Public Input No. 161-NFPA 72-2022 [Global Input]

1. Add new Annex material A.14.3.2 to read as follows:

A.14.3.2 In addition to safety considerations, other reasons for delaying fire alarm inspections include nationally or regionally declared disasters, such as pandemics, weather-related emergencies, or other governmentally recognized disruptions.

2. Add new Annex material A.14.4.4.1 to read as follows:

A.14.4.4.1 In addition to safety considerations, other reasons for delaying fire alarm testing include nationally or regionally declared disasters, such as pandemics, weather-related emergencies, or other governmentally recognized disruptions.

Additional Proposed Changes

File Name	Description	Approved
TIA_72_22_1.pdf		

Statement of Problem and Substantiation for Public Input

NOTE: This public input originates from Tentative Interim Amendment No. 22-1 (Log 1548) issued by the Standards Council on April 15, 2021 and per the NFPA Regs., needs to be reconsidered by the Technical Committee for the next edition of the Document.

SUBSTANTIATION:
The Underwriters Laboratories standard for Central Station monitoring (UL 827) is currently being modified to allow temporary monitoring “at home” or other non-listed locations due to what the standard now defines as “nationally or regionally declared emergencies” which would disrupt normal operations. During the UL Standards Technical Panel discussions relating to
this change to UL 827, it was brought up that not only are the monitoring locations being challenged as a result of the current pandemic, but fire alarm service companies are finding that the fire alarm owners and subscribers are not open, or are unwilling for outside contractors to enter their premises to perform code-mandated fire alarm inspections and testing.

Emergency Nature:
The proposed TIA intends to offer to the public a benefit that would lessen a recognized (known) hazard or ameliorate a continuing dangerous condition or situation. The annex material proposed in the above sections will make it easier for code officials and other
AHJs to allow delays in the frequencies of inspection and testing of the fire alarm systems in their jurisdictions.

Submitter Information Verification

Submitter Full Name: TC on SIG_TMS
Organization: NFPA
Street Address:
City:
State:
Zip:

Submittal Date: Thu Feb 24 18:06:18 EST 2022
Committee: SIG-TMS

Committee Statement

Resolution: The committee reaffirms the actions taken on TIA 22-1.

Public Input No. 493-NFPA 72-2022 [Global Input]

Type your content here ...

Replace all references to NFPA 1221 with 1225 throughout the document.

Delete: **NFPA 1221, Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems, 2019 edition.**

Replace with**: NFPA 1225, Standard for Emergency Services Communications, 2022 Edition.**

Statement of Problem and Substantiation for Public Input

A global change throughout the document is that 1221 no longer exist and should reference 1225.

Submitter Information Verification

Submitter Full Name: Megan Hayes
Organization: Nema
Street Address:
City:
State:
Zip:
Submittal Date: Mon May 30 14:06:32 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5205-NFPA 72-2022
Statement: The references are updated in accordance with the Manual of Style.

Public Input No. 55-NFPA 72-2022 [Global Input]

Change all references to NFPA 1221 to the newly published NFPA 1225, Standard for Emergency Services Communications.

Statement of Problem and Substantiation for Public Input

NFPA 1225 has replaced NFPA 1221 as of its publication in 2021.

Submitter Information Verification

Submitter Full Name: Richard Kluge
Organization: Ericsson
Affiliation: ATIS
Street Address:
City:
State:
Zip:
Submittal Date: Mon Jan 10 12:50:19 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5205-NFPA 72-2022
Statement: The references are updated in accordance with the Manual of Style.

Public Input No. 574-NFPA 72-2022 [Global Input]

Change "electrical circuit protective system(s)" to "electrical circuit integrity system(s)"

Statement of Problem and Substantiation for Public Input

Vendors are stating that the new version of UL 2196 is changing "electrical circuit protective system(s)" to "electrical circuit integrity system(s)". This term is used at least seven times in NFPA 72: 3 times in Chapter 12 and 4 times in Annex A for Chapter 12.

Submitter Information Verification

Submitter Full Name: Larry Rietz
Organization: Jensen Hughes
Street Address:
City:
State:
Zip:
Submittal Date: Wed Jun 01 16:11:42 EDT 2022
Committee: SIG-PRO

Committee Statement

Resolution: FR-5001-NFPA 72-2022
Statement: Aligns with the latest industry terminology. Based on the new revision of UL 2196 UL Standard for Safety Tests for Fire Resistive Cables

Public Input No. 69-NFPA 72-2022 [Section No. 1.4.1]

1.4.1

~~Unless otherwise noted, it is not intended that the~~ The provisions of this document shall not be required to be applied to facilities, equipment, structures, or installations that were existing or approved for construction or installation prior to the effective date of the document.

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 2.3.1.1 requires chapter 1 to be written in mandatory language. The proposed revised text from the task group includes mandatory language.

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
Organization: Fike Corporation
Affiliation: Fire Suppression Systems Association (FSSA)
Street Address:
City:
State:
Zip:
Submittal Date: Fri Jan 14 11:33:51 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5002-NFPA 72-2022
Statement: Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 2.3.1.1 requires chapter 1 to be written in mandatory language.

Public Input No. 70-NFPA 72-2022 [Section No. 1.6.1]

1.6.1

The units of measure in this Code ~~are presented~~ shall be presented in U.S. Customary Units (inch-pound units).

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 2.3.3.3 requires Chapter 1 written in mandatory language. The task group proposed text includes mandatory language.

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
Organization: Fike Corporation
Affiliation: Fire Suppression Systems Association (FSSA)
Street Address:
City:
State:
Zip:
Submittal Date: Fri Jan 14 12:22:20 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5003-NFPA 72-2022
Statement: Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 2.3.1.1 requires chapter 1 to be written in mandatory language.

Public Input No. 71-NFPA 72-2022 [Section No. 1.6.2]

1.6.2

Where presented, the International System of Units (SI) ~~of Units~~ shall follow the inch-pound units in parentheses.

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 2.3.3.3 requires Chapter 1 written in mandatory language. The task group proposed text which includes mandatory language.

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
Organization: Fike Corporation
Affiliation: Fire Suppression Systems Association (FSSA)
Street Address:
City:
State:
Zip:
Submittal Date: Fri Jan 14 12:28:25 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5003-NFPA 72-2022
Statement: Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 2.3.1.1 requires chapter 1 to be written in mandatory language.

Public Input No. 72-NFPA 72-2022 [Section No. 1.6.4]

1.6.4

Where both systems of units are presented, users of this Code shall ~~apply~~ comply with both of the following:

(1) Shall utilize only one set of units consistently~~ and shall~~

(2) Shall not alternate between units~~.~~

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text utilized listed items in accordance with MOS section 3.3.1 Listed Items.

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
Organization: Fike Corporation
Affiliation: Fire Suppression Systems Association (FSSA)
Street Address:
City:
State:
Zip:
Submittal Date: Fri Jan 14 12:32:45 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5003-NFPA 72-2022
Statement: Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 2.3.1.1 requires chapter 1 to be written in mandatory language.

Public Input No. 73-NFPA 72-2022 [Section No. 1.6.5]

1.6.5*

The values presented for measurements in this Code ~~are~~ shall be expressed with a degree of precision appropriate for practical application and enforcement~~. It is not intended that the application or enforcement of these values be more precise than the precision expressed.~~

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 2.3.3.3 requires Chapter 1 written in mandatory language. The task group proposed text includes mandatory language. Also note that the second sentence of the existing paragraph is proposed to be appended to the existing annex in an associated PI-74 for A.1.6.5

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
Organization: Fike Corporation
Affiliation: Fire Suppression Systems Association (FSSA)
Street Address:
City:
State:
Zip:
Submittal Date: Fri Jan 14 12:47:15 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5003-NFPA 72-2022
Statement: Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 2.3.1.1 requires chapter 1 to be written in mandatory language.

Public Input No. 75-NFPA 72-2022 [Section No. 1.6.6]

1.6.6

Where extracted text contains values expressed in only one system of units, the values in the extracted text ~~have been~~ shall be retained without conversion to preserve the values established by the responsible technical committee in the source document.

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 2.3.3.3 requires Chapter 1 written in mandatory language. The task group proposed text which includes mandatory language.

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
Organization: Fike Corporation
Affiliation: Fire Suppression Systems Association (FSSA)
Street Address:
City:
State:
Zip:
Submittal Date: Fri Jan 14 13:17:39 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5003-NFPA 72-2022
Statement: Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 2.3.1.1 requires chapter 1 to be written in mandatory language.

Public Input No. 333-NFPA 72-2022 [Section No. 2.2]

2.2 NFPA Publications.

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

NFPA 10, *Standard for Portable Fire Extinguishers,* 2022 edition.

NFPA 13, *Standard for the Installation of Sprinkler Systems,* 2022 edition.

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

NFPA 37, *Standard for the Installation and Use of Stationary Combustion Engines and Gas Turbines,* 2021 edition.

NFPA 70®, National Electrical Code®, 2020 edition.

NFPA 75, *Standard for the Fire Protection of Information Technology Equipment,* 2020 edition.

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

NFPA *101®, Life Safety Code®,* 2021 edition.

NFPA 110, *Standard for Emergency and Standby Power Systems,* 2022 edition.

NFPA 111, *Standard on Stored Electrical Energy Emergency and Standby Power Systems,* 2022 edition.

NFPA 170, *Standard for Fire Safety and Emergency Symbols,* 2021 edition.

NFPA 601, *Standard for Security Services in Fire Loss Prevention,* 2020 edition.

NFPA 855, *Standard for the Installation of Stationary Energy Storage Systems,* 2020 edition.

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

~~NFPA 1221~~ NFPA 1225 , Standard for ~~the Installation, Maintenance, and Use of~~ Emergency Services Communications - ~~Systems~~ , ~~2019~~ 2022 edition ~~.~~

NFPA 1600®, Standard on Continuity, Emergency, and Crisis Management, 2019 edition.

NFPA 1620, *Standard for Pre-Incident Planning,* 2020 edition.

Statement of Problem and Substantiation for Public Input

A global change throughout the document to reflect that 1221 no longer exists and should reference 1225.

Submitter Information Verification

Submitter Full Name: Chris Heaton
Organization: Electronic Security Association
Affiliation: Electronic Security Association
Street Address:
City:
State:

Zip:
Submittal Date: Mon May 23 15:15:56 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5205-NFPA 72-2022
Statement: The references are updated in accordance with the Manual of Style.

Public Input No. 455-NFPA 72-2022 [Section No. 2.2]

2.2 NFPA Publications.

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

NFPA 10, *Standard for Portable Fire Extinguishers,* 2022 edition.

NFPA 13, *Standard for the Installation of Sprinkler Systems,* 2022 edition.

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

NFPA 37, *Standard for the Installation and Use of Stationary Combustion Engines and Gas Turbines,* 2021 edition.

NFPA 70®, *National Electrical Code®,* 2020 edition.

NFPA 75, *Standard for the Fire Protection of Information Technology Equipment,* 2020 edition.

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

NFPA *101®*, *Life Safety Code®,* 2021 edition.

NFPA 110, *Standard for Emergency and Standby Power Systems,* 2022 edition.

NFPA 111, *Standard on Stored Electrical Energy Emergency and Standby Power Systems,* 2022 edition.

NFPA 170, *Standard for Fire Safety and Emergency Symbols,* 2021 edition.

NFPA 601, *Standard for Security Services in Fire Loss Prevention,* 2020 edition.

NFPA 855, *Standard for the Installation of Stationary Energy Storage Systems,* 2020 edition.

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

~~NFPA 1221,~~ NFPA 1225 Standard for ~~the Installation, Maintenance, and Use of~~ Emergency Services Communications ~~Systems~~ , ~~2019~~ 2022 edition ~~.~~

NFPA 1600®, *Standard on Continuity, Emergency, and Crisis Management,* 2019 edition.

NFPA 1620, *Standard for Pre-Incident Planning,* 2020 edition.

Additional Proposed Changes

File Name	Description	Approved
NFPA_72_BS_SB_2_2_comments.docx		

Statement of Problem and Substantiation for Public Input

A global change throughout the document is that 1221 no longer exists and should reference 1225.

Submitter Information Verification

Submitter Full Name: Tim Knisely
Organization: Automatic Fire Alarm Association (AFAA)
Affiliation: Automatic Fire Alarm Association (AFAA)

Street Address:
City:
State:
Zip:
Submittal Date: Fri May 27 08:33:28 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5205-NFPA 72-2022
Statement: The references are updated in accordance with the Manual of Style.

Public Input No. 550-NFPA 72-2022 [Section No. 2.2]

2.2 NFPA Publications.

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

NFPA 10, *Standard for Portable Fire Extinguishers,* 2022 edition.

NFPA 13, *Standard for the Installation of Sprinkler Systems,* 2022 edition.

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

NFPA 37, *Standard for the Installation and Use of Stationary Combustion Engines and Gas Turbines,* 2021 edition.

NFPA 70®, National Electrical Code®, 2020 edition.

NFPA 75, *Standard for the Fire Protection of Information Technology Equipment,* 2020 edition.

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

NFPA *101®, Life Safety Code®,* 2021 edition.

NFPA 110, *Standard for Emergency and Standby Power Systems,* 2022 edition.

NFPA 111, *Standard on Stored Electrical Energy Emergency and Standby Power Systems,* 2022 edition.

NFPA 170, *Standard for Fire Safety and Emergency Symbols,* 2021 edition.

NFPA 601, *Standard for Security Services in Fire Loss Prevention,* 2020 edition.

NFPA 855, *Standard for the Installation of Stationary Energy Storage Systems,* 2020 edition.

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

~~NFPA 1221~~ NFPA 1225 , *Standard for ~~the Installation, Maintenance, and Use of~~ Emergency Services Communications ~~Systems~~* , ~~2019 edition~~ *2022* edition .

NFPA 1600®, Standard on Continuity, Emergency, and Crisis Management, 2019 edition.

NFPA 1620, *Standard for Pre-Incident Planning,* 2020 edition.

Statement of Problem and Substantiation for Public Input

As part of the Emergency Response and Responder Safety Document Consolidation Plan (consolidation plan) as approved by the NFPA Standards Council, NFPA 1225 is a combination of Standards NFPA 1061 and NFPA 1221. For consolidated Standard and revision cycle information, see the Next Edition tab.

Submitter Information Verification

Submitter Full Name: Sagiv Weiss-Ishai
Organization: San Francisco Fire Department
Affiliation: SFFD
Street Address:
City:

State:
Zip:
Submittal Date: Tue May 31 17:39:24 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5205-NFPA 72-2022
Statement: The references are updated in accordance with the Manual of Style.

Public Input No. 551-NFPA 72-2022 [Section No. 2.3.3]

2.3.3 ASME Publications.

American Society of Mechanical Engineers, Two Park Avenue, New York, NY 10016-5990.

ASME A17.1/CSA B44, *Safety Code for Elevators and Escalators*, ~~2019~~ 2022 .

