$  in. (3.2 mm) where the surfacing exhibits a flame spread index not greater than 50 when tested in accordance with ASTM E84, *Standard Test Method for Surface Burning Characteristics of Building Materials*, or ANSI/ UL 723, *Standard for Test for Surface Burning Characteristics of Building Materials*. [5000:7.1.4.2.1 7.1.4.2.3 ]

##### 4.5.2.4

The material shall be composed of materials that in the form and thickness used, neither exhibit a flame spread index greater than 25 nor exhibit evidence of continued progressive combustion when tested in accordance with ASTM E84 or ANSI/ UL 723 and are of such composition that all surfaces that would be exposed by cutting through the material on any plane would neither exhibit a flame spread index greater than 25 nor exhibit evidence of continued progressive combustion when tested in accordance with ASTM E84 or ANSI/ UL 723. [5000:7.1.4.2.2 7.1.4.2.4 ]

##### 4.5.2.5

Materials shall be considered limited-combustible materials where tested in accordance with ASTM E2965, *Standard Test Method for Determination of Low Levels of Heat Release Rate for Materials and Products Using an Oxygen Consumption Calorimeter*, at an incident heat flux of  $75 \text{ kW/m}^2$  for a 20-minute exposure, and both the following conditions are met:

- (1) The peak heat release rate shall not exceed  $150 \text{ kW/m}^2$  for longer than 10 seconds.
- (2) The total heat released shall not exceed  $8 \text{ MJ/m}^2$ .

[5000:7.1.4.2.3 7.1.4.2.5 ]

##### 4.5.2.6

~~Where the term *limited-combustible* is used in this code, it shall also include the term *noncombustible* . [ 5000: 7.1.4.2.4]~~

## Submitter Information Verification

Committee: CUL-AAA

Submission Date: Fri Jun 04 06:56:04 EDT 2021

## Committee Statement

**Committee Statement:** Extract update.

**Response Message:** FR-5-NFPA 914-2021



## First Revision No. 12-NFPA 914-2021 [ Section No. 10.6.3 ]

### 10.6.3\*

Training shall include the fire emergency response plan, use of fire protection equipment, and other elements of the approved management plan.

#### A.10.6.3

In order for fire department personnel to receive correct notification of the type and location of an emergency, as specified in 10.5.2 , training in the use of fire protection equipment should include orienting staff on how to interpret and respond promptly to signals received at the fire alarm control unit.

### Submitter Information Verification

**Committee:** CUL-AAA

**Submission Date:** Fri Jun 04 07:58:48 EDT 2021

### Committee Statement

**Committee Statement:** The destructive fire at Notre Dame Cathedral revealed a critical lack of training on the interpretation and follow-through of signals received at the fire alarm control unit. This resulted in a critical misdirection and delay by security staff, which in turn led to a delayed response from the fire brigade. The increased level of destruction of the fire and increased level of danger to the fire brigade might well have been mitigated had proper training and familiarity with the fire alarm control panel programming been undertaken. This proposed annex note addresses this critical portion of the fire emergency response plan for the end user. The second sentence proposed in PI-21 is redundant and is not incorporated in this revision.

**Response Message:** FR-12-NFPA 914-2021

Public Input No. 21-NFPA 914-2019 [Section No. 10.6.3]



## First Revision No. 32-NFPA 914-2021 [ Section No. 11.6.1 ]

### 11.6.1\* Approval Required .

Use of open flames and flame-producing devices, including but not limited to candles, oil lamps, fireplaces, forges, kilns, glassblowers, and cook stoves shall be permitted only where approved by the AHJ. shall be permitted only where approved by the AHJ.

#### A.11.6.1

Open flames and flame-producing devices include, but are not limited to, candles, oil lamps, fireplaces, forges, kilns, glassblowers, and cook stoves.

### Submitter Information Verification

**Committee:** CUL-AAA

**Submittal Date:** Tue Jun 08 13:48:49 EDT 2021

### Committee Statement

**Committee Statement:** The revision relocates the list of example open flame devices to Annex A.

**Response Message:** FR-32-NFPA 914-2021



## First Revision No. 33-NFPA 914-2021 [ New Section after 12.5.1 ]

### 12.5.2

Where assigned, security officers shall be trained in all of the following:

- (1) Notification procedures that include calling the fire department and management personnel
- (2) Function and operation of fire protection equipment
- (3) Familiarization with fire hazards
- (4) Use of construction elevators, where provided

### Submitter Information Verification

**Committee:** CUL-AAA

**Submittal Date:** Tue Jun 08 14:22:23 EDT 2021

### Committee Statement

**Committee Statement:** The revisions adds language based on NFPA 241 to require security officer training.

**Response Message:** FR-33-NFPA 914-2021



## First Revision No. 13-NFPA 914-2021 [ Section No. 13.2.2 ]

**13.2.2** Initial Meeting/Indoctrination of Contractors.

**13.2.2.1**

Prior to beginning work on the project, an introductory meeting shall be held with the contractors, subcontractors, and representatives of the historic structure.

**13.2.2.2**

All persons involved with the construction process shall be thoroughly briefed on the significance and importance of the structure, spaces, and character-defining features, prior to beginning work.

**13.2.2.3**

The initial meeting shall cover the project fire safety program, as defined in Chapter 14.

### Submitter Information Verification

**Committee:** CUL-AAA

**Submittal Date:** Fri Jun 04 08:04:12 EDT 2021

### Committee Statement

**Committee Statement:** The revision deletes the term 'indoctrination' as suggested in PI-4. The term 'meeting' is understood to include briefings.

**Response Message:** FR-13-NFPA 914-2021

[Public Input No. 4-NFPA 914-2019 \[Section No. 13.2.2\]](#)



## First Revision No. 14-NFPA 914-2021 [ Section No. 13.5.4.2 ]

### 13.5.4.2

Other automatic extinguishing systems shall be installed, tested, and maintained in accordance with the applicable requirements of the standards identified in Table 13.5.4.2.

Table 13.5.4.2 Fire Suppression System Installation Standards

<u>Fire Suppression System</u>	<u>Installation Standard</u>
Deluge foam-water sprinkler	NFPA 11
Low-, medium-, and high-expansion foam	NFPA 11
Carbon dioxide	NFPA 12
Halon 1301	NFPA 12A
Water spray fixed	NFPA 15
Deluge foam-water sprinkler	NFPA 16
Dry chemical	NFPA 17
Wet chemical	NFPA 17A
Water mist	NFPA 750
Hybrid fire extinguishing	NFPA 770
Clean agent extinguishing	NFPA 2001
Fixed aerosol fire extinguishing	NFPA 2010

## Submitter Information Verification

**Committee:** CUL-AAA

**Submission Date:** Fri Jun 04 08:07:29 EDT 2021

## Committee Statement

**Committee Statement:** By the time that the public input period for this document is closed, NFPA 770 will have been adopted by the NFPA Standards Council as an addition to their body of codes and standards. As this type of system does not fall under any of the existing systems in this table, and is a safe, viable suppression alternative for historic structures, it is proposed that the document be added to this table. In addition to hybrid systems, aerosol systems were identified as another possible option.

NFPA 16 has been withdrawn and its requirements incorporated into NFPA 11.

**Response Message:** FR-14-NFPA 914-2021

[Public Input No. 6-NFPA 914-2019 \[Section No. 13.5.4.2\]](#)



## First Revision No. 15-NFPA 914-2021 [ Section No. 14.1.5 ]

### **14.1.5\*** Initial Meeting/~~Indoctrination~~ of Contractors.

Prior to beginning work on projects, an introductory meeting shall be held with the contractors, subcontractors, and representatives of the historic structure in accordance with 13.2.2.