Statement of Problem and Substantiation for Public Input

the 2022 Edition of the A17.1/B44 was already completed and estimated to be published at the end of 2022 or beginning of 2023. Therefore the A17.1/B44 2022 edition should be referenced in the 2025 Edition of NFPA 72 as the most updated and recent elevator code.

Submitter Information Verification

Submitter Full Name: Sagiv Weiss-Ishai
Organization: San Francisco Fire Department
Affiliation: SFFD
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 17:42:22 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5205-NFPA 72-2022
Statement: The references are updated in accordance with the Manual of Style.

Public Input No. 559-NFPA 72-2022 [Section No. 2.3.9]

2.3.9 UL Publications.

Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, IL 60062-2096.

UL 38, *Manual Signaling Boxes for Fire Alarm Systems,* 2008, revised 2018.

UL 217, *Smoke Alarms*, ~~8th edition~~ 2020 , ~~2015,~~ revised ~~2016~~ 2021 .

UL 268, *Smoke Detectors for Fire Alarm Systems*, ~~7th edition~~ 2016 , ~~2016~~ revised 2021 .

UL 521, *Heat Detectors for Fire Protective Signaling Systems*, 1999, revised ~~2017~~ 2021 .

UL 827, *Central-Station Alarm Services*, 2014, revised ~~2019~~ 2021 .

UL 864, *Control Units and Accessories for Fire Alarm Systems*, 2014, revised ~~2018~~ 2020 .

UL 985, *Household Fire Warning System Units*, 2015, revised 2018.

UL 1484, *Residential Gas Detectors*, 2016, revised ~~2017~~ 2022 .

UL 1638, *Visible Signaling Devices for Fire Alarm and Signaling Systems, Including Accessories*, 2016.

UL 1730, *Smoke Detector Monitors and Accessories for Individual Living Units of Multifamily Residences and Hotel/Motel Rooms*, 2006, revised 2017.

UL 1971, *Signaling Devices for the Hearing Impaired*, 2002, revised 2018.

UL 1981, *Central Station Automation Systems*, 2014, revised ~~2015~~ 2019 .

UL 2017, *General-Purpose Signaling Devices and Systems*, 2008, revised 2018.

UL 2034, *Single and Multiple Station Carbon Monoxide Alarms,* 2017, revised 2018.

UL 2075, *Gas and Vapor Detectors and Sensors,* 2013, revised ~~2017~~ 2021 .

UL 2525, *Two-way Emergency Communications Systems for Rescue Assistance*, 2020.

UL 2572, *Mass Notification Systems*, 2016, revised 2018.

UL 60950–1, *Information Technology Equipment — Safety — Part 1: General Requirements*, 2007, revised 2019.

UL 62368-1, *Audio/Video, Information and Communication Technology Equipment — Part 1: Safety Requirements,* 2019, revised 2021 .

Statement of Problem and Substantiation for Public Input

Changes are updates to edition or revision dates and are submitted reference updates.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 560-NFPA 72-2022 [Section No. K.1.2.15]	

Submitter Information Verification

Submitter Full Name: Kelly Nicolello
Organization: UL LLC
Street Address:

City:
State:
Zip:
Submittal Date: Wed Jun 01 10:41:58 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5205-NFPA 72-2022
Statement: The references are updated in accordance with the Manual of Style.

Public Input No. 552-NFPA 72-2022 [Section No. 2.4]

2.4 References for Extracts in Mandatory Sections.

NFPA 13, *Standard for the Installation of Sprinkler Systems,* ~~2022 edition~~ 2025 edition .

NFPA 70®, National Electrical Code®, 2020 edition.

NFPA *101®, Life Safety Code®,* 2021 edition.

NFPA 654, *Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids,* 2020 edition.

~~NFPA 1221~~ NFPA 1225 , *Standard for ~~the Installation, Maintenance, and Use of~~ Emergency Services Communications ~~Systems~~* ,~~2019 edition~~ 2022 edition .

NFPA 5000®, Building Construction and Safety Code®, 2021 edition.

Statement of Problem and Substantiation for Public Input

As part of the Emergency Response and Responder Safety Document Consolidation Plan (consolidation plan) as approved by the NFPA Standards Council, NFPA 1225 is a combination of Standards NFPA 1061 and NFPA 1221. For consolidated Standard and revision cycle information, see the Next Edition tab.

Submitter Information Verification

Submitter Full Name: Sagiv Weiss-Ishai
Organization: San Francisco Fire Department
Affiliation: SFFD
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 17:45:33 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5205-NFPA 72-2022
Statement: The references are updated in accordance with the Manual of Style.

Public Input No. 538-NFPA 72-2022 [New Section after 3.3.37.2]

Carbon Monoxide Source

Equipment that is commonly used in a building or a permanently installed appliance, fireplace or process that is located inside a building that produces or emits carbon monoxide gas.

Statement of Problem and Substantiation for Public Input

This public input is adding a definition for “carbon monoxide source” and replacing the term “fuel-burning appliance” in several sections. This change is needed to clarify that only permanently installed or commonly used sources in a building such as gas fired heaters or propane powered forklifts that are part of the daily operations of a space are captured.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 541-NFPA 72-2022 [Section No. 17.12.1]	

Submitter Information Verification

Submitter Full Name: Tim Knisely
Organization: Automatic Fire Alarm Association (AFAA)
Affiliation: Automatic Fire Alarm Association (AFAA)
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 15:14:31 EDT 2022
Committee: SIG-IDS

Committee Statement

Resolution: FR-5258-NFPA 72-2022
Statement: The definition properly explains carbon monoxide source and clarifies that carbon monoxide can be produced from installed appliances, equipment, and processes other than fuel burning appliances.

Public Input No. 271-NFPA 72-2022 [Section No. 3.3.60]

3.3.60* Communications Center.

A building or portion of a building that is specifically configured for the primary purpose of providing emergency communications services or ~~public safety answering point (~~ PSAP ~~)~~ services to one or more public safety agencies under the authority or authorities having jurisdiction.. [~~1221~~ 1225 ,- ~~2019~~ 2022] (SIG-PRS)

Statement of Problem and Substantiation for Public Input

NFPA 1221 has been incorporated into NFPA 1225. The dfintion is an extract and has changed a bit.

Submitter Information Verification

Submitter Full Name: Rodger Reiswig
Organization: Johnson Controls
Street Address:
City:
State:
Zip:
Submittal Date: Fri Apr 29 09:34:58 EDT 2022
Committee: SIG-PRS

Committee Statement

Resolution: FR-5097-NFPA 72-2022
Statement: It is unclear what the acronym PSAP means without having the full term spelled out in the definition. The acronym was editorially spelled out for the users.

Public Input No. 498-NFPA 72-2022 [New Section after 3.3.63]

3.3. X Gateway.

A means of signal transport between a protected premise and a Public Safety Answering Point (PSAP) which is owned, operated and maintained by a private for profit entity. May be part of the communications cloud. The pathway is governed under the scope of NFPA 72.

Statement of Problem and Substantiation for Public Input

This is a definition for a new means of signal transport that has emerged since the last cycle of NFPA 72 (2022). In this case the equipment is not maintained or owned by a public utility and the exception for public utilities that is described within Chapter 26 should be excluded.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 495-NFPA 72-2022 [Chapter 25]	New Chapter
Public Input No. 497-NFPA 72-2022 [New Section after 10.5.6.4.3]	New qualifications
Public Input No. 499-NFPA 72-2022 [Section No. A.26.6.2.4]	Revised Exception
Public Input No. 501-NFPA 72-2022 [Section No. A.26.6.2.4]	New Fig
Public Input No. 495-NFPA 72-2022 [Chapter 25]	
Public Input No. 497-NFPA 72-2022 [New Section after 10.5.6.4.3]	
Public Input No. 499-NFPA 72-2022 [Section No. A.26.6.2.4]	
Public Input No. 501-NFPA 72-2022 [Section No. A.26.6.2.4]	

Submitter Information Verification

Submitter Full Name: Shane Clary
Organization: Bay Alarm Company
Affiliation: Bay Alarm Company
Street Address:
City:
State:
Zip:
Submittal Date: Mon May 30 15:03:38 EDT 2022
Committee: SIG-SSS

Committee Statement

Resolution: FR-5116-NFPA 72-2022
Statement: This is a definition for a new means of signal transport that has emerged since the last cycle of NFPA 72 (2022).

Public Input No. 319-NFPA 72-2022 [Section No. 3.3.65.1.3]

3.3.65.1.3* Supervisory Condition.

An abnormal condition in connection with the supervision ~~of~~ , operation, or status of other systems, processes, or equipment. (SIG-FUN)

Statement of Problem and Substantiation for Public Input

This PI is intended to prompt a discussion around the age-old definitions of supervisory and trouble conditions, particularly how they relate to current and future sensors and devices which perhaps were not contemplated when these definitions were developed. Accurate guidance from NFPA 72 is critical as other technical committees attempt to apply these conditions to those found in other standards. Information gathered during a presentation on this topic at the '22 NFPA C&E will be forwarded to SIG-FUN for consideration.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 320-NFPA 72-2022 [Section No. 3.3.65.1.4]	
Public Input No. 320-NFPA 72-2022 [Section No. 3.3.65.1.4]	

Submitter Information Verification

Submitter Full Name: Jason Webb
Organization: Potter Electric Signal Company
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 20 09:48:57 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: The submitter did not clearly identify a problem with the current definition. The current definition applies broadly to the supervision of systems and equipment. Typically the operation or status of such is not abnormal and, therefore, is not a supervisory condition.

Public Input No. 320-NFPA 72-2022 [Section No. 3.3.65.1.4]

3.3.65.1.4* Trouble Condition.

An abnormal condition in a system, sensor, or device due to a fault. (SIG-FUN)

Statement of Problem and Substantiation for Public Input

This PI is intended to prompt a discussion around the age-old definitions of supervisory and trouble conditions, particularly how they relate to current and future sensors and devices which perhaps were not contemplated when these definitions were developed. Accurate guidance from NFPA 72 is critical as other technical committees attempt to apply these conditions to those found in other standards. Information gathered during a presentation on this topic at the '22 NFPA C&E will be forwarded to SIG-FUN for consideration.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 319-NFPA 72-2022 [Section No. 3.3.65.1.3]	
Public Input No. 319-NFPA 72-2022 [Section No. 3.3.65.1.3]	

Submitter Information Verification

Submitter Full Name: Jason Webb
Organization: Potter Electric Signal Company
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 20 10:00:33 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: The submitter did not clearly identify a problem with the current definition. The current definition uses the term "system" to encompass all components and devices that comprise the system.

Public Input No. 334-NFPA 72-2022 [New Section after 3.3.65.2]

3.3.66 Network Connectable Equipment

System components that connect to the internet or each other through wired or wireless pathways using various protocols.

Statement of Problem and Substantiation for Public Input

The term “Network Connectable Equipment” is now used as part of the cybersecurity changes and the definition should be added to 72 to help the reader understand how the new term is being used.

Submitter Information Verification

Submitter Full Name: Chris Heaton
Organization: Electronic Security Association
Affiliation: Electronic Security Association
Street Address:
City:
State:
Zip:
Submittal Date: Mon May 23 15:48:58 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5199-NFPA 72-2022
Statement: The term “Network Connectable Equipment” is now used as part of the cybersecurity changes and the definition is added to help the reader understand how the new term is being used.

Public Input No. 494-NFPA 72-2022 [Section No. 3.3.66]

3.3.66 Constantly Attended.

Attended 24 hours a day and 365 days a year. (SIG-PRO)

3.3.66 Network Connectable Equipment

System Components that connect to the internet or each other through wired or wireless pathways using various protocols.

Statement of Problem and Substantiation for Public Input

Building systems are increasingly networked and/ or accessible to public facing networks. Evidence has been identified in multiple case studies including the Fire Protection Research Foundation (FPRF) report. The FPRF conducted research that has identified gaps and assessed the appropriateness of the existing provisions and guidance related to cybersecurity.
Their report lists gaps that include:

- Configuration – • Interconnection of external systems (call centers, service providers) could allow for unauthorized activity if those external systems are not secure. • Interconnection with other building systems with no access/restriction to prevent unintended communications. • If one interconnected system is compromised and life safety is connected, it would be safe to assume that all are compromised.
- Implementation – • Systems that have remote access for maintenance or monitoring could introduce vulnerabilities if not properly implemented. • Using secure gateways and configuring devices with only the necessary communication mechanisms can reduce exposure. • The use of insecure wireless devices, or lack of wireless device authentication can be a weakness.
- Security – • Complexity of cybersecurity threats and solutions are increasing, making systems more vulnerable to highly sophisticated arson (terrorist) attacks, industrial espionage, and insider threats. Because of this, it is becoming more difficult to defend against these attacks and new solutions need to be implemented.
- Access – • Weak logical and physical access to 3rd party networks and systems. • Easy to implant hardware or software devices into environment

The attached public Input addresses the above gaps by requiring industry accepted cyber security practices.
There are several incidents that have already occurred and are referenced here.

- https://www.smartcitiesdive.com/news/hackers-emergency-sirens-texas-cities/550639/
- Researchers Hack Building Control System at Google Australia Office | WIRED

Target Hackers Broke in Via HVAC Company – Krebs on Security

Submitter Information Verification

Submitter Full Name: Megan Hayes
Organization: Nema
Street Address:
City:
State:
Zip:
Submittal Date: Mon May 30 14:24:49 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5199-NFPA 72-2022

Statement: The term “Network Connectable Equipment” is now used as part of the cybersecurity changes and the definition is added to help the reader understand how the new term is being used.

Public Input No. 341-NFPA 72-2022 [New Section after 3.3.75]

TITLE OF NEW CONTENT

Design Review: A review of an installed system by a qualified design professional for compliance to the original or current installation codes and standards.

Statement of Problem and Substantiation for Public Input

Justification: This public input is in conjunction with public inputs 340 and 342 which intend to clarify that personnel performing inspection, testing, and maintenance of existing previously approved fire alarm and signaling systems are not, unless otherwise licensed or approved by the authority having jurisdiction, design professionals. And, that any observations that they make are not part of a design review. And, that during the course of their inspection, testing, and maintenance duties, they are not required to verify the adequacy of design of existing previously approved system installations.

- Public Input 340 clarifies the definition of an Observation to state that it is not part of a design review.
- Public Input 341 adds a definition for Design Review so that the addition to the definition of Observation is clear.
- Public input 342 borrows language from the 2020 NFPA 25 – section 1.1.3.1 to clarify that inspection, testing, and maintenance personal performing their duties for previously approved system installations are not required to confirm the adequacy of the design of the system.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 340-NFPA 72-2022 [Section No. 3.3.193]	
Public Input No. 342-NFPA 72-2022 [New Section after 14.1.5]	
Public Input No. 340-NFPA 72-2022 [Section No. 3.3.193]	
Public Input No. 342-NFPA 72-2022 [New Section after 14.1.5]	

Submitter Information Verification

Submitter Full Name: Jason Dupuis
Organization: Cintas Fire Protection F19
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 24 10:30:14 EDT 2022
Committee: SIG-TMS

Committee Statement

Resolution: The initial design review and periodic inspection, testing, and maintenance requirements are clearly differentiated in the code. The requirements for how the design review and periodic inspection, testing, and maintenance are performed vary by jurisdiction. Adopting the proposed text would add confusion to the responsibilities of the jurisdiction.

Public Input No. 180-NFPA 72-2022 [Section No. 3.3.77 [Excluding any Sub-Sections]]

A device suitable for connection to a circuit that has a sensor that responds to a ~~physical~~ stimulus such as gas, heat, light or smoke. (SIG-IDS)

Statement of Problem and Substantiation for Public Input

Not all detectors require a physical stimulus. An example is video image smoke detectors that sense light reflected from smoke.

Submitter Information Verification

Submitter Full Name: Scott Lang
Organization: Honeywell International
Street Address:
City:
State:
Zip:
Submittal Date: Wed Mar 09 10:45:49 EST 2022
Committee: SIG-IDS

Committee Statement

Resolution: FR-5263-NFPA 72-2022
Statement: Not all detectors require physical stimulus. Both video and certain types of smoke detectors sense light reflection.

Public Input No. 209-NFPA 72-2022 [New Section after 3.3.77.9]

TITLE OF NEW CONTENT

Fuel-burning Appliance. A device that burns solid, liquid, or gaseous fuel or a combination thereof.

Statement of Problem and Substantiation for Public Input

This term was defined in 720 but does not appear to have been transferred into 72. The proposed definition is verbatim from the 2015 edition of 720.

Submitter Information Verification

Submitter Full Name: Kris Hauschildt
Organization: Jenkins Foundation
Street Address:
City:
State:
Zip:
Submittal Date: Wed Apr 13 17:55:53 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5006-NFPA 72-2022
Statement: The technical committee created this revision in order to take into account all types of devices that can burn the fuels listed.

Public Input No. 176-NFPA 72-2022 [Section No. 3.3.77.18]

3.3.77.18 Radiant Energy–Sensing Fire Detector.

A non-imaging device that detects radiant energy, such as ultraviolet, visible, or infrared, that is emitted as a product of combustion reaction and obeys the laws of optics. (SIG-IDS)

Statement of Problem and Substantiation for Public Input

Traditionally, in NFPA 72, radiant energy detectors were spark or flame detectors that did not use a visible or thermal imager. These radiant energy detectors (such as triple-IR), use photonic or thermal sensors such as pyroelectric detectors. This definition is being revised in order to add a new definition for thermal image fire detectors. By revising the definition for radiant energy detectors, it will not be necessary to go back through the whole standard to revise the language to differentiate between non-imaging and imaging detectors.

Submitter Information Verification

Submitter Full Name: Scott Lang
Organization: Honeywell International
Street Address:
City:
State:
Zip:
Submittal Date: Wed Mar 09 09:57:34 EST 2022
Committee: SIG-IDS

Committee Statement

Resolution: This addition would create redundancy and is not needed.

Public Input No. 177-NFPA 72-2022 [New Section after 3.3.77.23]

3.3.77.24 Thermal image fire detector.

An initiating device that senses overheated combustible material by imaging in the long wave infrared wavelengths (far infrared) using a focal plane array

Statement of Problem and Substantiation for Public Input

Though thermal image fire detectors are technically radiant energy detectors, the current definition for radiant energy detectors was originally written for traditional (non-imaging) flame and spark detectors. New products are being developed with enhanced capabilities to look for overheated areas in a thermal imager field of view. Specific requirements for these detectors need to be added to the standard and they may be different than traditional flame detectors.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 275-NFPA 72-2022 [New Section after 14.4.3.3]	

Submitter Information Verification

Submitter Full Name: Scott Lang
Organization: Honeywell International
Street Address:
City:
State:
Zip:
Submittal Date: Wed Mar 09 10:03:37 EST 2022
Committee: SIG-IDS

Committee Statement

Resolution: FR-5332-NFPA 72-2022

Statement: Though thermal image fire detectors are technically radiant energy detectors, the current definition for radiant energy detectors was originally written for traditional (non-imaging) flame and spark detectors. New products are being developed with enhanced capabilities to look for overheated areas in a thermal imager field of view. Specific requirements for these detectors need to be added to the standard and they may be different than traditional flame detectors. This action aligns with the committee action on Public Input 178 to add a new section after 17.10.2.4 on thermal image fire detection.

Public Input No. 36-NFPA 72-2021 [Section No. 3.3.79]

3.3.79 Digital Alarm Communicator Receiver (DACR).

A system component that accepts and displays signals from digital alarm communicator transmitters. (DACTs) ~~sent over a managed facilities-based voice network.~~ (SIG-SSS)

Statement of Problem and Substantiation for Public Input

Not all communications transmitting from a DACT to a DACR utilize managed facilities-based voice networks. Todays DACR's may receive communication from a DACT on VOIP, Internet, Radio Network, or Cellular Service just to name a few. By removing the term "managed facilities-based voice networks", you allow for multiple communication paths transmitting methods.

Manufactures are making communicators that utilize internet, cellular, or radio, however, they are still referring to them as DACT's.

Submitter Information Verification

Submitter Full Name: Ty McCurdy
Organization: Ring Protect Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Tue Dec 21 09:18:49 EST 2021
Committee: SIG-SSS

Committee Statement

Resolution: A representative for the submitter of the public input indicated at the meeting that the inputs should have been withdrawn.

Public Input No. 37-NFPA 72-2021 [Section No. 3.3.80]

3.3.80 Digital Alarm Communicator System (DACS).

A system in which signals are transmitted from a digital alarm communicator transmitter (DACT) located at the protected ~~premises through a managed facilities-based voice network to a~~ premises to a digital alarm communicator receiver (DACR). (SIG-SSS)

Statement of Problem and Substantiation for Public Input

Not all DACS' utilize DACT's that communicate through a managed facilities-based voice network. With todays technologies many communication paths can be part of a DACS such as VOIP, Internet, Radio Network, or Cellular Service. Removing the term managed facilities-based voice networks allows for multiple communication paths.

Manufactures are making communicators that utilize internet, cellular, or radio, however, they are still referring to them as DACT's

Submitter Information Verification

Submitter Full Name: Ty McCurdy
Organization: Ring Protect Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Tue Dec 21 09:39:07 EST 2021
Committee: SIG-SSS

Committee Statement

Resolution: A representative for the submitter of the public input indicated at the meeting that the inputs should have been withdrawn.

Public Input No. 35-NFPA 72-2021 [Section No. 3.3.81]

3.3.81 Digital Alarm Communicator Transmitter (DACT).

A system component at the protected premises to which initiating devices or groups of devices are connected. The DACT ~~seizes the connected telephone line, dials a preselected number to connect to a DACR, and transmits signals~~ transmits signals to the DACR indicating a status change of the initiating device. (SIG-SSS)

Statement of Problem and Substantiation for Public Input

The current definition of DACT specifies "phone lines", as new technologies have evolved the phone line is becoming an outdated method, causing exceptions to be created in this standard.
A DACT is still a DACT regardless of its communications method.

Using the term "phone line" limits the definition of DACT as it relates to a single type of communication method. Since emerging technologies continue to change, this definition should not be affected as these technologies are approved for use.

Manufactures are making communicators that utilize internet, cellular, or radio, however, they are still referring to them as DACT's

I have submitted a "Public Comment" to add the definition of "Telephone" as it relates to the communications of DACT and DACR.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 53-NFPA 72-2022 [New Section after 3.3.313.2]	New definition for the term "Telephone".

Submitter Information Verification

Submitter Full Name: Riley Fields
Organization: Ring Protect Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Thu Dec 16 10:24:44 EST 2021
Committee: SIG-SSS

Committee Statement

Resolution: A representative for the submitter of the public input indicated at the meeting that the inputs should have been withdrawn.

Public Input No. 265-NFPA 72-2022 [Section No. 3.3.104]

3.3.104* Emergency Response Facility (ERF).

A structure or a portion of a structure that houses emergency response agency equipment or personnel for response to events. [~~**1221**~~ **1225** , ~~2019~~ 2022] (SIG-PRS)

Statement of Problem and Substantiation for Public Input

As part of the Emergency Response and Responder Safety Document Consolidation Plan (consolidation plan) as approved by the NFPA Standards Council, NFPA 1221 Standard has been combined into a new consolidated Standard, NFPA 1225.
The definition found in the 2022 edition of NFPA 1225 is identical to what is already in NFPA 72 so no text is being revised, just the pointer to NFPA 1225 instead of NFPA 1221.

Submitter Information Verification

Submitter Full Name: Rodger Reiswig
Organization: Johnson Controls
Street Address:
City:
State:
Zip:
Submittal Date: Fri Apr 29 09:13:36 EDT 2022
Committee: SIG-PRS

Committee Statement

Resolution: FR-5110-NFPA 72-2022
Statement: As part of the Emergency Response and Responder Safety Document Consolidation Plan, as approved by the NFPA Standards Council, NFPA 1221 Standard has been combined into a new consolidated Standard, NFPA 1225, Standard for Emergency Services Communications. The definition found in the 2022 edition of NFPA 1225 is identical to what is already in NFPA 72 so no text is being revised, just the pointer to NFPA 1225 instead of NFPA 1221.

Public Input No. 340-NFPA 72-2022 [Section No. 3.3.193]

3.3.193* Observation.

A suggested correction, improvement, or enhancement**, which is not considered to be part of a design review,** to the fire alarm or signaling system that is not considered to be an impairment or deficiency. (SIG-TMS)

Statement of Problem and Substantiation for Public Input

This public input is in conjunction with public inputs 341 and 342 which intend to clarify that personnel performing inspection, testing, and maintenance of existing previously approved fire alarm and signaling systems are not, unless otherwise licensed or approved by the authority having jurisdiction, design professionals. And, that any observations that they make are not part of a design review. And, that during the course of their inspection, testing, and maintenance duties, they are not required to verify the adequacy of design of existing previously approved system installations.

- Public Input 340 clarifies the definition of an Observation to state that it is not part of a design review.
- Public Input 341 adds a definition for Design Review so that the addition to the definition of Observation is clear.
- Public input 342 borrows language from the 2020 NFPA 25 – section 1.1.3.1 to clarify that inspection, testing, and maintenance personal performing their duties for previously approved system installations are not required to confirm the adequacy of the design of the system.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 341-NFPA 72-2022 [New Section after 3.3.75]	
Public Input No. 342-NFPA 72-2022 [New Section after 14.1.5]	
Public Input No. 341-NFPA 72-2022 [New Section after 3.3.75]	
Public Input No. 342-NFPA 72-2022 [New Section after 14.1.5]	

Submitter Information Verification

Submitter Full Name: Jason Dupuis
Organization: Cintas Fire Protection F19
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 24 10:25:40 EDT 2022
Committee: SIG-TMS

Committee Statement

Resolution: The initial design review and periodic inspection, testing, and maintenance requirements are clearly differentiated in the code. The requirements for how the design review and periodic inspection, testing, and maintenance are performed vary by jurisdiction. Adopting the proposed text would add confusion to the responsibilities of the jurisdiction.

Public Input No. 260-NFPA 72-2022 [Section No. 3.3.244]

3.3.244* Radio Frequency.

~~The number of electromagnetic wave frequency cycles transmitted by a radio in 1 second.~~
~~[**1221,** 2019~~
A measurement representing the oscillation rate of the electromagnetic radiation spectrum or electromagnetic radio waves. [**1225,** 2022] (SIG-PRS)

Statement of Problem and Substantiation for Public Input

As part of the Emergency Response and Responder Safety Document Consolidation Plan (consolidation plan) as approved by the NFPA Standards Council, NFPA 1221 Standard has been combined into a new consolidated Standard, NFPA 1225.
The definition for Radio Frequency has been slightly modified and is a direct extraction as submitted.

Submitter Information Verification

Submitter Full Name: Rodger Reiswig
Organization: Johnson Controls
Street Address:
City:
State:
Zip:
Submittal Date: Fri Apr 29 08:51:41 EDT 2022
Committee: SIG-PRS

Committee Statement

Resolution: FR-5113-NFPA 72-2022
Statement: As part of the Emergency Response and Responder Safety Document Consolidation Plan, as approved by the NFPA Standards Council, NFPA 1221 Standard has been combined into a new consolidated Standard, NFPA 1225, Standard for Emergency Services Communications. The definition for Radio Frequency has been slightly modified and is a direct extraction as submitted.

Public Input No. 273-NFPA 72-2022 [Section No. 3.3.280]

3.3.280* Sleeping Area.

The area of a dwelling unit where the bedrooms or sleeping rooms are located including living areas intended for combination sleeping/living (See 3 .3.159). (SIG-HOU)

Statement of Problem and Substantiation for Public Input

The proposed additional indication for "living areas intended for combination living/sleeping" in this definition is to help designers and AHJs to design and enforce the Sleeping Area requirements in Section 18.4.6.
Section 18.4.6 requires audible appliances to be provided in sleeping areas however, it is not clear if living areas of a dwelling unit require to have audible appliances per this section.
The annex to Section 18.4.6 includes in item 3 : "Common spaces within dwelling units, such as living rooms or dens, that have couches, beds, or sleeping furniture" and this is similar to the current definition of ""living areas intended for combination living/sleeping" - However, since this is Annex material - it provides intent and interpretation only and is not easily enforceable by AHJs.
If the proposal to expand the sleeping areas definition to include "living areas intended for combination living/sleeping" which is already included in 3.3.159 - will be accepted - it will be easier for AHJs to enforce audible appliances in living areas of dwelling units rather than using the annex material which is not enforceable and is a constant source between owners and designers and Fire AHJs.
Due to this issue (Annex material is not enforceable), we had to write a local ordinance in my jurisdiction (SFFD) to clarify that living areas of a dwelling unit are considered as sleeping areas and therefore require audible appliances. This proposal will fix this issue for many other Fire AHJs

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 274-NFPA 72-2022 [Section No. A.3.3.280]	

Submitter Information Verification

Submitter Full Name: Sagiv Weiss-Ishai
Organization: San Francisco Fire Department
Affiliation: SFFD
Street Address:
City:
State:
Zip:
Submittal Date: Mon May 02 13:40:15 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: The technical committee resolves this public input because it is unknown at the time of construction if there will be a sleeping area in other areas that are not specifically bedrooms such as a den that could have a hide-a-bed.