### Submitter Information Verification

**Committee:** CUL-AAA

**Submittal Date:** Fri Jun 04 08:11:11 EDT 2021

### Committee Statement

**Committee Statement:** The term "meeting" is understood to include briefings.

**Response Message:** FR-15-NFPA 914-2021

[Public Input No. 5-NFPA 914-2019 \[Section No. 14.1.5\]](#)



## First Revision No. 28-NFPA 914-2021 [ Section No. 14.3.4.4 ]

### 14.3.4.4

Fire extinguishers shall be readily accessible and protected from accidental damage in accordance with NFPA 10.

### Submitter Information Verification

**Committee:** CUL-AAA

**Submittal Date:** Mon Jun 07 08:58:33 EDT 2021

### Committee Statement

**Committee Statement:** The term "readily accessible" is already being utilized in a comparable section in Chapter 13, 13.5.5.2, and should be repeated here. See further substantiation in PI-10.

**Response Message:** FR-28-NFPA 914-2021

[Public Input No. 11-NFPA 914-2019 \[Section No. 14.3.4.4\]](#)



## First Revision No. 6-NFPA 914-2021 [ Section No. 14.5.3 ]

### 14.5.3 Roofing.

#### 14.5.3.1 General.

##### 14.5.3.1.1

The provisions of this section shall apply to any type of equipment including, but not limited to, chassis-mounted equipment used for preheating or heating tar, asphalt, rubberized asphalt, pitch, or similar substances for roofs, floors, pipes, or similar objects. [1:16.7.1.1 16.8.1.1 ]

##### 14.5.3.1.2

Operating kettles shall not be located inside of or on the roof of any building.

[1:16.7.2.1 16.8.2.1 ]

#### 14.5.3.2 Tar Kettle Location.

The kettle shall be operated in a controlled area. The area shall be identified by the use of traffic cones, barriers, and other suitable means as approved by the AHJ. [1:16.7.2.2 16.8.2.2 ]

#### 14.5.3.3 Kettle Supervision.

##### 14.5.3.3.1

An operating kettle shall be attended by a minimum of one employee who is knowledgeable of the operations and hazards. [1:16.7.2.3.1 16.8.2.3.1 ]

##### 14.5.3.3.2

The employee shall be within 25 ft (7.6 m) of the kettle and shall have the kettle within sight.

[1:16.7.2.3.2 16.8.2.3.2 ]

#### 14.5.3.4 Fire Extinguishers for Tar Kettles .

##### 14.5.3.4.1

Two approved 4-A:40-B:C fire extinguishers shall be provided and maintained within 25 ft (7.6 m) of the operating kettle. [1:16.7.2.4.1 16.8.2.4.1 ]

##### 14.5.3.4.2

A minimum of one approved 4-A:40-B:C fire extinguisher shall be provided and maintained on the roof in close proximity to the roofing operations while the roofing material is being applied.

[1:16.7.2.4.2 16.8.2.4.2 ]

#### 14.5.3.5 Exits.

##### 14.5.3.5.1

Roofing kettles shall not block exits, means of egress, gates, roadways, or entrances.

[1:16.7.2.5.1 16.8.2.5.1 ]

##### 14.5.3.5.2

Kettles shall not be closer than 10 ft (3 m) from exits or means of egress.

[1:16.7.2.5.2 16.8.2.5.2 ]

#### 14.5.3.6 Liquefied Petroleum Gas (LP-Gas).

##### 14.5.3.6.1

Cylinders or containers used for fueling tar kettles shall be protected against tampering and vandalism.

**14.5.3.6.2**

Containers shall be kept a minimum distance of 20 ft (6 m) from combustible materials or spare containers.

**14.5.3.6.3**

When possible, cylinders and containers shall be placed in a secured area for protection against tampering.

**14.5.3.6.4**

Cylinders or containers that cannot be secured in a protected area shall have the dome covers locked and secured, or the valve handle shall be removed or secured in the "off" position.

**14.5.3.6.5**

Storage of LP-Gas cylinders on rooftops shall not be permitted.

**Submitter Information Verification**

**Committee:** CUL-AAA

**Submittal Date:** Fri Jun 04 07:09:39 EDT 2021

**Committee Statement**

**Committee Statement:** Extract update.

**Response Message:** FR-6-NFPA 914-2021



## First Revision No. 29-NFPA 914-2021 [ Section No. 14.11.2 ]

### 14.11.2

At least one portable fire extinguisher selected and installed in accordance with NFPA 10 shall be readily accessible on each floor near each usable stairway.

### Submitter Information Verification

**Committee:** CUL-AAA

**Submittal Date:** Mon Jun 07 08:59:52 EDT 2021

### Committee Statement

**Committee Statement:** A comparable section in Chapter 13, 13.5.5.2, uses the term "readily accessible" and this section should match that wording. See additional substantiation for PI-10.

**Response Message:** FR-29-NFPA 914-2021

[Public Input No. 12-NFPA 914-2019 \[Section No. 14.11.2\]](#)



## First Revision No. 16-NFPA 914-2021 [ Section No. 15.1.1 ]

### 15.1.1\*

This chapter shall establish the requirements for critical and regular inspection, testing, and maintenance of protection features, systems, and devices in historic structures and districts.

#### A.15.1.1

History has shown that performance reliability of fire protection systems and equipment increases where comprehensive inspection, testing, and maintenance procedures are enforced. Diligence in carrying out these procedures is important.

### Submitter Information Verification

**Committee:** CUL-AAA

**Submittal Date:** Fri Jun 04 08:22:29 EDT 2021

### Committee Statement

**Committee Statement:** This important annex note, which is also in NFPA 909, clarifies that diligence in carrying out the procedures for inspection, testing and maintenance is a vital factor in performance reliability, as historical data concurs.

**Response Message:** FR-16-NFPA 914-2021

Public Input No. 3-NFPA 914-2019 [Section No. 15.1.1]



## First Revision No. 17-NFPA 914-2021 [ Section No. 15.3.1 ]

### 15.3.1 Requirements.

All fire protection systems shall be inspected, tested, and maintained in full compliance with the manufacturer's recommendations and with the standards identified in Table 15.3.1, as applicable.

Table 15.3.1 Inspection, Testing, and Maintenance Codes and Standards — Fire Protection Systems

<u>Type of System</u>	<u>NFPA Standard</u>
Integrated systems	NFPA 4
Carbon dioxide	NFPA 12
Halon 1301	NFPA 12A
Dry chemical	NFPA 17
Wet chemical	NFPA 17A
Water-based	NFPA 25
Alarm and detection	<i>NFPA 72</i>
Smoke control	NFPA 92
Cooking equipment	NFPA 96
Smoke and heat venting	NFPA 204
Water mist	<del>NFPA 750</del> <u>NFPA 25</u>
<u>Hybrid fire extinguishing</u>	<u>NFPA 770</u>
Clean agent	NFPA 2001
<u>Fixed aerosol fire extinguishing</u>	<u>NFPA 2010</u>

### Submitter Information Verification

**Committee:** CUL-AAA

**Submittal Date:** Fri Jun 04 08:24:35 EDT 2021

### Committee Statement

**Committee Statement:** The revision adds a reference to NFPA 770 as suggested in PI-7. In addition, it replaces the reference to NFPA 750 for water mist systems with NFPA 25, which is the applicable ITM standard for such systems. It also adds a reference to NFPA 2010 for fixed aerosol extinguishing systems consistent with FR-14.

**Response Message:** FR-17-NFPA 914-2021

Public Input No. 7-NFPA 914-2019 [Section No. 15.3.1]



## First Revision No. 18-NFPA 914-2021 [ Section No. 15.3.4.2 ]

### 15.3.4.2

Maintenance and repairs shall be performed to keep all fire protection systems operable.  
~~Necessary repairs shall be made.~~

## Submitter Information Verification

**Committee:** CUL-AAA

**Submittal Date:** Fri Jun 04 08:27:28 EDT 2021

## Committee Statement

**Committee Statement:** In light of the disastrous fires in Scotland and Brazil within a three month span, and the recent destructive fire at Notre Dame Cathedral in Paris, it is imperative that the importance of repair work to fire protection systems be heightened. The word "necessary" is subjective, leaving it to the governing body and/or fire safety manager to decide what is a "necessary" repair and what, in their view, is not. If fire protection systems are being inspected and tested according to the respective documents referenced in this chapter, which is the expectation, then an item notated for repair as a result of such inspections and tests is a necessary repair on the basis of that NFPA-based inspection and test, not on the basis of a subjective determination of what is a necessary repair. Allowing a subjective process to take place with regard to repair work is to gamble with precious, irreplaceable resources. The removal of this subjective language still gives the end-user the flexibility to determine how those necessary repairs will take place in line with their protection plan rather than if they should take place at all. This revision follows the language that was approved by the committee to the same corresponding section in NFPA 909.

**Response Message:** FR-18-NFPA 914-2021

[Public Input No. 1-NFPA 914-2019 \[Section No. 15.3.4.2\]](#)



## First Revision No. 19-NFPA 914-2021 [ Section No. 15.4.2.2 ]

### 15.4.2.2

The fire safety manager shall be responsible for verifying that written procedures for impairments are followed ~~before~~ upon authorizing a ~~system~~ preplanned impairment. (See 15.4.3.)

## Submitter Information Verification

**Committee:** CUL-AAA

**Submittal Date:** Fri Jun 04 08:42:40 EDT 2021

## Committee Statement

**Committee Statement:** Many of the steps in the written procedure outlined in 15.4.3 cannot be "followed before authorizing an impairment". However, this section states as much, namely that the procedures in 15.4.3 must be verified as being "followed" prior to authorization of the impairment. This re-wording clarifies the intent of the committee by providing a clearer progression of events. Once the fire safety manager authorizes the preplanned impairment, she or he has to verify the procedure for that impairment is followed. The proposed language was editorially revised for consistency with NFPA style.

**Response Message:** FR-19-NFPA 914-2021

[Public Input No. 22-NFPA 914-2019 \[Section No. 15.4.2.2\]](#)



## First Revision No. 20-NFPA 914-2021 [ Section No. 15.4.4 ]

### 15.4.4 Restoring Systems to Service.

When all impaired systems are restored to operational service, the ~~impairment coordinator~~ fire safety manager shall verify that the following procedures have been completed:

- (1) Any necessary inspections and tests required in accordance with 15.3.1 for the fire protection system or equipment involved have been conducted to verify that affected systems and equipment are operational.
- (2) Those individuals listed in 15.4.3.2(5) have been advised that protection has been restored.
- (3) Impairment tags shall have been removed.

### Submitter Information Verification

**Committee:** CUL-AAA

**Submission Date:** Fri Jun 04 08:50:19 EDT 2021

### Committee Statement

**Committee Statement:** The fire safety manager is the duly appointed person per the Code to authorize and oversee the impairment procedure, which includes the restoral procedure following impairment. However, there is no mention of the fire safety manager when it comes to restoring systems to normal service. The fire safety manager authorizes the impairment, oversees and verifies procedures are being followed during the impairment and then a previously unmentioned impairment coordinator suddenly appears on the scene to oversee restoring systems to service. There is no mention of an "impairment coordinator" in the Code other than this one instance. Therefore, this revision is in line with previous subsections which place the authority and oversight for all impairment procedures on the fire safety manager. Paragraph A.3.3.36 already clarifies that other personnel designated by the fire safety manager can assume responsibilities for fire protection, such as impairment procedures. Therefore, reference in Chapter 15 to another individual as an impairment coordinator is unnecessary and reduces confusion over the lines of authority during impairment procedures.

**Response Message:** FR-20-NFPA 914-2021

[Public Input No. 23-NFPA 914-2019 \[Section No. 15.4.4\]](#)



## First Revision No. 34-NFPA 914-2021 [ Section No. 16.2.1 ]

### 16.2.1

The event coordinator and fire safety manager shall ~~ensure~~ coordinate their efforts so that the number of occupants admitted to the building is monitored and controlled, ~~and so that~~ the permitted occupant load ~~does is not exceed~~ exceeded based on the means of egress capacity of the means of egress, for and the number of exits ~~required by~~ provided in accordance with the applicable code.

### Submitter Information Verification

**Committee:** CUL-AAA

**Submittal Date:** Fri Jun 11 08:15:09 EDT 2021

### Committee Statement

**Committee Statement:** Paragraph 1.5.1.1 makes it clear that the fire safety manager shall be assigned by the governing body to "administer and enforce the fire safety requirements of this code." With regard to issues of occupant load and ensuring safe egress during special events, the fire safety manager should be involved in this vital life safety aspect of the event coordination. This should not be left solely to the event coordinator. The phrase "Where large crowds are anticipated" is vague and unenforceable. The phrase "...so that the occupant load does not exceed the capacity of the means of egress, for the number of exits required by the applicable code" has been revised for clarity.

**Response Message:** FR-34-NFPA 914-2021

**Message:**

Public Input No. 8-NFPA 914-2019 [Section No. 16.2.1]



## First Revision No. 7-NFPA 914-2021 [ Section No. 16.7.2.4 ]

### 16.7.2.4

Exposed foamed plastic materials and unprotected materials containing foamed plastic used for decorative purposes or stage scenery shall have a heat release rate not exceeding 100 kW where tested in accordance with one of the following:

- (1) ANSI/UL 1975, *Standard for Fire Tests for Foamed Plastics Used for Decorative Purposes*
- (2) NFPA 289 using the 20 kW ignition source

[**101**:12.7.4.3; **101**:13.7.4.3]

### Submitter Information Verification

**Committee:** CUL-AAA

**Submission Date:** Fri Jun 04 07:16:55 EDT 2021

### Committee Statement

**Committee Statement:** Extract update.

**Response Message:** FR-7-NFPA 914-2021



## First Revision No. 8-NFPA 914-2021 [ Section No. A.7.3.3.1.3 ]

### A.7.3.3.1.3

Both NFPA 101 and NFPA 914 recognize that fully complying with the requirements of any code or standard might not be practicable in a historic building or structure. NFPA 914 is predicated upon this approach. In addition, NFPA 101 also recognizes this potential problem.