Public Input No. 335-NFPA 72-2022 [Section No. 3.3.288]

3.3.288 Software.

Programs, instruments, procedures, data, and the like that are executed by a central processing unit of a product and that influences the functional performance of that product. For the purpose of this Code, software is one of ~~two~~ three types: executive software~~ and site~~ , site -specific software, and cybersecurity-related only . (SIG-TMS)

3.3.288.1 Executive Software.

Control and supervisory program that manages the execution of all other programs and directly or indirectly causes the required functions of the product to be performed. Executive software is sometimes referred to as firmware, BIOS, or executive program. (SIG-TMS)

3.3.288.2 Site-Specific Software.

Program that is separate from, but controlled by, the executive software that allows inputs, outputs, and system configuration to be selectively defined to meet the needs of a specific installation.~~ Typically~~ (SIG-TMS) It includes the following subcategories –

i. Operational Site-Specific Software – Programs and information that affects the equipment and operation of a system as intended during emergency conditions. Typically it defines the type and quantity of hardware ~~, customized labels,~~ and the specific operating ~~features~~ controls or sequences of a system.~~ (SIG-TMS)~~

ii. Informational Site-Specific Software – Programs and information that are included as part of the site-specific software, but whose inclusion, exclusion, or alteration does not affect the type and quantity of hardware on a system, or its operational sequence as intended during emergency conditions.

A.3.3.288.2. Typically it includes custom labeling for hardware, historical event information, reports, maintenance information or testing, or other non-emergency related functions .

Statement of Problem and Substantiation for Public Input

Subcategories of site specific software provide needed distinctions between operational and informational software.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 337-NFPA 72-2022 [New Section after 3.3.288.2]	

Submitter Information Verification

Submitter Full Name: Chris Heaton
Organization: Electronic Security Association
Affiliation: Electronic Security Association
Street Address:
City:
State:
Zip:

Submittal Date: Mon May 23 15:59:17 EDT 2022
Committee: SIG-TMS

Committee Statement

Resolution: FR-5280-NFPA 72-2022
Statement: The definition changes and additions support the increasing need for cybersecurity safety requirements, and the addition of cybersecurity software requirements to the code.

Public Input No. 496-NFPA 72-2022 [Sections 3.3.288.1, 3.3.288.2]

Sections 3.3.288.1, 3.3.288.2

3.3.288.1 Executive Software.

Control and supervisory program that manages the execution of all other programs and directly or indirectly causes the required functions of the product to be performed. Executive software is sometimes referred to as firmware, BIOS, or executive program. (SIG-TMS)

3.3.288.2 Site-Specific Software.

Program that is separate from, but controlled by, the executive software that allows inputs, outputs, and system configuration to be selectively defined to meet the needs of a specific installation. It includes the following subcategories:

i. Operational Site-Specific Software-Programs and information that affects the equipment and operation of a system as intended during emergency conditions. Typically it defines the type and quantity of ~~hardware, customized labels, and~~ hardware and the specific operating ~~features~~ controls or sequences of a system. ~~(SIG-TMS)~~

ii. Informational Site-Specific Software-Programs and information that are include as part of the site-specific software, but whose inclusion, exclusion, or alteration does not affect the type and quantity of hardware on a system, or its operational sequence as intended during emergency conditions.

A.3.3.288.2. Typically it includes custom labeling for hardware, historical event information, reports, maintenance information or testing, or other non-emergency related functions.

3.3.288.3 Cybersecurity-related Only Software - Software that is included in a system element that is arranged such that its inclusion or exclusion in no way affects the executive or site-specific software execution, and whose purpose is to reduce the vulnerability of the system to cybersecurity attacks.

Statement of Problem and Substantiation for Public Input

Building systems are increasingly networked and/ or accessible to public facing networks. Evidence has been identified in multiple case studies including the Fire Protection Research Foundation (FPRF) report. The FPRF conducted research that has identified gaps and assessed the appropriateness of the existing provisions and guidance related to cybersecurity.
Their report lists gaps that include:

- Configuration – • Interconnection of external systems (call centers, service providers) could allow for unauthorized activity if those external systems are not secure. • Interconnection with other building systems with no access/restriction to prevent unintended communications. • If one interconnected system is compromised and life safety is connected, it would be safe to assume that all are compromised.
- Implementation – • Systems that have remote access for maintenance or monitoring could introduce vulnerabilities if not properly implemented. • Using secure gateways and configuring devices with only the necessary communication mechanisms can reduce exposure. • The use of insecure wireless devices, or lack of wireless device authentication can be a weakness.
- Security – • Complexity of cybersecurity threats and solutions are increasing, making systems more vulnerable to highly sophisticated arson (terrorist) attacks, industrial espionage, and insider threats. Because of this, it is becoming more difficult to defend against these attacks and new solutions need to be implemented.
- Access – • Weak logical and physical access to 3rd party networks and systems. • Easy to implant hardware or software devices into environment

The attached public Input addresses the above gaps by requiring industry accepted cyber security

practices.
There are several incidents that have already occurred and are referenced here.

- https://www.smartcitiesdive.com/news/hackers-emergency-sirens-texas-cities/550639/
- Researchers Hack Building Control System at Google Australia Office | WIRED

Target Hackers Broke in Via HVAC Company – Krebs on Security

Submitter Information Verification

Submitter Full Name: Megan Hayes
Organization: Nema
Street Address:
City:
State:
Zip:
Submittal Date: Mon May 30 14:33:11 EDT 2022
Committee: SIG-TMS

Committee Statement

Resolution: FR-5280-NFPA 72-2022
Statement: The definition changes and additions support the increasing need for cybersecurity safety requirements, and the addition of cybersecurity software requirements to the code.

Public Input No. 337-NFPA 72-2022 [New Section after 3.3.288.2]

Cybersecurity-related Only Software

Software that is included in a system element that is arranged such that its inclusion or exclusion in no way affects the executive or site-specific software execution, and whose purpose is to reduce the vulnerability of the system to cybersecurity attacks.

Statement of Problem and Substantiation for Public Input

Defining term added to types of software in section 3.3.288.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 335-NFPA 72-2022 [Section No. 3.3.288]	added subsection to 3.3.288

Submitter Information Verification

Submitter Full Name: Chris Heaton
Organization: Electronic Security Association
Affiliation: Electronic Security Association
Street Address:
City:
State:
Zip:
Submittal Date: Mon May 23 16:21:52 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5363-NFPA 72-2022
Statement: The new term is defined to recognize types of software that are used only for cybersecurity protection.

Public Input No. 479-NFPA 72-2022 [Section No. 3.3.288.2]

3.3.288.2 Site-Specific Software.

Program that is separate from, but controlled by, the executive software that allows inputs, outputs, and system configuration to be selectively defined to meet the needs of a specific installation. ~~Typically it defines the type and quantity of hardware, customized labels, and the specific operating features of a system. (SIG-TMS)~~

~~TMS)~~

It includes the following subcategories –

i. Informational Site-Specific Software – Programs and information that are included as part of the site-specific software, but whose inclusion, exclusion, or alteration does not affect the type and quantity of hardware on a system, or its operational sequence as intended during emergency conditions. Typically it includes custom labeling for hardware, historical event information, reports, maintenance information or testing, or other non-emergency related functions .

ii. Operational Site-Specific Software – Programs and information that affects the equipment and operation of a system as intended during emergency conditions. Typically it defines the type and quantity of hardware and the specific operating controls or sequences of a system.

3.3.288.3 Cybersecurity-related Only Software – Software that is included in a system element that is arranged such that its inclusion or exclusion in no way affects the executive or site-specific software execution, and whose purpose is to reduce the vulnerability of the system to cybersecurity attacks.

Additional Proposed Changes

File Name	Description	Approved
NFPA_72_BS_SB_3.3.288.2_and_3.3.288.3_defns.docx		

Statement of Problem and Substantiation for Public Input

This matches what is already in the cybersecurity proposal

Submitter Information Verification

Submitter Full Name: Tim Knisely
Organization: Automatic Fire Alarm Association (AFAA)
Affiliation: Automatic Fire Alarm Association (AFAA)
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 27 12:13:14 EDT 2022
Committee: SIG-TMS

Committee Statement

Resolution: FR-5280-NFPA 72-2022

Statement: The definition changes and additions support the increasing need for cybersecurity safety requirements, and the addition of cybersecurity software requirements to the code.

Public Input No. 53-NFPA 72-2022 [New Section after 3.3.313.2]

3.3.314 Telephone

An instrument for reproducing sounds at a distance specifically : one in which sound is converted into electrical impulses for transmission (as by wire or radio waves). This could be part of a Switched Telephone Network or a Managed Facilities-Based Voice Network.

See 3.3.168*; 3.3.309

Statement of Problem and Substantiation for Public Input

The term "Telephone" is used throughout NFPA but there is no definition currently.

This is to provide clarity where the word "Telephone" is used and could mean either Switched Telephone Network or Managed Facilities-Based Voice Network and not other forms of telephone service such as unmanaged VOIP.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 35-NFPA 72-2021 [Section No. 3.3.81]	

Submitter Information Verification

Submitter Full Name: Riley Fields
Organization: Ring Protect Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Thu Jan 06 11:20:47 EST 2022
Committee: SIG-SSS

Committee Statement

Resolution: A representative for the submitter of the public input indicated at the meeting that the inputs should have been withdrawn.

Public Input No. 199-NFPA 72-2022 [New Section after 3.3.323]

3.3.324 Unconditioned Area

Enclosed areas, rooms, or spaces without continuous climate or HVAC controls.

Statement of Problem and Substantiation for Public Input

This is a new definition to support a new requirement in Chapter 17 for carbon monoxide detectors in unconditioned areas.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 198-NFPA 72-2022 [New Section after 17.12.2]	
Public Input No. 198-NFPA 72-2022 [New Section after 17.12.2]	

Submitter Information Verification

Submitter Full Name: Scott Lang
Organization: Honeywell International
Street Address:
City:
State:
Zip:
Submittal Date: Tue Mar 29 10:54:09 EDT 2022
Committee: SIG-IDS

Committee Statement

Resolution: FR-5267-NFPA 72-2022

Statement: A definition is added to support the new requirement in Chapter 17 for carbon monoxide detectors in unconditioned areas. The annex material further explains what an unconditioned space is to eliminate confusion and make it more user friendly.

Public Input No. 369-NFPA 72-2022 [New Section after 3.3.331]

Waterflow Alarm-Initiating Device

An attachment to a water-based fire protection system that detects and signals a predetermined volume of water flow.

Statement of Problem and Substantiation for Public Input

This definition is needed since it is a term used throughout the code.

Submitter Information Verification

Submitter Full Name: Chris Heaton
Organization: Electronic Security Association
Affiliation: Electronic Security Association
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 25 10:12:57 EDT 2022
Committee: SIG-IDS

Committee Statement

Resolution: FR-5268-NFPA 72-2022
Statement: The first revision extracts a definition from NFPA 13 to allow direct correlation between the NFPA 72 and NFPA 13.

Public Input No. 461-NFPA 72-2022 [New Section after 3.3.332]

TITLE OF NEW CONTENT

3.3.332 Waterflow Alarm-Initiating Device.

An attachment to a water-based fire protection system that detects and signals a predetermined volume of water flow.

Additional Proposed Changes

File Name	Description	Approved
NFPA_72_BS_SB_3.3.332_water_flow_comments.docx		

Statement of Problem and Substantiation for Public Input

Add definition of waterflow alarm device since it is used throughout the code.

Submitter Information Verification

Submitter Full Name: Tim Knisely
Organization: Automatic Fire Alarm Association (AFAA)
Affiliation: Automatic Fire Alarm Association (AFAA)
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 27 09:44:03 EDT 2022
Committee: SIG-IDS

Committee Statement

Resolution: FR-5268-NFPA 72-2022
Statement: The first revision extracts a definition from NFPA 13 to allow direct correlation between the NFPA 72 and NFPA 13.

Public Input No. 502-NFPA 72-2022 [New Section after 3.3.332]

3.3.332 Waterflow Alarm-Initiating Device

An attachment to a water-based fire protection system that detects and signals a predetermined voume of water flow.

Statement of Problem and Substantiation for Public Input

add definition of waterflow alarm device since it is used throughout the code.

Submitter Information Verification

Submitter Full Name: Megan Hayes
Organization: Nema
Street Address:
City:
State:
Zip:
Submittal Date: Mon May 30 15:22:03 EDT 2022
Committee: SIG-IDS

Committee Statement

Resolution: FR-5268-NFPA 72-2022
Statement: The first revision extracts a definition from NFPA 13 to allow direct correlation between the NFPA 72 and NFPA 13.

Public Input No. 579-NFPA 72-2022 [Chapter 4]

Chapter 4 ~~Reserved~~ ~~**Noncombustible material [101: 4.6.13]**~~

4.1 *

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 Assessing Combustibility of Materials 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 Assessing Combustibility of Materials Using a Tube Furnace with a Cone-shaped Airflow Stabilizer, at 750°C.* [101:4.6.13]

A.4.1 The provisions of 4.1 do not require inherently noncombustible materials to be tested in order to be classified as noncombustible materials. [101: A.4.6.13.1]

A.4.1 (1) Examples of such materials include steel, concrete, masonry, and glass.

The provision of 4.1(1) recognizes that some materials are inherently noncombustible and do not require testing to receive a classification of noncombustible. The text of A.4.1(1) provides examples of such materials. [101:A.6.6.13.1(1)]

Also, add ASTM E136 (2019a) and ASTM E2652 (2018) into section 2 on referenced ASTM standards.

ASTM E136, *Standard Test Method for Assessing Combustibility of Materials Using a Vertical Tube Furnace at 750°C* , 2019.

ASTM E2652, *Standard Test Method for Assessing Combustibility of Materials Using a Tube Furnace with a Cone-shaped Airflow Stabilizer, at 750°C* , 2018.

Statement of Problem and Substantiation for Public Input

NFPA 72 requires the use of noncombustible materials in two instances but does not describe what that means. This text, extracted from NFPA 101, describes the requirements for a noncombustible material. Note that US codes and standards typically require materials to "pass" ASTM E136 in order to be classified as noncombustible. That means that this requirement is slightly less severe than the requirement that the material "will not ignite, burn, support combustion, or release flammable vapors when subjected to fire or heat", since the requirements of ASTM E136 allow a material to have some minimal flaming and mass loss and temperature increase, as shown below. Having discussed the criteria in ASTM E136 it is important to note that some materials will be classified as combustible or noncombustible depending on the amount (typically very small) of combustible resin or binder included to ensure the material has appropriate cohesion.
ASTM E136 acceptance criteria:
ASTM E136 - Standard Test Method for Assessing Combustibility of Materials Using a Vertical Tube Furnace at 750°C

15.1 Report the material as passing the test if at least three of the four test specimens tested meet the individual test specimen criteria detailed in 15.2 or 15.3. The three test specimens do not need to meet the same individual test specimen criteria.