The following text is from the 2018 2021 edition of NFPA 101:

The provisions of this *Code* shall be permitted to be modified by the authority having jurisdiction for buildings or structures identified and classified as historic buildings or structures where it is evident that a reasonable degree of safety is provided. [101:4.6.4.2]

In existing buildings, it is not always practical to strictly apply the provisions of this *Code*. Physical limitations can cause the need for disproportionate effort or expense with little increase in life safety. In such cases, the authority having jurisdiction needs to be satisfied that reasonable life safety is ensured. [101:A.4.6.5]

In existing buildings, it is intended that any condition that represents a serious threat to life be mitigated by the application of appropriate safeguards. It is not intended to require modifications for conditions that do not represent a significant threat to life, even though such conditions are not literally in compliance with the *Code*. [101:A.4.6.5]

An example of what is intended by 4.6.5 [of NFPA 101] would be a historic ornamental guardrail baluster with spacing that does not comply with the 4 in. (100 mm) requirement. Because reducing the spacing would have minimal impact on life safety but could damage the historic character of the guardrail, the existing spacing might be approved by the authority having jurisdiction. [101:A.4.6.5]

## Submitter Information Verification

**Committee:** CUL-AAA

**Submittal Date:** Fri Jun 04 07:26:48 EDT 2021

## Committee Statement

**Committee Statement:** Extract update.

**Response Message:** FR-8-NFPA 914-2021



## First Revision No. 38-NFPA 914-2021 [ Section No. A.7.3.4.2 ]

### A.7.3.4.2

The following documents have an established record of meeting code objectives through a fire risk indexing approach:

- (1) Chapters 4 through 9 of the 2019 edition of NFPA 101A
- (2) *Wisconsin Administrative Code*, Subchapter IV, Building Evaluation Method, Chapter Comm. 70–Historic Buildings, 2005
- (3) Chapter 12, “Compliance Alternatives,” International Existing Building Code, 2003 edition

### Submitter Information Verification

**Committee:** CUL-AAA

**Submittal Date:** Fri Jul 16 10:42:39 EDT 2021

### Committee Statement

**Committee Statement:** Editorial - edition years of NFPA standards not required where referenced. See Annex V for most current edition.

**Response Message:** FR-38-NFPA 914-2021



## First Revision No. 21-NFPA 914-2021 [ Section No. A.9.10 ]

### A.9.10

Following the terrorist attacks of September 11, 2001, there has been a strong, multinational concern with the security of locations that are vulnerable to terrorism and potential terrorist attack. Unfortunately, security improvements have often been undertaken in the absence of comprehensive security planning. Decisions have been made without an adequate understanding of the actual risks or the significant adverse damages of those actions to the integrity of the very monuments society has chosen to commemorate and protect. Too often, expedient decisions have resulted in the introduction of incompatible features that compromise the character and integrity of the historic structure and landscape.

Historic access and traditional circulation patterns have been altered, urban settings destroyed, landscapes changed, and the public's perception of the historic "sense of place" sacrificed. It can be argued that such improvements have made some sites more vulnerable to terrorist attack. For example, a group of visitors queuing up at controlled entrances to many sites outside the protected perimeters of the historic property is a much easier target and more vulnerable to terrorist attack.

As an alternative to a formulaic approach to security, other property-specific security approaches that are visually integrated and designed to preserve the property's historic character should be explored. In some circumstances, security concerns can be substantially addressed through management operational systems, including increased staff training on observation and monitoring techniques and threat-level response and management. These actions require little or no alteration to the property.

Comprehensive security planning requires procedures for post-incident responses, such as the establishment of damage limitation team infrastructure, evacuation planning, implementation of the recovery or continuity plan, and better and quicker media response. Such procedures should make use of ~~readily accessible~~ social media and remote communications technology to promote efficient coordination among affected individuals.

The governing body or a designated representative should develop a close relationship with local law enforcement agencies to familiarize them with the property and should ask them to include the property in patrol routes. Open lines of communication with the local police help provide information on crime and crime trends in the neighborhood or area. In addition, active participation in security and preservation associations is a means of sharing common security concerns and solutions.

## Submitter Information Verification

**Committee:** CUL-AAA

**Submittal Date:** Fri Jun 04 08:58:07 EDT 2021

## Committee Statement

**Committee Statement:** The term "readily accessible," which is now defined in relation to equipment, is deleted here because it is unnecessary and is not applicable.

**Response Message:** FR-21-NFPA 914-2021

[Public Input No. 13-NFPA 914-2019 \[Section No. A.9.10\]](#)



## First Revision No. 31-NFPA 914-2021 [ Section No. A.11.4 ]

### A.11.4

A high standard of housekeeping is ~~the most important~~ a critical factor in the prevention of fire. Maintaining this high standard of housekeeping is every employee's responsibility; however, it is the ~~facility director who assumes the final responsibility~~ owner, governing body, or responsible party for the historic structure or district who is ultimately responsible for this important activity.

## Submitter Information Verification

**Committee:** CUL-AAA

**Submission Date:** Tue Jun 08 12:32:22 EDT 2021

## Committee Statement

**Committee Statement:** To say that housekeeping is the most important factor in fire prevention is a highly subjective statement, as an equally persuasive argument could be made that periodic, regular ITM is the most important factor in fire prevention. Changing this wording reflects a more objective approach to fire prevention without minimizing the importance of housekeeping. The term 'facility director' is not defined by the code. Use of 'owner, governing body, or responsible party' is consistent with administrative requirements of Chapter 1 and other language in Annex A.

**Response Message:** FR-31-NFPA 914-2021

[Public Input No. 2-NFPA 914-2019 \[Section No. A.11.4\]](#)



**First Revision No. 23-NFPA 914-2021 [ Section No. D.2 ]**



## **D.2** Glossary of Fire Protection Systems.

Table D.2(a) through Table D.2(d) describe detection, alarm, and extinguishing systems that are appropriate for use in cultural properties. Included are comments about the intended or optimum applications of each system and recommendations for system applications. Insofar as possible, nontechnical terminology has been used so that the information presented can be readily understood by anyone who has been delegated responsibility for fire safety.

Table D.2(a) Classification of Fire Detection Systems by Method of Detection

<u>Type</u>	<u>Description</u>	<u>Comments</u>
1. Smoke detection systems	<p>Systems that use devices that respond to the smoke particles produced by a fire. They operate on the ionization, photoelectric, cloud chamber, or other smoke particle analysis principle of operation. Spot-type smoke detectors use either the ionization principle of operation or the photoelectric principle. Line-type smoke detectors use the photoelectric principle. Aspiration-type smoke detectors use the ionization, photoelectric, cloud chamber, or other particle analysis principle of operation.</p> <p>Properly installed, smoke detectors can detect smoke particles in very early stages of fire in the areas where they are located. The selection of a particular detector or mix of detectors should be based on building and fire-load conditions and made by a fire protection specialist.</p>	<p>These systems are intended for early warning. Some are designed for installation in ventilation ducts. (See <i>NFPA 72</i>.)</p>
2. Heat detection systems	<p>Systems that use heat-responsive devices of either the spot or line type. They are mounted either on exposed ceiling surfaces or a sidewall near the ceiling. Heat detectors are designed to respond when the operating element reaches a predetermined temperature (fixed-temperature detector), when the temperature rises at a rate exceeding a predetermined value (rate-of-rise detector), or when the temperature of the air surrounding the device reaches a predetermined level, regardless of the rate of temperature rise (rate compensation detector).</p>	<p>These systems are relatively low cost. They cannot detect small, smoldering fires. Line-type detectors can be installed in a relatively inconspicuous manner by taking advantage of ceiling designs and patterns. (See <i>NFPA 72</i>.) The air temperature surrounding a fixed-temperature device at the time it operates usually is considerably higher than the rated temperature, because it takes time for the air to raise the temperature of the operating element to its set point, a condition called thermal lag.</p>

<u>Type</u>	<u>Description</u>	<u>Comments</u>
	Some devices incorporate both fixed-temperature and rate-of-rise detection principles. Spot-type detectors are usually small devices a few inches in diameter. Line-type detectors are usually lengths of heat-sensitive cable or small-bore metal tubing.	Rate compensation devices compensate for thermal lag and respond more quickly when the surrounding air reaches the set point. Given the monetary value and irreplaceable nature of typical museum collections, early-warning, air-sampling-type detector systems should be considered for optimum protection. These systems are also less conspicuous and minimize disruption to architectural integrity. Proper selection of a particular detector or a mix of detectors should be based on building and fire-load conditions and made by a fire protection specialist.
3. Flame detection systems	Systems that use devices that respond to radiant energy visible to the human eye (approximately 4000 to 7000 angstroms) or to radiant energy outside the range of human vision [usually infrared (IR), ultraviolet (UV), or both]. Flame detectors are sensitive to glowing embers, coals, or actual flames with energy of sufficient intensity and spectral quality to initiate the detector.	Because flame detectors are essentially line-of-sight devices, special care should be taken in their application to ensure that their ability to respond to the required area of fire in the zone that is to be protected is not unduly compromised by the permanent or temporary presence of intervening structural members or other opaque objects or materials. (See <i>NFPA 72</i> .)

Table D.2(b) Classification of Fire Alarm Systems by Method of Operation

<u>Type</u>	<u>Description</u>	<u>Comments</u>
1. Local fire alarm system	An alarm system operating in the protected premises that is responsive to the operation of a manual fire alarm box, waterflow in a sprinkler system, or detection of a fire by a smoke-, heat-, or flame-detecting system.	The main purpose of this system is to provide an evacuation alarm for the occupants of the building. Someone must always be present to transmit the alarm to fire authorities. (See <i>NFPA 72</i> .)
2. Auxiliary fire alarm system	An alarm system that utilizes a standard municipal fire alarm box to transmit a fire alarm from a protected property to municipal fire headquarters. These alarms are received on the same municipal equipment and are carried over the same transmission lines as are used to connect fire alarm boxes located on streets. Operation is initiated by the local fire detection and alarm system installed at the protected property.	Some communities accept this type of system and others do not. (See <i>NFPA 72 and NFPA 1221</i> .)
3. Central station fire alarm system	An alarm system that connects protected premises to a privately owned central station and that monitors the connecting lines constantly and records any indication of fire, supervisory, or other trouble signals from the protected premises. When a signal is received, the central station takes such action as is required, such as informing the municipal fire department of a fire or notifying the police department of intrusion.	This is a flexible system. It can handle many types of alarms, including trouble within systems at protected premises. (See <i>NFPA 72</i> .)

<u>Type</u>	<u>Description</u>	<u>Comments</u>
4. Remote station fire alarm system	An alarm system that connects protected premises over telephone lines to a remote station, such as a fire station or a police station. It includes separate receivers for individual functions being monitored, such as fire alarm signal or sprinkler waterflow alarm.	(See NFPA 72.)
5. Proprietary fire alarm system	An alarm system that serves contiguous or noncontiguous properties under one ownership from a central supervising station at the protected property. It is similar to a central station system but is owned by the protected property.	This system requires 24-hour attendance at a central supervising station. (See NFPA 72.)
6. Emergency voice/alarm communication system	A system used to supplement any of the systems listed above by permitting voice communication throughout a building so that instructions can be given to building occupants. During a fire emergency, prerecorded messages can be played, fire department personnel can transmit live messages, or both.	(See NFPA 72.)

Table D.2(c) Classification of Fire Detection and Alarm Systems by Type of Control

<u>Type</u>	<u>Description</u>	<u>Comments</u>
1. Conventional system	A fire detection system that utilizes copper wire to interconnect all initiating devices and signaling appliances to the fire alarm control panel. The wiring must be installed in a closed-loop fashion for each zone circuit to ensure proper electrical supervision or monitoring of the circuit conductors for integrity.	This is the most common type of fire alarm system. It provides basic alarm, trouble, and supervisory signal information and is used for small- to medium-size systems.
2. Microprocessor-based system	Identical to the conventional system, with the exception that the fire alarm control panel has more features available, such as smoke detector alarm verification and system walk test. Some of these systems "multiplex" information to their attached remote annunciators over four conductors rather than one conductor per zone.	Most modern systems are microprocessor-based to provide features desired by installers, owners, and fire departments.
3. Addressable multiplex system	A system that utilizes initiating devices and control points, each assigned a unique three- or four-digit number called the detector's "address." The fire alarm control panel's microprocessor is programmed with the address number. All activity by or affecting the device is monitored and recorded at the control panel.	This type of system provides more detailed information about alarm, trouble, or supervisory conditions. Essentially, the system is zoned by device rather than by an entire floor or area. The equipment for addressable multiplex systems is more costly, but, generally, installation costs are reduced substantially, operations are more flexible, and maintenance is more efficient.

<u>Type</u>	<u>Description</u>	<u>Comments</u>
4. Addressable analog multiplex system	Identical to the addressable multiplex system, with the exception that the smoke and heat detectors connected to the microprocessor are analog devices.  The analog devices sense the fire signature and continuously send information to the control panel microprocessor, which determines the sensitivity, alarm point, and maintenance window of the analog device. Accordingly, this system is also called "intelligent" or "smart."	Analog systems provide the maximum flexibility and information that can be obtained from a fire alarm system. These computer-based systems require sophisticated technical expertise to maintain and service which should be considered in the design process. Addressable fire detection systems allow for the execution of preprogrammed sensitivity levels for smoke detectors based on the time of day or days of the week, ranging from a low-sensitivity level when the premises are occupied to a high-sensitivity level when only employees are present or the protected premises are vacant.
5. Wireless system	A system that uses battery-powered initiating devices, which transmit the alarm or trouble signal to a receiver/control panel. Each initiating device can be individually identified by the control panel for annunciation purposes.	The battery in each initiating device lasts for a minimum of 1 year but needs to be replaced when the initiating device transmits a battery depletion signal to the control panel. Wireless systems can be used where it is not possible or feasible to install the electrical cable needed by hard-wired systems.

Table D.2(d) Glossary of Fire-Extinguishing Systems

<u>Type</u>	<u>Description</u>	<u>Comments</u>
1. Wet-pipe automatic sprinkler system	A permanently piped water system under pressure, using heat-actuated sprinklers. When a fire occurs, the sprinklers exposed to the high heat operate and discharge water individually to control or extinguish the fire.	This system automatically detects and controls fire. It should not be installed in spaces subject to freezing and might not be the best choice in spaces where the likelihood of mechanical damage to sprinklers or piping is high, such as in low-ceiling areas, and could result in accidental discharge of water. Where there is a potential for water damage to contents, such as books, works of art, records, and furnishings, the system can be equipped with mechanically operated on-off or cycling heads to minimize the amount of water discharged ( <i>see type 3</i> ). In most instances, the operation of only one sprinkler will control a fire until the arrival of fire fighters. Often the operation of a sprinkler system will make the use of hose lines by fire fighters unnecessary, thus reducing the amount of water put onto the fire and the subsequent amount of water damage. ( <i>See NFPA 13 and NFPA 22.</i> )
2. Preaction automatic sprinkler system	A system that employs automatic sprinklers attached to a piping system containing air that might or might not be under pressure, with a supplemental fire detection system installed in the same area as the sprinklers. Actuation of the fire detection system by a fire opens a valve	This system automatically detects and controls fire. It can be installed in areas subject to freezing. Because it minimizes the accidental discharge of water due to mechanical damage to sprinklers or piping, it is useful in areas where system leaks would pose a hazard for works of art, books, records, and other materials susceptible to damage or destruction by water. Such water