15.2 If the weight loss of the test specimen is 50 % or less, the material passes the test when the criteria in 15.2.1 and in 15.2.2 are met:
15.2.1 The recorded temperatures of the surface and interior thermocouples do not at anytime during the test rise more than 30°C (54°F) above the stabilized furnace temperature measured at T2 prior to the test.
15.2.2 There is no flaming from the test specimen after the first 30 s.
15.3 If the weight loss of the specimen exceeds 50 %, the material passes the test when the criteria in 15.3.1 and in 15.3.2 are met:
15.3.1 The recorded temperatures of the surface and interior thermocouples do not at anytime during the test rise above the stabilized furnace temperature measured at T2 prior to the test.
15.3.2 No flaming from the test specimen is observed at any time during the test.
15.4 Report the option that was used.

Submitter Information Verification

Submitter Full Name: Marcelo Hirschler
Organization: GBH International
Street Address:
City:
State:
Zip:
Submittal Date: Wed Jun 01 18:43:10 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: It is not within the scope of NFPA 72 to establish guidance on determining Noncombustible Material. Users should refer to the adopted building code to determine compliance.

Public Input No. 224-NFPA 72-2022 [Section No. 7.2.1]

7.2.1*

Where documentation is required by the authority having jurisdiction, the following list shall represent the minimum documentation required for new systems and additions or alterations to existing systems:

(1) * Written narrative providing intent and system description

(2) Riser diagram

(3) Floor plan layout showing locations of all devices, control equipment, and supervising station and shared communications equipment with each sheet showing the following:

(4) Point of compass (north arrow)

(5) A graphic representation of the scale used

(6) Room use identification

(7) Building features that will affect the placement of initiating devices and notification appliances

(8) Sequence of operation in either an input/output matrix or narrative form

(9) Equipment technical data sheets

(10) Manufacturers' published instructions, including operation and maintenance instructions

(11) Battery capacity and safety margin calculations (where batteries are provided)

(12) Voltage drop calculations for notification appliance circuits

(13) Mounting height elevation for wall-mounted devices and appliances

(14) Where occupant notification is required, minimum sound pressure levels that must be produced by the audible notification appliances in applicable covered areas

(15) Locations of alarm notification appliances, including candela ratings for visual alarm notification appliances

(16)* Pathway diagrams between the control unit and shared communications equipment within the protected premises

(17) Completed record of completion in accordance with 7.5.6

(18) For software-based systems, a copy of site-specific software, including specific instructions on how to obtain the means of system and software access (password)

(19) Record (as-built) drawings

(20) Records, record retention, and record maintenance in accordance with Section 7.7

(21) Completed record of inspection and testing in accordance with 7.6.6

(22) Verification of fire alarm activation on suppression system activation (all initiating devices)

(23) Central Station notification of suppression system activation

(24) Make up air shut down (operation and identificatoin of location of devices)

(25) Exhaust air activation (if not in operation) - operation and identification of location of devices

(26) Cooking appliance shut down

Statement of Problem and Substantiation for Public Input

Fire suppression systems installed in accordance with other NFPA standards are rarely if ever documented in this matrix of requirements. Additionally, the fire suppression system activation and associated fan operations and power disconnect as well as signals to monitoring are likewise not documented. Testing of the activation of fire suppression systems and integration with the fire alarm system is necessary for full system reliability. Locations of all of the related devices also need to be included in the documentation.

Submitter Information Verification

Submitter Full Name: Scott Futrell
Organization: Futrell Fire Consult & Design, Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Thu Apr 14 13:35:25 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: Proposed additions are either redundant with other code sections or specific items not common to all fire alarm systems.

Public Input No. 225-NFPA 72-2022 [Section No. 7.2.1]

7.2.1*

Where documentation is required by the authority having jurisdiction, the following list shall represent the minimum documentation required for new systems and additions or alterations to existing systems:

(1) * Written narrative providing intent and system description

(2) Riser diagram

(3) Floor plan layout showing locations of all devices, control equipment, and supervising station and shared communications equipment with each sheet showing the following:

(4) Point of compass (north arrow)

(5) A graphic representation of the scale used

(6) Room use identification

(7) Building features that will affect the placement of initiating devices and notification appliances

(8) Sequence of operation in either an input/output matrix or narrative form

(9) Equipment technical data sheets

(10) Manufacturers' published instructions, including operation and maintenance instructions

(11) Battery capacity and safety margin calculations (where batteries are provided)

(12) Voltage drop calculations for notification appliance circuits

(13) Mounting height elevation for wall-mounted devices and appliances

(14) Where occupant notification is required, minimum sound pressure levels that must be produced by the audible notification appliances in applicable covered areas

(15) Locations of alarm notification appliances, including candela ratings for visual alarm notification appliances

(16)* Pathway diagrams between the control unit and shared communications equipment within the protected premises

(17) Completed record of completion in accordance with 7.5.6

(18) For software-based systems, a copy of site-specific software, including specific instructions on how to obtain the means of system and software access (~~password~~ passwords for all levels of access)

(19) Record (as-built) drawings

(20) Records, record retention, and record maintenance in accordance with Section 7.7

(21) Completed record of inspection and testing in accordance with 7.6.6

Statement of Problem and Substantiation for Public Input

The passwords for all levels of access need to be available to the building owner or manager. This is very important for emergency service or when the installer is not available. It is understood by the author that the proprietary system sellers, installers, and dealers will be against this change. They do not have a relevant argument because the passwords are necessary for use by the owner or

manager's when they need additional assistance from other contractors. Fire and life safety is the goal and cannot be assured or guaranteed without access to the required passwords.

Submitter Information Verification

Submitter Full Name: Scott Futrell
Organization: Futrell Fire Consult & Design, Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Thu Apr 14 14:45:43 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: The proposed addition is redundant with the sentence it is in.

Public Input No. 315-NFPA 72-2022 [Section No. 7.2.1]

7.2.1*

Where documentation is required by the authority having jurisdiction, the following list shall represent the minimum documentation required for new systems and additions or alterations to existing systems:

(1) * Written narrative providing intent and system description

(2) Riser diagram

(3) Floor plan layout showing locations of all devices, control equipment, and supervising station and shared communications equipment with each sheet showing the following:

(4) Point of compass (north arrow)

(5) A graphic representation of the scale used

(6) Room use identification

(7) Building features that will affect the placement of initiating devices and notification appliances

(8) Sequence of operation in either narrative form, a logic diagram, or an input/output matrix ~~or narrative form~~

(9) Equipment technical data sheets

(10) Manufacturers' published instructions, including operation and maintenance instructions

(11) Battery capacity and safety margin calculations (where batteries are provided)

(12) Voltage drop calculations for notification appliance circuits

(13) Mounting height elevation for wall-mounted devices and appliances

(14) Where occupant notification is required, minimum sound pressure levels that must be produced by the audible notification appliances in applicable covered areas

(15) Locations of alarm notification appliances, including candela ratings for visual alarm notification appliances

(16) * Pathway diagrams between the control unit and shared communications equipment within the protected premises

(17) Completed record of completion in accordance with 7.5.6

(18) For software-based systems, a copy of site-specific software, including specific instructions on how to obtain the means of system and software access (password)

(19) Record (as-built) drawings

(20) Records, record retention, and record maintenance in accordance with Section 7.7

(21) Completed record of inspection and testing in accordance with 7.6.6

Statement of Problem and Substantiation for Public Input

Provide consistent language among paragraphs related to the sequence of operation and add logic diagram as a means to depict the sequence of operation.

In addition to a narrative or an input/output matrix, a logic diagram is also a valid method to document

the sequence of operation of a system. Sections of the Code that currently refer to documenting the sequence of operation only refer to a narrative description and/or an input/output matrix. Approvers of system design documentation are sometimes hesitant to approve or will not approve a design without a narrative or an input /output matrix even when a logic diagram is part of the design and provides more concise information, because NFPA 72 doesn't include a logic diagram as means to show the sequence of operation.

A logic diagram depicts the sequence of operation in easy-to-understand graphics, by interconnection of symbols representing the design of the entire system, not only showing the output for various inputs, but also the inter-working relationship between hardware and software within the system. A typical logic diagram will include internal components such as monitor modules, control modules, control relays, program addresses and custom messages for system inputs required for actuation of evacuation signals and ancillary functions for the intended sequence of operation. A logic diagram is particularly useful for addressable systems where an enormous amount of information representing the sequence of operation is required in large buildings or complex systems, whereas an input/output matrix is often confusing to produce and read (so many dots) when the system is large or complex. (NFPA 72 Figure A.14.6.1.1, for example, shows duplicate entries for 1st floor detectors, no 2nd floor detectors, and duct detectors that actuate alarm signals).

Older model addressable systems that require panel upgrades (CPU) for maintenance issues will come with firmware versions that won't likely support the older model software revision. In fact the older software revision software may require out of date laptop computer software (i.e., windows 98) to read it. The software media required to be controlled by NFPA 72 in cases such as this could be useless. A good logic diagram in a design is capable of providing the programming information necessary to restore the original sequence of operation because all programmable hardware is shown on the drawing with custom messages and program addresses.

A logic diagram is also a useful tool to convey detailed programming information to the programmer to ensure that site-specific software is configured to meet the owner's intended sequence of operation. Some facilities for example may be directed to implement software design control processes (i.e., NQA-1, Quality Assurance Requirements for Nuclear Facility Applications) that identify and document software design requirements including the operating system, function, interfaces, performance criteria, and design inputs of a computer program, such as site-specific fire alarm programs that can be created or modified. These software design requirements can be met with a logic diagram whereas an input/output matrix lacks interconnection detail between hardware and software.

See PI 463-NFPA 72-2022 uploaded logic diagram.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 344-NFPA 72-2022 [Section No. 7.4.9]	
Public Input No. 345-NFPA 72-2022 [Section No. 7.5.4]	
Public Input No. 346-NFPA 72-2022 [Section No. 7.5.5.2]	
Public Input No. 352-NFPA 72-2022 [Section No. 10.14.7.4]	
Public Input No. 353-NFPA 72-2022 [Section No. 10.15.10.5]	
Public Input No. 368-NFPA 72-2022 [Section No. 14.4.3.2]	
Public Input No. 375-NFPA 72-2022 [Section No. A.7.3.2]	
Public Input No. 376-NFPA 72-2022 [Section No. A.14.4.3]	
Public Input No. 379-NFPA 72-2022 [Section No. A.24.3.9]	
Public Input No. 451-NFPA 72-2022 [Section No. A.7.4.9]	
Public Input No. 456-NFPA 72-2022 [Section No. A.7.5.5.2]	
Public Input No. 463-NFPA 72-2022 [Section No. A.14.6.1.1]	
Public Input No. 344-NFPA 72-2022 [Section No. 7.4.9]	
Public Input No. 345-NFPA 72-2022 [Section No. 7.5.4]	

Public Input No. 346-NFPA 72-2022 [Section No. 7.5.5.2]
Public Input No. 352-NFPA 72-2022 [Section No. 10.14.7.4]
Public Input No. 353-NFPA 72-2022 [Section No. 10.15.10.5]
Public Input No. 375-NFPA 72-2022 [Section No. A.7.3.2]
Public Input No. 376-NFPA 72-2022 [Section No. A.14.4.3]
Public Input No. 379-NFPA 72-2022 [Section No. A.24.3.9]
Public Input No. 451-NFPA 72-2022 [Section No. A.7.4.9]
Public Input No. 463-NFPA 72-2022 [Section No. A.14.6.1.1]

Submitter Information Verification

Submitter Full Name: Herbert Hurst
Organization: Savannah River Nuclear Solutio
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 18 15:29:56 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: Logic diagrams can be excessively long and complex for some systems/buildings and would be difficult for all parties involved in development, review, and approval to read. Current language does not prohibit a logic diagram in addition to narrative form or input/output matrix.

Public Input No. 76-NFPA 72-2022 [Section No. 7.4.3]

7.4.3

Shop drawings for fire alarm or emergency communications systems shall provide ~~basic information and shall provide the~~ both of the following:

(1) Basic information

(2) The basis for the record (as-built) drawings required in accordance with 7.5.~~2~~ 5 .

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text utilized listed items in accordance with MOS section 3.3.1 Listed Items.
Also, the 2022 edition has the section for Record Drawings (As-Builts) in section 7.5.5, not 7.5.2. Changed the section of reference to be most relevant.

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
Organization: Fike Corporation
Affiliation: Fire Suppression Systems Association (FSSA)
Street Address:
City:
State:
Zip:
Submittal Date: Fri Jan 14 13:20:54 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5007-NFPA 72-2022

Statement: The Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text.

Also, the 2022 edition has the section for Record Drawings (As-Builts) in section 7.5.5, not 7.5.2. Changed the section of reference to be most relevant.

Public Input No. 33-NFPA 72-2021 [Section No. 7.4.4]

7.4.4

Shop drawings shall include the following information:

(1) Name of protected premises, owner, and occupant (where applicable)

(2) Name of installer or contractor

(3) Location of protected premises

(4) Device legend and symbols in accordance with NFPA 170, or other symbols acceptable to the authority having jurisdiction

(5) Date of issue and any revision dates

(6) Edition year of NFPA 72 to which the system is designed

Statement of Problem and Substantiation for Public Input

This is an important piece of information to include on the drawing . The text was modelled after current NFPA 13 requirements.

Submitter Information Verification

Submitter Full Name: Chase Browning
Organization: Medford Fire Department
Affiliation: Southern Oregon Fire Code Officials
Street Address:
City:
State:
Zip:
Submittal Date: Wed Dec 01 12:11:49 EST 2021
Committee: SIG-FUN

Committee Statement

Resolution: No problem statement or substantiation was provided by the submitter. The proposed item is redundant with item 4 in the System Record of Completion [Figure 7.8.2(a)].

Public Input No. 145-NFPA 72-2022 [New Section after 7.4.7]

7.4.7.1

Control Unit diagrams shall be provided for all control equipment (i.e., equipment listed as either a control unit or a control unit accessory), power supplies, battery chargers, and annunciators.

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text adds a new section with separate paragraphs for the multiple requirements.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 144-NFPA 72-2022 [Section No. 7.4.7]	

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
Organization: Fike Corporation
Affiliation: Fire Suppression Systems Association (FSSA)
Street Address:
City:
State:
Zip:
Submittal Date: Mon Jan 24 17:27:52 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5009-NFPA 72-2022

Statement: The Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text.

Public Input No. 146-NFPA 72-2022 [New Section after 7.4.7]

7.4.7.2

Control unit diagrams shall include the following information:

(1) Identification of the control equipment depicted

(2) Location(s) of control equipment

(3) All field wiring terminals and terminal identifications

(4) All circuits connected to field wiring terminals and circuit identifications

(5) All indicators and manual controls

(6) Field connections to supervising station signaling equipment, releasing equipment, or emergency safety control interfaces, where provided

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text adds a new section with separate paragraphs for the multiple requirements.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 144-NFPA 72-2022 [Section No. 7.4.7]	directly related

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
Organization: Fike Corporation
Affiliation: Fire Suppression Systems Association (FSSA)
Street Address:
City:
State:
Zip:
Submittal Date: Mon Jan 24 17:30:32 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5009-NFPA 72-2022

Statement: The Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text.

Public Input No. 144-NFPA 72-2022 [Section No. 7.4.7]

7.4.7

Control ~~unit diagrams shall be provided for all control equipment (i.e., equipment listed as either a control unit or control unit accessory), power supplies, battery chargers, and annunciators and shall include the following information:~~

(1) ~~Identification of the control equipment depicted~~

(2) ~~Location(s) of control equipment~~

(3) ~~All field wiring terminals and terminal identifications~~

(4) ~~All circuits connected to field wiring terminals and circuit identifications~~

(5) ~~All indicators and manual controls~~

(6) ~~Field connections to supervising station signaling equipment, releasing equipment, or emergency safety control interfaces, where provided~~

Unit Diagrams.

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text adds a new section with separate paragraphs for the multiple requirements.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 145-NFPA 72-2022 [New Section after 7.4.7]	
Public Input No. 146-NFPA 72-2022 [New Section after 7.4.7]	

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
Organization: Fike Corporation
Affiliation: Fire Suppression Systems Association (FSSA)
Street Address:
City:
State:
Zip:
Submittal Date: Mon Jan 24 17:23:29 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5009-NFPA 72-2022

Statement: The Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text.

Public Input No. 344-NFPA 72-2022 [Section No. 7.4.9]

7.4.9*

A ~~narrative description or~~ description of the sequence of operation shall be provided in narrative form, a logic diagram,

or an input/output matrix~~ of operation shall be provided to describe the sequence of operation~~ .

Statement of Problem and Substantiation for Public Input

Provide consistent language among paragraphs related to the sequence of operation and add logic diagram as a means to depict the sequence of operation.

In addition to a narrative or an input/output matrix, a logic diagram is also a valid method to document the sequence of operation of a system. Sections of the Code that currently refer to documenting the sequence of operation only refer to a narrative description and/or an input/output matrix. Approvers of system design documentation are sometimes hesitant to approve or will not approve a design without a narrative or an input /output matrix even when a logic diagram is part of the design and provides more concise information, because NFPA 72 doesn't include a logic diagram as means to show the sequence of operation.

A logic diagram depicts the sequence of operation in easy-to-understand graphics, by interconnection of symbols representing the design of the entire system, not only showing the output for various inputs, but also the inter-working relationship between hardware and software within the system. A typical logic diagram will include internal components such as monitor modules, control modules, control relays, program addresses and custom messages for system inputs required for actuation of evacuation signals and ancillary functions for the intended sequence of operation. A logic diagram is particularly useful for addressable systems where an enormous amount of information representing the sequence of operation is required in large buildings or complex systems, whereas an input/output matrix is often confusing to produce and read (so many dots) when the system is large or complex. (NFPA 72 Figure A.14.6.1.1, for example, shows duplicate entries for 1st floor detectors, no 2nd floor detectors, and duct detectors that actuate alarm signals).

Older model addressable systems that require panel upgrades (CPU) for maintenance issues will come with firmware versions that won't likely support the older model software revision. In fact the older software revision software may require out of date laptop computer software (i.e., windows 98) to read it. The software media required to be controlled by NFPA 72 in cases such as this could be useless. A good logic diagram in a design is capable of providing the programming information necessary to restore the original sequence of operation because all programmable hardware is shown on the drawing with custom messages and program addresses.

A logic diagram is also a useful tool to convey detailed programming information to the programmer to ensure that site-specific software is configured to meet the owner's intended sequence of operation. Some facilities for example may be directed to implement software design control processes (i.e., NQA-1, Quality Assurance Requirements for Nuclear Facility Applications) that identify and document software design requirements including the operating system, function, interfaces, performance criteria, and design inputs of a computer program, such as site-specific fire alarm programs that can be created or modified. These software design requirements can be met with a logic diagram whereas an input/output matrix lacks interconnection detail between hardware and software.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 315-NFPA 72-2022 [Section No. 7.2.1]	

Public Input No. 315-NFPA 72-2022 [Section No. 7.2.1]

Submitter Information Verification

Submitter Full Name: Herbert Hurst
Organization: Savannah River Nuclear Solutio
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 24 13:57:34 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: Logic diagrams can be excessively long and complex for some systems/buildings and would be difficult for all parties involved in development, review, and approval to read. Current language does not prohibit a logic diagram in addition to narrative form or input/output matrix.

Public Input No. 575-NFPA 72-2022 [Section No. 7.4.9]

7.4.9*

A narrative description or input/output matrix of operation shall be provided to describe the sequence of operation, including all of the following as applicable:

(1) All inputs individually or grouped by type, floor, and/or function

(2) All outputs individually or grouped by type, floor, and/or function

(3) All conditions reported to a central station, remote supervising station, proprietary supervising station or public emergency alarm reporting system, including whether reporting is via grouped condition type or point identification type

(4) Use of public mode and/or private mode notification by area per 23 . 8.6.1.1

(5) Use of relocation and partial evacuation by floor or area per 24.4.8

(6) Use of presignal features per 23.8.1.1

(7) Use of positive alarm sequence per 23.8.1.2

(8) Use of alarm verification features per 23.8.5.4.1

(9) Use of detector cross-zoning per 23.8.5.4.3 and 23.8.5.4.4

(10) Inputs and outputs for each elevator interface per Chapter 21

(11) Detailed input and output matrix for OEO operation per 21.6.2

(12) Inputs and outputs for each HVAC interface per Chapter 21

(13) All inputs and outputs for activation of a fire fighter's smoke control station (FSCS) or integration with a smoke control system per 21.7.7

(14) Inputs and outputs, including notification sequence, for carbon monoxide or other gas detection

(15) Inputs and outputs for dry pipe and preaction sprinkler systems per 17.17.2.2.2 and 23.11

(16) Inputs and outputs, including abort switches, for integrated releasing systems per 23.8.5.10 and 23.11

(17) Identification and sequence for all selective signaling and manual activation buttons/switches on a control unit and/or annunciator, including bypass activations

(18) Where prerecorded voice messages are used per 24.3.6, the content (i.e., text) of the messages and message sequence, including pre-tones and post-tones shall be detailed

(19) Inputs and outputs for all mass notification system (MNS) features, including MNS override of fire alarm signals allowed by 24.5.13 and text of messages used per 24.3.6

(20) Sequence of operation shall include details on acknowledge, silence, and reset functions as applicable

Statement of Problem and Substantiation for Public Input

Fire investigations continue to reveal that existing owner documentation and shop drawings are not providing detailed sequence of operations, especially for unique situations like positive alarm sequence, presignal, detector cross-zoning and releasing systems. NFPA 72 has multiple provisions allowing uniquely programmed sequences, including selective signaling, partial evacuation sequences,

and the like, but rarely are these detailed in the sequence of operation. This list can be applied by a designer, almost like a checklist, to verify that all unique sequences are detailed in the shop drawings, allowing the Owner to receive documentation of how there system is programmed as required by 7.5.5.2 and 14.6.1.1. This list of requirements is scalable based on the size of the project, as only those items that apply need to be included in the sequence of operation. Also, the list allows both a matrix or a written narrative to meet the objectives of the items in the list.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 576-NFPA 72-2022 [Section No. A.7.5.5.2]	
Public Input No. 577-NFPA 72-2022 [Section No. A.14.6.1.1]	
Public Input No. 580-NFPA 72-2022 [New Section after 21.6.2]	

Submitter Information Verification

Submitter Full Name: Larry Rietz
Organization: Jensen Hughes
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Zip:
Submittal Date: Wed Jun 01 17:30:50 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: Proposed additions are either redundant with other code sections or specific items not common to all fire alarm systems.

Public Input No. 32-NFPA 72-2021 [New Section after 7.4.10]

7.4.11

A narrative description or diagram shall be provided to describe the chosen communications method for Supervising Station Alarm Systems, where applicable.

Statement of Problem and Substantiation for Public Input

A common issues we see is the transmission method is deferred to the end of the project, which was not an issue when only POTS lines were used, however, with newer technologies, we have seen not only proprietary conflicts but secondary power issues along with delays late on in the projects. Having the communications method described on the shop drawings will ensure that the design is coordinated early on and will be beneficial to all parties involved.

Submitter Information Verification

Submitter Full Name: Chase Browning
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Affiliation: Southern Oregon Fire Code Officials
Street Address:
City:
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Zip:
Submittal Date: Wed Dec 01 12:00:41 EST 2021
Committee: SIG-FUN

Committee Statement

Resolution: The proposed text is redundant to control unit diagram requirements in 7.4.7(6). It is not clear how the proposed change would resolve the stated problem.

Public Input No. 345-NFPA 72-2022 [Section No. 7.5.4]

7.5.4

For new emergency communications systems, an owner's manual shall be provided and shall contain the following documentation:

(1) Detailed narrative description of the system inputs, evacuation signaling, ancillary functions, annunciation, intended sequence of operations, expansion capability, application considerations, and limitations

(2) Written sequence of operation for the system including a logic diagram or an operational input/output matrix

(3) Operator instructions for basic system operations, including alarm acknowledgment, system reset, interpretation of system output (LEDs, CRT display, and printout), operation of manual evacuation signaling and ancillary function controls, and change of printer paper

(4) Detailed description of routine maintenance and testing as required and recommended and as would be provided under a maintenance contract, including testing and maintenance instructions for each type of device installed, which includes the following:

(5) Listing of the individual system components that require periodic testing and maintenance

(6) Step-by-step instructions detailing the requisite testing and maintenance procedures, and the intervals at which those procedures shall be performed, for each type of device installed

(7) Schedule that correlates the testing and maintenance procedures that are required by this section

(8) Service directory, including a list of names and telephone numbers of those who provide service for the system

(9) Product data sheets for all system equipment

Statement of Problem and Substantiation for Public Input

Provide consistent language among paragraphs related to the sequence of operation and add logic diagram as a means to depict the sequence of operation.

In addition to a narrative or an input/output matrix, a logic diagram is also a valid method to document the sequence of operation of a system. Sections of the Code that currently refer to documenting the sequence of operation only refer to a narrative description and/or an input/output matrix. Approvers of system design documentation are sometimes hesitant to approve or will not approve a design without a narrative or an input /output matrix even when a logic diagram is part of the design and provides more concise information, because NFPA 72 doesn't include a logic diagram as means to show the sequence of operation.

A logic diagram depicts the sequence of operation in easy-to-understand graphics, by interconnection of symbols representing the design of the entire system, not only showing the output for various inputs, but also the inter-working relationship between hardware and software within the system. A typical logic diagram will include internal components such as monitor modules, control modules, control relays, program addresses and custom messages for system inputs required for actuation of evacuation signals and ancillary functions for the intended sequence of operation. A logic diagram is particularly useful for addressable systems where an enormous amount of information representing the

sequence of operation is required in large buildings or complex systems, whereas an input/output matrix is often confusing to produce and read (so many dots) when the system is large or complex. (NFPA 72 Figure A.14.6.1.1, for example, shows duplicate entries for 1st floor detectors, no 2nd floor detectors, and duct detectors that actuate alarm signals).

Older model addressable systems that require panel upgrades (CPU) for maintenance issues will come with firmware versions that won't likely support the older model software revision. In fact the older software revision software may require out of date laptop computer software (i.e., windows 98) to read it. The software media required to be controlled by NFPA 72 in cases such as this could be useless. A good logic diagram in a design is capable of providing the programming information necessary to restore the original sequence of operation because all programmable hardware is shown on the drawing with custom messages and program addresses.

A logic diagram is also a useful tool to convey detailed programming information to the programmer to ensure that site-specific software is configured to meet the owner's intended sequence of operation. Some facilities for example may be directed to implement software design control processes (i.e., NQA-1, Quality Assurance Requirements for Nuclear Facility Applications) that identify and document software design requirements including the operating system, function, interfaces, performance criteria, and design inputs of a computer program, such as site-specific fire alarm programs that can be created or modified. These software design requirements can be met with a logic diagram whereas an input/output matrix lacks interconnection detail between hardware and software.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 315-NFPA 72-2022 [Section No. 7.2.1]	
Public Input No. 315-NFPA 72-2022 [Section No. 7.2.1]	

Submitter Information Verification

Submitter Full Name: Herbert Hurst
Organization: Savannah River Nuclear Solutio
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 24 14:08:33 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: Logic diagrams can be excessively long and complex for some systems/buildings, and would be difficult for all parties involved in development, review, and approval to read. Current language does not prohibit a logic diagram in addition to narrative form or input/output matrix.

Public Input No. 78-NFPA 72-2022 [Section No. 7.5.4]

7.5.4 ~~–~~

~~For~~

N ew Emergency Communications Systems Documentation.

7.5.4.1 An owner's manual shall be provided for new emergency communications systems

~~, an owner's manual shall be provided and shall~~

~~.~~

7.5.4.2 The owner's manual shall contain the following documentation:

(1) Detailed narrative description of the system inputs, evacuation signaling, ancillary functions, annunciation, intended sequence of operations, expansion capability, application considerations, and limitations

(2) Written sequence of operation for the system including an operational input/output matrix

(3) Operator instructions for basic system operations, including alarm acknowledgment, system reset, interpretation of system output (LEDs, CRT display, and printout), operation of manual evacuation signaling and ancillary function controls, and change of printer paper

(4) Detailed description of routine maintenance and testing as required and recommended and as would be provided under a maintenance contract, including testing and maintenance instructions for each type of device installed, which includes the following:

(5) Listing of the individual system components that require periodic testing and maintenance

(6) Step-by-step instructions detailing the requisite testing and maintenance procedures, and the intervals at which those procedures

~~shall~~

(a) are to be performed, for each type of device installed

(b) Schedule that correlates the testing and maintenance procedures that are required by this section

(7) Service directory, including a list of names and telephone numbers of those who provide service for the system

(8) Product data sheets for all system equipment

Additional Proposed Changes

File Name	Description	Approved
72_7.5.4_PI-78_proposed_text.docx	PI-78 list view since list view for 'c' is not showing properly in Terra View preview.	

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue.

Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text adds a new section with separate paragraphs for the multiple requirements. The task group also recommended editorial change in list item (b) from 'shall' to 'are to'.

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
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Submittal Date: Fri Jan 14 13:36:36 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5014-NFPA 72-2022
Statement: The Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text.

Public Input No. 346-NFPA 72-2022 [Section No. 7.5.5.2]

7.5.5.2*

A sequence of operations ~~in~~ in narrative form, a logic diagram, or an input/output matrix ~~or narrative form~~ shall be provided with the record drawings to reflect actual programming at the time of completion.

Statement of Problem and Substantiation for Public Input

Provide consistent language among paragraphs related to the sequence of operation and add logic diagram as a means to depict the sequence of operation.