<u>Type</u>	<u>Description</u>	<u>Comments</u>
	that allows water to flow into the sprinkler system piping and to be discharged from any sprinklers that are opened subsequently by the heat from the fire.	damage is rare, however, resulting in only 1.6 accidental discharges per year per 1 million sprinklers in use. Failure of the actuation system would prevent operation of the preaction sprinkler system, except by manual operation of the water supply valve, and thus presents a potential failure mode that reduces the reliability of this system compared with wet-pipe systems. Furthermore, a preaction system requires a significantly higher level of regular maintenance, involving additional potential failure modes that further reduce its reliability relative to wet-pipe systems. Most water-sensitive items can be salvaged from wetting but not from ashes. (See <i>NFPA 13 and NFPA 22.</i> )
3. On-off automatic sprinkler system	A system similar to the preaction system, except that the fire detector operation acts as an electrical interlock, causing the control valve to open at a predetermined temperature and close when normal temperature is restored. If the fire rekindles after its initial control, the valve reopens, and water again flows from the opened sprinklers. The valve continues to open and to close in accordance with the temperature sensed by the fire detectors. Another type of on-off system is a standard wet-pipe system with on-off sprinklers. Here, each individual sprinkler is equipped with a temperature-sensitive device that causes the sprinkler to open at a predetermined temperature and to close automatically when the temperature at the sprinkler is restored to normal.	In addition to the favorable feature of the automatic wet-pipe system, these systems have the ability to automatically stop the flow of water when no longer needed, thus eliminating unnecessary water damage. (See <i>NFPA 13 and NFPA 22.</i> )
4. Dry-pipe automatic sprinkler system	A system that employs automatic sprinklers attached to a piping system containing air under pressure. When a sprinkler operates, the air pressure is reduced, thus allowing the dry-pipe valve to open and to allow water to flow through any opened sprinklers.	(See <i>type 1.</i> ) This system can protect areas subject to freezing. Water supply must be in a heated area. (See <i>NFPA 13 and NFPA 22.</i> )
5. Standpipe and hose system	A piping system in a building to which hoses are connected for emergency use by building occupants or by the fire department.	This system is a desirable complement to an automatic sprinkler system. Staff must be trained to use hose effectively. (See <i>NFPA 14.</i> )

<u>Type</u>	<u>Description</u>	<u>Comments</u>
6. Gaseous automatic system	<p>A system that uses gaseous extinguishing agents, including Halon 1301, carbon dioxide, and new clean agents, which have been approved as replacements for Halon 1301. (Halon 1301 is no longer manufactured due to its deleterious effect on the ozone layer.) These systems are permanently piped using a measured, stored supply of a gaseous extinguishant under pressure and discharge nozzles to totally flood an enclosed space. The extinguishing agent is released automatically by a suitable early warning detection system. The systems extinguish fire by chemical or mechanical means.</p>	<p>Clean agents are low in toxicity, but the products of decomposition of some agents during a fire can be hazardous. These products are kept to an acceptable limit by the systems' ability to detect a fire in its incipient stage and to discharge the agent before decomposition products can attain harmful levels. It should be noted that products of combustion of the fire are considerably more hazardous. Therefore, the fire area should be promptly evacuated upon sounding of a fire alarm prior to agent discharge. Clean agents might not extinguish deep-seated fires in ordinary solid combustibles, such as paper and fabrics, but are effective on surface fires in these materials. An early warning detection system, which releases the agent in the fire's incipient stage, should extinguish the fire before it can become deep-seated.</p> <p>These systems need special precautions to avoid damaging effects caused by their extremely rapid release. The high-velocity discharge from nozzles might be sufficient to dislodge objects directly in the path. Where carbon dioxide systems are used, personnel should evacuate immediately upon sounding of a fire alarm, before agent discharge, to avoid suffocation. (See <i>NFPA 12</i>, <i>NFPA 12A</i>, and <i>NFPA 2001</i>.)</p>
7. Dry chemical system	<p>A permanently piped system that discharges a dry chemical from fixed nozzles by means of an expellant gas. The system either totally floods an enclosed space or applies the dry chemical directly onto the fire in a local application. The dry chemical extinguishes fires by the interaction of the dry chemical particles to stop the chain reaction that takes place in flame combustion. The dry chemical is released mechanically or with a suitable detection system.</p>	<p><del>This system leaves a powdery deposit on all exposed surfaces in and around the hazard being protected, which requires cleanup. This type of system provides excellent protection from a fire when installed in the ducts and hood over cooking equipment such as deep fat fryers, range griddles, and broilers that could be a source of ignition. It might not extinguish deep-seated fires but is effective on surface fires. (See <i>NFPA 17</i>.)</del> <u>The currently available dry chemical extinguishing agents are sodium bicarbonate, potassium bicarbonate, potassium chloride, urea-potassium bicarbonate, and monoammonium phosphate. Dry chemical is very effective at extinguishing Class B fires and might also be used on Class C fire hazards. The rapidity of extinguishment is due to the interference of the combustion chain reaction. Monoammonium phosphate (multipurpose dry chemical) is effective on Class A, B, and C fires. It might only control, but not fully extinguish, a deep-seated fire. Multipurpose dry chemical is the only dry chemical agent approved for Class A hazards. The remaining dry chemicals are recognized only for Class B and C hazards. (See <i>NFPA 17</i>.)</u></p>

<u>Type</u>	<u>Description</u>	<u>Comments</u>
8. High-expansion foam system	<p>A fixed extinguishing system that generates a foam agent for total flooding of confined spaces and for volumetric displacement of vapor, heat, and smoke. It acts on fire in the following ways:</p> <ul style="list-style-type: none"> <li>(1) Prevents free movement of air</li> <li>(2) Reduces the oxygen concentration at the fire</li> <li>(3) Cools</li> </ul> <p>The foam agent is released automatically by a suitable detection system.</p>	<p>Where personnel might be exposed to a high-expansion foam discharge, suitable safeguards should be provided to ensure prompt evacuation of the area. The discharge of large amounts of high-expansion foam can inundate personnel, blocking vision, making hearing difficult, and creating some discomfort in breathing. It also leaves residue and requires cleanup. Properly designed, high-expansion foam used in conjunction with water sprinklers provides more positive control and extinguishment than either extinguishment system used independently. (See <i>NFPA 11</i>.)</p>
9. Wet chemical extinguishing system	<p>A system that operates in the same way as halon systems (see <i>type 6</i>), except that it uses a liquid agent usually released by automatic mechanical thermal linkage. It is effective for restaurant, commercial, and institutional hoods, plenums, ducts, and associated cooking appliances.</p>	<p>This system leaves agent residue that is confined to the protection area(s) and requires cleanup. Excellent for service facilities having range hoods and ducts. (See <i>NFPA 17A</i>.)</p>
10. Fine water mist system	<p>In general, a piped system or modular, pressurized container system that delivers a fine water mist and that has a water droplet size ranging to a maximum 1000 <math>\mu\text{m}</math>.</p>	
11. Hybrid fire-extinguishing system	<p><u>A fire-extinguishing system capable of delivering a simultaneous discharge of water mist and an inert gas agent (usually nitrogen) in a controlled proportion from a common discharge device that results in a dilution of oxygen concentration (less than 16 percent) producing atomized water droplets (10 <math>\mu\text{m}</math>). The atomized water droplets provide a large available surface area for heat absorption and are easily converted to steam to provide cooling and oxygen dilution.</u></p>	<p><u>This system can be used for total flooding of an enclosure or for local application discharged directly onto a burning surface. Due to the controlled nitrogen pressure, there is reduced stress on the enclosure, reducing the need for room pressure relief vents. The controlled discharge rate also allows time for egress while providing cooling as it extinguishes the fire. No toxic components or by-products are used and there are minimal clean-up requirements following discharge. This system is specifically designed to meet the challenge of protecting high-value assets. Unlike twin fluid water mist systems where gas is used solely as a medium to atomize water, hybrid systems provide a simultaneous application of water and gas so that both play a role in the extinguishment process. (See <i>NFPA 770</i>.)</u></p>
12. Aerosol fire-extinguishing system	<p><u>A ceiling- or wall-mounted fire-extinguishing system or standalone device that discharges an extinguishing medium consisting of finely divided solid particles, generally</u></p>	<p><u>Aerosol fire-extinguishing systems can be used for total flooding of an enclosure or for a local application discharged directly onto a burning surface. Typical electrically operated condensed aerosol systems are wired directly to fire alarm releasing panels and</u></p>