In addition to a narrative or an input/output matrix, a logic diagram is also a valid method to document the sequence of operation of a system. Sections of the Code that currently refer to documenting the sequence of operation only refer to a narrative description and/or an input/output matrix. Approvers of system design documentation are sometimes hesitant to approve or will not approve a design without a narrative or an input /output matrix even when a logic diagram is part of the design and provides more concise information, because NFPA 72 doesn't include a logic diagram as means to show the sequence of operation.

A logic diagram depicts the sequence of operation in easy-to-understand graphics, by interconnection of symbols representing the design of the entire system, not only showing the output for various inputs, but also the inter-working relationship between hardware and software within the system. A typical logic diagram will include internal components such as monitor modules, control modules, control relays, program addresses and custom messages for system inputs required for actuation of evacuation signals and ancillary functions for the intended sequence of operation. A logic diagram is particularly useful for addressable systems where an enormous amount of information representing the sequence of operation is required in large buildings or complex systems, whereas an input/output matrix is often confusing to produce and read (so many dots) when the system is large or complex. (NFPA 72 Figure A.14.6.1.1, for example, shows duplicate entries for 1st floor detectors, no 2nd floor detectors, and duct detectors that actuate alarm signals).

Older model addressable systems that require panel upgrades (CPU) for maintenance issues will come with firmware versions that won't likely support the older model software revision. In fact the older software revision software may require out of date laptop computer software (i.e., windows 98) to read it. The software media required to be controlled by NFPA 72 in cases such as this could be useless. A good logic diagram in a design is capable of providing the programming information necessary to restore the original sequence of operation because all programmable hardware is shown on the drawing with custom messages and program addresses.

A logic diagram is also a useful tool to convey detailed programming information to the programmer to ensure that site-specific software is configured to meet the owner's intended sequence of operation. Some facilities for example may be directed to implement software design control processes (i.e., NQA-1, Quality Assurance Requirements for Nuclear Facility Applications) that identify and document software design requirements including the operating system, function, interfaces, performance criteria, and design inputs of a computer program, such as site-specific fire alarm programs that can be created or modified. These software design requirements can be met with a logic diagram whereas an input/output matrix lacks interconnection detail between hardware and software.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 315-NFPA 72-2022 [Section No. 7.2.1]	

Public Input No. 315-NFPA 72-2022 [Section No. 7.2.1]

Submitter Information Verification

Submitter Full Name: Herbert Hurst
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City:
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Submittal Date: Tue May 24 14:13:07 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: Logic diagrams can be excessively long and complex for some systems/buildings, and would be difficult for all parties involved in development, review, and approval to read. Current language does not prohibit a logic diagram in addition to narrative form or input/output matrix.

Public Input No. 79-NFPA 72-2022 [Section No. 7.5.6.2]

7.5.6.2*– Record of Completion Documentation.

7.5.6.2.1 The record of completion documentation shall be completed by the installing contractor and submitted to the authority having jurisdiction and the owner at the conclusion of the job.

7.5.6.2.2 The record of completion documentation shall be permitted to be part of the written statement required in 7.5.2 and part of the documents that support the requirements of 7.5.8 .

7.5.6.2.3 When more than one contractor has been responsible for the installation, each contractor shall complete the portions of the documentation for which that contractor has responsibility.

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text creates a new section and provides new paragraphs for each requirement.

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
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Submittal Date: Fri Jan 14 14:18:31 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5017-NFPA 72-2022
Statement: Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text.

Public Input No. 82-NFPA 72-2022 [Section No. 7.5.6.6.1]

7.5.6.6.1

All modifications made after the initial installation shall be recorded on a revised version of the original completion documents~~, which shall~~ .

7.5.6.6.2

The revised version of the original completion documents shall serve as a supplement to the original, unaltered completion documents.

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text creates a new section and provides new paragraphs for each requirement.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 83-NFPA 72-2022 [Section No. 7.5.6.6.2]	
Public Input No. 84-NFPA 72-2022 [Section No. 7.5.6.6.3]	
Public Input No. 85-NFPA 72-2022 [Section No. A.7.5.6.6.3]	

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
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Submittal Date: Sat Jan 15 19:52:37 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5020-NFPA 72-2022
Statement: Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text.

Public Input No. 83-NFPA 72-2022 [Section No. 7.5.6.6.2]

7.5.6.6.~~2~~ 3

The revised record of completion document shall include a revision date.

Statement of Problem and Substantiation for Public Input

This PI links with PI-82. If accepted/revised, this paragraph requires renumbering.
Substantiation from that PI: NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue.
Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text creates a new section and provides new paragraphs for each requirement.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 82-NFPA 72-2022 [Section No. 7.5.6.6.1]	renumbering

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
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Affiliation: Fire Suppression Systems Association (FSSA)
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City:
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Submittal Date: Sat Jan 15 20:06:33 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5020-NFPA 72-2022
Statement: Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text.

Public Input No. 84-NFPA 72-2022 [Section No. 7.5.6.6.3]

7.5.6.6.~~3~~ 4 *

Where the original or the latest overall system record of completion cannot be obtained, a new system record of completion shall be provided that documents the system configuration as discovered during the current project's scope of work.

Statement of Problem and Substantiation for Public Input

This PI links with PI-82. If accepted/revised, this paragraph and associated annex will require renumbering.
Substantiation from PI-82: NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue.
Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text creates a new section and provides new paragraphs for each requirement.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 82-NFPA 72-2022 [Section No. 7.5.6.6.1]	renumber

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
Organization: Fike Corporation
Affiliation: Fire Suppression Systems Association (FSSA)
Street Address:
City:
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Zip:
Submittal Date: Sat Jan 15 20:08:22 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5020-NFPA 72-2022
Statement: Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text.

Public Input No. 86-NFPA 72-2022 [Section No. 7.5.6.7.2]

7.5.6.7.2

If filed electronically, the record of completion document shall be ~~accessible~~ both:

(1) Accessible with standard software and ~~shall be backed up.~~

(2) Backed up

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text utilized listed items in accordance with MOS section 3.3.1 Listed Items.

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
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Street Address:
City:
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Zip:
Submittal Date: Sat Jan 15 20:18:38 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5022-NFPA 72-2022
Statement: Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text.

Public Input No. 513-NFPA 72-2022 [Section No. 7.5.7.1 [Excluding any Sub-Sections]]

For software-based systems, a copy of the site-specific software shall be provided to ~~the system owner or owner's designated representative.~~ authorized personnel only

Statement of Problem and Substantiation for Public Input

The definition for Authorized Personnel in Section 3.3.24 indicates: "The property owner, or designated representative appointed or selected by the property owner,,," The term "property owner" as indicated in 3.3.24 could also cover the term "system owner" and it also includes the designated person by the owner. Therefore, it is proposed to use a defined term to be consistent with the Code definitions. The word "only" is proposed to be added to clarify that only authorized personnel should have access to the site-specific software and not any other personnel.

Submitter Information Verification

Submitter Full Name: Sagiv Weiss-Ishai
Organization: San Francisco Fire Department
Affiliation: SFFD
Street Address:
City:
State:
Zip:
Submittal Date: Mon May 30 19:38:34 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: Existing language is consistent with definition and is more user-friendly than the proposed language. The system owner could be different from the property owner.

Public Input No. 89-NFPA 72-2022 [New Section after 7.5.8.3]

7.5.8.4

Verification for new supervising stations, the verification shall comply with both of the following:

(1) Ascertain proper arrangement, transmission, and receipt of all signals required to be transmitted off-premises

(2) Installation to meet the requirements of 14.4.1 and 14.4.2

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text utilized listed items in accordance with MOS section 3.3.1 Listed Items. The original paragraph list items (1),(2), and (5) were kept in the first paragraph in PI-88. Since Paragraphs (3) and (4) contained multiple requirements, they were split out into their own sections with lists for them. This PI is the (3) with a list for the 2 requirements. PI-89 is for (4).

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 87-NFPA 72-2022 [Section No. 7.5.8.3]	Moving (3) of original text to a new section with list

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
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Street Address:
City:
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Zip:
Submittal Date: Thu Jan 20 15:21:57 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5027-NFPA 72-2022
Statement: Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text

Public Input No. 90-NFPA 72-2022 [New Section after 7.5.8.3]

7.5.8.5

Verification on existing supervising station systems that are extended, modified, or reconfigured shall comply with both of the following:

(1) Ascertain proper arrangement, transmission, and receipt of all signals required to be transmitted off-premises for the new work only

(2) Complete reacceptance testing in accordance with Chapter 14

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text utilized listed items in accordance with MOS section 3.3.1 Listed Items. The original paragraph list items (1),(2), and (5) were kept in the first paragraph in PI-88. Since Paragraphs (3) and (4) contained multiple requirements, they were split out into their own sections with lists for them. PI-89 is for (3). This PI is for (4) with a list for the 2 requirements.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 87-NFPA 72-2022 [Section No. 7.5.8.3]	directly related

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
Organization: Fike Corporation
Affiliation: Fire Suppression Systems Association (FSSA)
Street Address:
City:
State:
Zip:
Submittal Date: Thu Jan 20 15:53:44 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5027-NFPA 72-2022

Statement: Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text

Public Input No. 87-NFPA 72-2022 [Section No. 7.5.8.3]

7.5.8.3

Verification shall ensure that:

(1) All components and functions are installed and operate per the approved plans and sequence of operation.

(2) All required system documentation is complete and is archived on site.

(3) ~~For new supervising station systems, the verification shall also ascertain proper arrangement, transmission, and receipt of all signals required to be transmitted off-premises and shall meet the requirements of 14.4.1 and 14.4.2 .~~

(4) ~~For existing supervising station systems that are extended, modified, or reconfigured, the verification shall be required for the new work only, and reacceptance testing in accordance with Chapter 14 shall be acceptable.~~

(5) Written confirmation has been provided that any required corrective actions have been completed.

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text utilized listed items in accordance with MOS section 3.3.1 Listed Items. The original paragraph list items (1),(2), and (5) were kept in the first paragraph. Since Paragraphs (3) and (4) contained multiple requirements, they were split out into their own sections with lists for them. See PI-88 and PI-89 for those.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 89-NFPA 72-2022 [New Section after 7.5.8.3]	
Public Input No. 90-NFPA 72-2022 [New Section after 7.5.8.3]	

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
Organization: Fike Corporation
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Street Address:
City:
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Submittal Date: Sat Jan 15 20:24:45 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5027-NFPA 72-2022

Statement: Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text

Public Input No. 80-NFPA 72-2022 [Section No. 7.6.6]

7.6.6* Record of Inspection and Testing.

~~The record of all~~ All inspections, testing, and maintenance as required by 14.6.2.4 shall be documented using ~~either the record of~~ an inspection and testing ~~forms, Figure 7.8.2(g) through Figure 7.8.2(l) , or an alternative record that includes all the applicable information shown in Figure 7.8.2(g) through Figure 7.8.2(l) .~~ record that includes, at a minimum, the results of all applicable visual inspection and/or testing methods outlined in Chapter 14.

Statement of Problem and Substantiation for Public Input

This PI is related to PI-67 and PI-81 proposing the relocation of the Inspection and Testing forms to the Annex. Therefore, the link to 7.8.2 has been removed and the connection to the true source of the form is strengthened by making reference to Chapter 14 rather than to the Inspection and Testing forms that were never intended to be mandated. Related PIs indicate those proposed changes to 7.8.2 as well as the relocation of the Inspection and Testing forms to an annex note related to Section 7.6.6. See further substantiation in PI 81.

The committee rejected a related PC last cycle stating that the Code already states in the Annex that the I&T is a sample form. That statement is true. However, the presence of the I&T form in the body of the Code as a sample is not correct. As a sample form, it belongs in the Annex. Its presence in the body of the Code is contradictory to the Code's intent and to the Annex note that the committee referenced in their previous substantiation. It belongs in the Annex. The concern of the committee over not having the form in Chapter 7 is not valid since it's still related to Chapter 7 by way of the annex note linked to 7.6.6.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 81-NFPA 72-2022 [New Section after A.7.7.1.2]	
Public Input No. 67-NFPA 72-2022 [Section No. 7.8.2]	
Public Input No. 67-NFPA 72-2022 [Section No. 7.8.2]	
Public Input No. 68-NFPA 72-2022 [Section No. A.7.8.2(2)]	
Public Input No. 81-NFPA 72-2022 [New Section after A.7.7.1.2]	

Submitter Information Verification

Submitter Full Name: Joe Scibetta
Organization: BuildingReports
Street Address:
City:
State:
Zip:
Submittal Date: Fri Jan 14 16:40:58 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: The requirements for form content should remain in the body of the Code, and this is expressed through the provided figures in 7.8.2. However, 7.8.1.2 permits alternative form layouts to be used.

Public Input No. 92-NFPA 72-2022 [New Section after 7.7.1.2]

7.7.1.3
Archiving of records by any means shall be permitted if hard copies of the records can be provided promplty when requested.

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text in PI-91 removed the 2nd requirement. This PI adds a new paragraph for the 2nd requirement.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 91-NFPA 72-2022 [Section No. 7.7.1.2]	directly related
Public Input No. 93-NFPA 72-2022 [Section No. 7.7.1.3]	
Public Input No. 94-NFPA 72-2022 [Section No. 7.7.1.4]	
Public Input No. 95-NFPA 72-2022 [Section No. 7.7.1.5]	
Public Input No. 96-NFPA 72-2022 [Section No. 7.7.1.6]	

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
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Affiliation: Fire Suppression Systems Association (FSSA)
Street Address:
City:
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Zip:
Submittal Date: Thu Jan 20 16:02:15 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5033-NFPA 72-2022
Statement: Section 1.8.3 of the July 2004 edition of The Manual of Style for NFPA Technical Committee Documents, requires sections containing multiple requirements to be subdivided into subsections, which shall be further subdivided into paragraphs of text.

Public Input No. 91-NFPA 72-2022 [Section No. 7.7.1.2]

7.7.1.2*

The records shall be available for examination and, if required, reported to the authority having jurisdiction. ~~Archiving of records by any means shall be permitted if hard copies of the records can be provided promptly when requested.~~

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text adds a new paragraph for the 2nd requirement.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 92-NFPA 72-2022 [New Section after 7.7.1.2]	

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
Organization: Fike Corporation
Affiliation: Fire Suppression Systems Association (FSSA)
Street Address:
City:
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Zip:
Submittal Date: Thu Jan 20 15:59:13 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5033-NFPA 72-2022
Statement: Section 1.8.3 of the July 2004 edition of The Manual of Style for NFPA Technical Committee Documents, requires sections containing multiple requirements to be subdivided into subsections, which shall be further subdivided into paragraphs of text.

Public Input No. 93-NFPA 72-2022 [Section No. 7.7.1.3]

7.7.1.~~3~~ 4

If off-premises monitoring is provided, records of all signals, tests, and operations recorded at the supervising station, including the public emergency alarm reporting system, shall be maintained by the off-premise monitoring service provider for not less than 1 year unless more stringent requirements are required elsewhere in this Code.