<u>Type</u>	<u>Description</u>	<u>Comments</u>
	less than 10 µm in diameter, and gaseous matter, generated by a combustion process of a solid aerosol forming compound.	operated as an integrated fire detection and suppression system. Fixed standalone devices are typically used to provide automatic fire protection of small enclosures and can be fitted with and activated by integral heat-responsive and/or manual release devices. Aerosol agents can be used as total flooding agents in both occupied and nonoccupied applications. (See NFPA 2010.)

### Submitter Information Verification

**Committee:** CUL-AAA

**Submittal Date:** Fri Jun 04 09:08:15 EDT 2021

### Committee Statement

**Committee Statement:** The revision adds descriptions of hybrid and aerosol fire extinguishing systems consistent with the revisions to 13.5.4.2. The comments on dry chemical systems are revised to provide updated guidance on dry chemical extinguishing agents.

**Response Message:** FR-23-NFPA 914-2021

[Public Input No. 24-NFPA 914-2019 \[Section No. D.2\]](#)



**First Revision No. 24-NFPA 914-2021 [ Section No. J.1 ]**



**J.1 Monthly Fire Protection Self-Inspection Checklist.**

The following checklist should be used as a reminder during inspections. Items requiring corrective action should be reported on a Notice of Fire Hazard form. (See *Figure J.1.*)

X Satisfactory                      0 Correction required                      /Not applicable

### **Life Safety**

- Ability to use exit doors is not hampered by security measures during occupancy.
- Stairwell and hallway fire doors are kept in the closed position.
- Stairwells and evacuation routes are free and clear of obstructions.
- Fire escape stairs appear to be in good condition.
- Emergency lighting units operate when tested.
- Exterior emergency exit routes are clear and free from snow and ice.
- Illuminated exit signs are all lit, not blocked, and can be easily seen.

### **Fire Protection Equipment**

- Portable fire extinguishers are in their proper location and fully charged and tagged.
- A space of at least 18 in. (457 mm) is kept between sprinklers and materials.
- Fire hose cabinets are in good order, easily visible, and readily accessible.
- Fire detectors are free from obstructions.
- Sprinkler control valves are open and locked or secured, and dry pipe systems register at normal air pressures.
- Sprinkler tanks, piping, and supports appear in good condition.
- Alarm systems function and are tested regularly.
- Lightning arresters appear in good condition.

### **Housekeeping and Storage**

- Rubbish is not left to accumulate in excessive quantities; trash receptacles are emptied daily.
- Storage areas are kept clean and orderly; cleaning materials are safely stored.
- Combustible materials are not kept in unprotected areas such as a crawlspace.
- Roof scuppers and drains are unobstructed. Roof covering is in good condition.
- Aisles are unobstructed.

### **Hazardous Liquids**

- Emergency measures are posted in case of accidental spills.
- Flammable/combustible liquids are kept in approved safety containers.
- Flammable/combustible liquids are stored in an approved cabinet.
- Safety storage cabinet vents are clear of obstructions.
- Soiled rags are kept in an approved self-closing waste container.
- Portable fire extinguishers are in their place and of the proper type.

### **Exhibits/Collections/Book Stacks**

- Exhibits and collections are not overcrowded.
- Exhibit case lights do not show signs of overheating.
- Exhibits are not blocking exit routes or access to fire protection equipment.
- Extension cords are not used.
- All vertical and horizontal openings in fire barriers are firestopped.
- Salvage equipment and materials are provided and readily accessible.
- The fire department is familiar with and has access to these areas.
- Smoking regulations are enforced with employees and visitors.

- Temporary wiring conforms with *NFPA 70*.

#### **Auditoriums and Classrooms**

- Safe capacity is posted and enforced.
- Standing and sitting in aisles are prohibited.
- Smoking regulations are enforced.

#### **Restaurants and Eating Areas**

- Safe capacity is posted and enforced.
- Aisles and exit routes are unobstructed and illuminated.
- Ranges, hoods, and exhaust ducts are clean.

#### **Shops/Laboratories/Packing Areas**

- Laboratory wastes are disposed of daily, using appropriate precautions.
- Spray coating facilities are safely ventilated, and scrubbers and filters are clean.
- Electrical equipment in areas near where flammable liquids are in use are explosionproof.
- Electrical appliances have warning lights and are unplugged when not in use.
- Employees are aware of special hazards and trained in necessary special precautions.
- Entry is limited to authorized persons.
- Power tools and machines are grounded.
- Woodworking equipment dust collectors are functioning adequately and collector bins emptied regularly.
- Power tools are unplugged when not in use.

#### **Exterior and Environment**

- All exits, emergency exits, and fire escapes afford unobstructed passage to a safe area.
- Grounds surrounding the facility are clear of accumulations of combustible material and brush.
- Fire service access is maintained clear.
- Fire hydrants and sprinkler system siamese connections are visible, readily accessible, and operable.

#### **Personnel/Training**

- All staff members know how to transmit a fire alarm.
- All emergency team members have received training and are aware of their assigned duties.
- All staff members have received training in the use of portable extinguishers and fire prevention.

#### **Building Changes Since Last Inspection**

- Do not interfere with fire detection or fire suppression systems.
- Do not contribute unreasonable fire loading.
- Do not create vertical and horizontal openings in fire-rated walls and ceilings.

#### **Notice of Hazard Forms**

- Items requiring action have been noted on Notice of Hazard forms. (*See Figure J.1.*)

Area inspected: \_\_\_\_\_

Inspected by: \_\_\_\_\_

Date of inspection: \_\_\_\_\_

**Figure J.1 Form for Reporting Fire Hazards Requiring Corrective Action.**

**NOTICE OF FIRE HAZARD**

DATE REPORTED: \_\_\_\_\_ HAZARD CONTROL NO.: \_\_\_\_\_  
 AREA WHERE HAZARD WAS NOTICED: \_\_\_\_\_

THE FOLLOWING HAZARD WAS NOTICED:

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

THE POTENTIAL RISK IS AS FOLLOWS:

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

THE FOLLOWING ACTION IS RECOMMENDED:

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Reported to: \_\_\_\_\_ Reported by: \_\_\_\_\_  
 (print name) (print name)

**Submitter Information Verification**

**Committee:** CUL-AAA  
**Submittal Date:** Fri Jun 04 09:14:29 EDT 2021

**Committee Statement**

**Committee Statement:** Fire protection/salvage equipment are vital to the fire protection efforts in a historic structure. In keeping with a proposed new definition for "Readily Accessible," the line items in this list have incorporated the word "readily" to emphasize the increased level of accessibility that the proposed new definition makes clear.

**Response Message:** FR-24-NFPA 914-2021

Public Input No. 14-NFPA 914-2019 [Section No. J.1]



**First Revision No. 25-NFPA 914-2021 [ Section No. K.1 ]**



**K.1 Maintenance of Automatic Sprinkler and Standpipe Systems.**

Each alarm, dry pipe, preaction, and deluge valve should have maintenance tags (annual, 5-year, 50-year, and so forth) attached for recording the inspector's initials, date, pressure readings, and confirmation on maintenance/inspections performed on the system. Checklists detailing maintenance should be kept by the office responsible for maintenance. All problems noted should be corrected before initialing the maintenance tag.

During any renovation or inspection of an automatic sprinkler system, the following should be reported for the facility manager for correction:

- (1) Sprinklers that are damaged, blocked by storage, painted, or otherwise impaired. (Construction, occupancy changes, and changes to heating, lighting, and air-conditioning systems might require relocating, adding, or replacing sprinklers.)
- (2) Pipe hangers with mechanical injury and corrosion.

### **General Requirements for All Sprinkler and Standpipe Systems**

Annually, inspect water pressure and air pressure gauges to make sure they are within  
 normal range. Investigate a loss of pressure of more than 10 percent. Record new pressure readings on the attached tag.

Annually, inspect control valve labels to ensure they are accurate. Replace missing signs and relabel inaccurate signs.

Annually, inspect fire department connections to make sure that inlets are unobstructed, that  
 the protective caps are in place, that the connections are conspicuously marked and readily accessible for the fire department, and that hose threads are in good condition.

Annually, lubricate each valve stem and reseal to prevent leaks.

Annually, close and reopen each post indicator and outside stem and yoke (OS&Y) valve.

Annually, inspect fire department connections before freezing weather. The connection should be drained through the ball drip from the check valve to ensure it will not freeze.

Every 5 years, replace the gaskets in check valves.

Every 5 years, recalibrate and/or replace pressure gauges, if necessary.

Fifty years after installation, remove a representative sample of sprinklers (at least two per  
 floor) and have them operationally tested at a testing laboratory. Based on tests, replace sprinklers if necessary. Test a sampling of the sprinklers every 10 years thereafter.

Fifty years after installation, inspect the sprinkler system in at least five remote and low-point  
 locations to determine the degree of pipe corrosion. Where corrosion is found, have a fire protection engineer or sprinkler designer determine the hydraulic performance of the sprinkler system.

### **Wet Pipe and Antifreeze Systems**

Annually, open the inspector's test connection and test all alarms (water motor alarm and/or flow/pressure switch).

Annually, before freezing weather, test the freezing point of antifreeze solutions with a hydrometer. Maintain the solution below the estimated minimum temperature.

Annually, make sure wet pipe systems are properly protected from freezing.

### **Dry, Deluge, and Preaction Systems**

Annually, before freezing weather, operate the heating system in enclosures housing valves to ensure temperature can be maintained above 5.5°C (42°F).

Annually, before freezing weather, open all low-point drains to remove condensation and clean plugged or obstructed sprinklers.

Annually, remove face plates of dry, deluge, and preaction valves and examine interior for corrosion and condition of gasket.

Annually, trip test the dry pipe, deluge, or preaction valve. Ensure quick opening devices operate properly. Once the main valve trips, quickly close the control valve.

- Every 3 years, flush system with water. The system should be filled with water for 2 days before flushing to allow pipe scale and deposits to soften. Drain system and then flush.
- Flush cross mains first by attaching 50 mm (2 in.) fire hose at the end of the cross main. Flow water until clear. Also, record the residual water pressure from the supply-side water pressure gauge. Remove and reinstall all pendent sprinklers after flushing is complete.
  - Annually, activate preaction and deluge systems by operating the fire detection devices.
  - Close the control valve to prohibit water from entering the system.
  - Annually, lubricate air compressors on preaction and dry systems in accordance with manufacturer recommendations.
- Annually, test low air pressure alarm on preaction and dry systems. Close the water supply valve. Slowly release air from the system by slowly opening the inspector's test valve. Release enough pressure to sound the alarm. Avoid tripping the dry pipe valve.
- Quarterly, determine dry pipe system priming water level by slowly opening the priming water level. If only air escapes, close the test valve and add about one quart of water. Repeat the procedure until water comes out of the test valve.
- Annually, flow test open sprinklers on deluge sprinkler systems during warm weather.

## Submitter Information Verification

**Committee:** CUL-AAA

**Submittal Date:** Fri Jun 04 09:17:54 EDT 2021

## Committee Statement

**Committee Statement:** In keeping with the proposed new definition for "Readily Accessible," an increased level of accessibility to fire department connections is proposed here.

**Response Message:** FR-25-NFPA 914-2021

[Public Input No. 15-NFPA 914-2019 \[Section No. K.1\]](#)



## First Revision No. 26-NFPA 914-2021 [ Section No. K.10 ]

### **K.10** Maintenance of Dry Chemical Systems.

Annually, inspect contracts to ensure dry chemical systems are being maintained in accordance with manufacturer recommendations, including the following:

- (1) The monthly inspection of a system is done by a company specializing in the maintenance of these systems.
- (2) Nozzles are clean of grease.
- (3) Gas and electric power shutoff are tested.
- (4) Water-wash hood cleaning systems are operational.
- (5) Fusible links are replaced annually.
- (6) Manual pull stations send a signal to the control room.
- (7) Fusible links are of the correct temperature rating.
- (8) Nozzles are located directly above grease-producing equipment at the correct height.
- (9) Pressure on gauge is adequate.
- (10) Manual release stations are operational and readily accessible.
- (11) Monthly and annual maintenance tags are attached for recording the inspector's initials, date, and confirmation on maintenance/inspections performed on the system. Checklists detailing maintenance should be kept by the responsible office.

### **Submitter Information Verification**

**Committee:** CUL-AAA

**Submittal Date:** Fri Jun 04 09:34:37 EDT 2021

### **Committee Statement**

**Committee Statement:** An increased level of accessibility should be required for all fire protection equipment, in keeping with the proposed new definition.

**Response Message:** FR-26-NFPA 914-2021

Public Input No. 16-NFPA 914-2019 [Section No. K.10]



## First Revision No. 10-NFPA 914-2021 [ Section No. V.3 ]

### V.3 References for Extracts in Informational Sections.

NFPA 13, *Standard for the Installation of Sprinkler Systems*, 2019 edition.

NFPA 101<sup>®</sup>, *Life Safety Code*<sup>®</sup>, ~~2018~~ 2021 edition.

NFPA 5000<sup>®</sup>, *Building Construction and Safety Code*<sup>®</sup>, ~~2018~~ 2021 edition.

### Submitter Information Verification

**Committee:** CUL-AAA

**Submittal Date:** Fri Jun 04 07:36:22 EDT 2021

### Committee Statement

**Committee Statement:** Extract reference updates.

**Response Message:** FR-10-NFPA 914-2021