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text adds a new paragraph for the 2nd requirement. Due to the added paragraph, this paragraph will required renumbering.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 92-NFPA 72-2022 [New Section after 7.7.1.2]	directly related

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
Organization: Fike Corporation
Affiliation: Fire Suppression Systems Association (FSSA)
Street Address:
City:
State:
Zip:
Submittal Date: Thu Jan 20 16:06:15 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5033-NFPA 72-2022
Statement: Section 1.8.3 of the July 2004 edition of The Manual of Style for NFPA Technical Committee Documents, requires sections containing multiple requirements to be subdivided into subsections, which shall be further subdivided into paragraphs of text.

Public Input No. 94-NFPA 72-2022 [Section No. 7.7.1.4]

7.7.1.4 5

Required documents regarding system design and function shall be maintained for the life of the system.

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text adds a new paragraph for the 2nd requirement. Due to the added paragraph, this paragraph requires renumbering

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 92-NFPA 72-2022 [New Section after 7.7.1.2]	Directly related

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
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Street Address:
City:
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Zip:
Submittal Date: Thu Jan 20 16:08:46 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5033-NFPA 72-2022
Statement: Section 1.8.3 of the July 2004 edition of The Manual of Style for NFPA Technical Committee Documents, requires sections containing multiple requirements to be subdivided into subsections, which shall be further subdivided into paragraphs of text.

Public Input No. 95-NFPA 72-2022 [Section No. 7.7.1.5]

7.7.1.~~5~~ – 6

The emergency communications system and fire alarm system as-built plans and other related documentation shall be permitted to be maintained together, including the appearance of both systems on the same drawings.

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text adds a new paragraph for the 2nd requirement, which requires renumbering of this section.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 92-NFPA 72-2022 [New Section after 7.7.1.2]	Directly related.

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
Organization: Fike Corporation
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Zip:
Submittal Date: Thu Jan 20 16:23:13 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5033-NFPA 72-2022
Statement: Section 1.8.3 of the July 2004 edition of The Manual of Style for NFPA Technical Committee Documents, requires sections containing multiple requirements to be subdivided into subsections, which shall be further subdivided into paragraphs of text.

Public Input No. 96-NFPA 72-2022 [Section No. 7.7.1.6]

~~7.7.1.6~~ 7

Revisions and alterations to systems shall be recorded and records maintained with the original system design documents.

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text adds a new paragraph for the 2nd requirement, which requires this paragraph to be renumbered.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 92-NFPA 72-2022 [New Section after 7.7.1.2]	directly related

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
Organization: Fike Corporation
Affiliation: Fire Suppression Systems Association (FSSA)
Street Address:
City:
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Zip:
Submittal Date: Thu Jan 20 16:37:56 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5033-NFPA 72-2022
Statement: Section 1.8.3 of the July 2004 edition of The Manual of Style for NFPA Technical Committee Documents, requires sections containing multiple requirements to be subdivided into subsections, which shall be further subdivided into paragraphs of text.

Public Input No. 97-NFPA 72-2022 [Section No. 7.7.2.3]

7.7.2.3*

All record documentation shall ~~be stored~~ comply with the following:

(1) Stored in the documentation cabinet~~. No record documentation shall be stored~~

(2) Not stored in the control unit~~.~~

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text utilized listed items in accordance with MOS section 3.3.1 Listed Items.

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
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Street Address:
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Submittal Date: Thu Jan 20 17:51:32 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5035-NFPA 72-2022

Statement: Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text.

Public Input No. 67-NFPA 72-2022 [Section No. 7.8.2]

7.8.2 Forms for ~~Documentation~~ Record of Completion/Installation .

~~Forms for documentation shall~~ As applicable, forms for the Record of Completion or the installation of household fire alarm systems or single- or multiple-station alarms shall be as follows:

(1) * Unless otherwise permitted or required in 7.5.6 or 7.8.1.2, Figure 7.8.2(a) through Figure 7.8.2(f) shall be used to document the record of completion and inspection.

(2)~~*~~ ~~Unless otherwise permitted or required in 7.6.6 or 7.8.1.2, Figure 7.8.2(g) through Figure 7.8.2(l) shall be used to document the record of inspection and testing.~~

(3) Where a form is required by the AHJ to document the installation and inspection of a household fire alarm system or single- or multiple-station alarms, Figure 7.8.2(~~m~~

(4) g) shall be permitted to be used to document the record of completion and inspection.

Figure 7.8.2(a) System Record of Completion.

SYSTEM RECORD OF COMPLETION

This form is to be completed by the system installation contractor at the time of system acceptance and approval.
It shall be permitted to modify this form as needed to provide a more complete and/or clear record.
Insert N/A in all unused lines.
Attach additional sheets, data, or calculations as necessary to provide a complete record.

Form Completion Date: _____ Supplemental Pages Attached: _____

1. PROPERTY INFORMATION

Name of property: _____
Address: _____
Description of property: _____
Name of property representative: _____
Address: _____
Phone: _____ Fax: _____ E-mail: _____

2. INSTALLATION, SERVICE, TESTING, AND MONITORING INFORMATION

Installation contractor: _____
Address: _____
Phone: _____ Fax: _____ E-mail: _____
Service organization: _____
Address: _____
Phone: _____ Fax: _____ E-mail: _____
Testing organization: _____
Address: _____
Phone: _____ Fax: _____ E-mail: _____
Effective date for test and inspection contract: _____
Monitoring organization: _____
Address: _____
Phone: _____ Fax: _____ E-mail: _____
Account number: _____ Phone line 1: _____ Phone line 2: _____
Means of transmission: _____
Entity to which alarms are retransmitted: _____ Phone: _____

3. DOCUMENTATION

On-site location of the required record documents and site-specific software: _____

4. DESCRIPTION OF SYSTEM OR SERVICE

This is a: ❑ New system ❑ Modification to existing system Permit number: _____
NFPA 72 edition: _____

4.1 Control Unit

Manufacturer: _____ Model number: _____

4.2 Software and Firmware

Firmware revision number: _____

4.3 Alarm Verification

❑ This system does not incorporate alarm verification.
Number of devices subject to alarm verification: _____ Alarm verification set for _____ seconds

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SYSTEM RECORD OF COMPLETION *(continued)*

5. SYSTEM POWER

5.1 Control Unit

5.1.1 Primary Power

Input voltage of control panel: _____ Control panel amps: _____
Overcurrent protection: Type: _____ Amps: _____
Branch circuit disconnecting means location: _____ Number: _____

5.1.2 Secondary Power

Type of secondary power: _____
Location, if remote from the plant: _____
Calculated capacity of secondary power to drive the system:
In standby mode (hours): _____ In alarm mode (minutes): _____

5.2 Control Unit

❑ This system does not have power extender panels.
❑ Power extender panels are listed on supplementary sheet A.

6. CIRCUITS AND PATHWAYS

Pathway Type	Dual Pathway	Separate Pathway	Class	Survivability Level
Signaling Line				
Device Power				
Initiating Device				
Notification Appliance				
Other (specify):				

7. REMOTE ANNUNCIATORS

Type	Location

8. INITIATING DEVICES

Type	Quantity	Addressable or Conventional	Alarm or Supervisory	Sensing Technology
Manual Pull Stations				
Smoke Detectors				
Duct Smoke Detectors				
Heat Detectors				
Gas Detectors				
Carbon Monoxide Detectors				
Waterflow Switches				
Tamper Switches				

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SYSTEM RECORD OF COMPLETION *(continued)*

9. NOTIFICATION APPLIANCES

Type	Quantity	Description	Connected to a Notification Appliance Circuit (NAC)	Connected to a Signaling Line Circuit (SLC)
Audible:				
Visual				
Combination Audible and Visual				

10. SYSTEM CONTROL FUNCTIONS

Type	Quantity
Hold-Open Door Releasing Devices	
HVAC Shutdown	
Fire/Smoke Dampers	
Door Unlocking	
Elevator Recall	
Elevator Shunt Trip	

11. INTERCONNECTED SYSTEMS

❑ This system does not have interconnected systems.

❑ Interconnected systems are listed on supplementary sheet.

12. CERTIFICATION AND APPROVALS

12.1 System Installation Contractor

This system as specified herein has been installed according to all NFPA standards cited herein.

Signed: Printed name: Date:

Organization: Title: Phone:

12.2 System Operational Test

This system as specified herein has tested according to all NFPA standards cited herein.

Signed: Printed name: Date:

Organization: Title: Phone:

12.3 Acceptance Test

Date and time of acceptance test:

Installing contractor representative:

Testing contractor representative:

Property representative:

AHJ representative:

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Figure 7.8.2(b) Emergency Communications System Supplementary Record of Completion.

EMERGENCY COMMUNICATIONS SYSTEMS
SUPPLEMENTARY RECORD OF COMPLETION

This form is a supplement to the System Record of Completion. It includes systems and components specific to emergency communications systems.
This form is to be completed by the system installation contractor at the time of system acceptance and approval. It shall be permitted to modify this form as needed to provide a more complete and/or user friendly record. Insert N/A in all unused lines.

Form Completion Date: Number of Supplemental Pages Attached:

1. PROPERTY INFORMATION

Name of property:

Address:

2. DESCRIPTION OF SYSTEM OR SERVICE

❑ Fire alarm with in-building fire emergency voice alarm communications system (EVACS)

❑ Mass notification system

❑ Combination system, with the following components:

❑ Fire alarm ❑ EVACS ❑ MNS ❑ Two-way, in-building, emergency communications system

❑ Other (specify):

NFPA 72 edition: Additional description of system(s):

2.1 In-Building Fire Emergency Voice Alarm Communications System

Manufacturer: Model number:

Number of single-voice alarm channels: Number of multiple voice alarm channels:

Number of loudspeakers: Number of loudspeaker circuits:

Location of amplification and sound processing equipment:

Location of paging microphone stations:

Location 1:

Location 2:

Location 3:

2.2 Mass Notification System

2.2.1 System Type:

❑ In-building MNS/combination

❑ In-building MNS ❑ Wide-area MNS ❑ Distributed recipient MNS

❑ Other (specify):

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EMERGENCY COMMUNICATIONS SYSTEMS
SUPPLEMENTARY RECORD OF COMPLETION *(continued)*

2. DESCRIPTION OF SYSTEM OR SERVICE *(continued)*

2.2.2 System Features:

❑ Combination fire alarm/MNS ❑ MNS autonomous control unit ❑ Wide-area MNS to regional network alerting interface
❑ Local operating console (LOC) ❑ Distributed recipient MNS (DRMNS) ❑ Wide-area MNS to DRMNS interface
❑ Wide-area MNS to high power loudspeaker array (HPLA) interface ❑ In-building MNS to wide-area MNS interface
❑ Other (specify):

2.2.3 MNS Local Operating Consoles

Location 1:
Location 2:
Location 3:

2.2.4 High Power Loudspeaker Arrays

Number of HPLA loudspeaker initiation zones:
Location 1:
Location 2:
Location 3:

2.2.5 Mass Notification Devices

Combination fire alarm/MNS visual devices: MNS-only visual devices:
Textual sign: Other (describe):
Supervision class:

2.2.6 Special Hazard Notification

❑ This system does not have special suppression prodischarge notification.
❑ MNS systems DO NOT override notification appliances required to provide special suppression prodischarge notification.

3. TWO-WAY EMERGENCY COMMUNICATIONS SYSTEMS

3.1 Telephone System

Number of telephone jacks installed: Number of warden stations installed:
Number of telephone handsets stored on site:
Type of telephone system installed: ❑ Electrically powered ❑ Sound powered

3.2 Area of Refuge Emergency Communications Systems

Number of stations: Location of central control point:
Days and hours when central control point is attended:
Location of alternate control point:
Days and hours when alternate control point is attended:

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EMERGENCY COMMUNICATIONS SYSTEMS
SUPPLEMENTARY RECORD OF COMPLETION *(continued)*

3. TWO-WAY EMERGENCY COMMUNICATIONS SYSTEMS *(continued)*

3.3 Elevator Emergency Communications Systems

Number of elevators with stations: Location of central control point:
Days and hours when central control point is attended:
Location of alternate control point:
Days and hours when alternate control point is attended:

3.4 Other Two-Way Communications System

Describe:

4. CONTROL FUNCTIONS

This system activates the following control functions specific to emergency communications systems:

Type	Quantity
Mass Notification Override of Alarm Signaling Systems or Appliances	

See Main System *Record of Completion* for additional information, certifications, and approvals.

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Figure 7.8.2(c) Power Systems Supplementary Record of Completion.

POWER SYSTEMS
SUPPLEMENTARY RECORD OF COMPLETION

This form is a supplement to the System Record of Completion. It includes systems and components specific to power systems that incorporate generators, SEPSS systems, remote battery systems, or other complex power systems. This form is to be completed by the system installation contractor at the time of system acceptance and approval. It shall be permitted to modify this form as needed to provide a more complete and/or clear record. Insert N/A in all unused lines.

Form Completion Date: _____ Number of Supplemental Pages Attached: _____

1. PROPERTY INFORMATION

Name of property: _____

Address: _____

2. SYSTEM POWER

2.1 Control Unit

2.1.1 Primary Power

Input voltage of control panel: _____ Control panel amps: _____

Overcurrent protection: Type: _____ Amps: _____

Location (of primary supply panelboard): _____

Disconnecting means location: _____

2.1.2 Engine-Driven Generator

Location of generator: _____

Location of fuel storage: _____ Type of fuel: _____

2.1.3 Stored-Energy Emergency Power Supply Systems

Equipment powered by SEPSS system: _____

Location of SEPSS system: _____

Calculated capacity of SEPSS batteries to drive the system components connected to it:

In standby mode (hours): _____ In alarm mode (minutes): _____

2.1.4 Batteries

Location: _____ Type: _____ Nominal voltage: _____ Ampere-hour rating: _____

Calculated capacity of batteries to drive the system:

In standby mode (hours): _____ In alarm mode (minutes): _____

2.2 In-Building Fire Emergency Voice Alarm Communications System or Mass Notification System

2.2.1 Primary Power

Input voltage of EVACS or MNS panel: _____ EVACS or MNS panel amps: _____

Overcurrent protection: Type: _____ Amps: _____

Location (of primary supply panelboard): _____

Disconnecting means location: _____

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POWER SYSTEMS
SUPPLEMENTARY RECORD OF COMPLETION *(continued)*

2. SYSTEM POWER *(continued)*

2.2.2 Engine-Driven Generator

Location of generator: _____

Location of fuel storage: _____ Type of fuel: _____

2.2.3 Stored-Energy Emergency Power Supply Systems

Equipment powered by SEPSS system: _____

Location of SEPSS system: _____

Calculated capacity of SEPSS batteries to drive the system components connected to it:

In standby mode (hours): _____ In alarm mode (minutes): _____

2.2.4 Batteries

Location: _____ Type: _____ Nominal voltage: _____ Ampere-hour rating: _____

Calculated capacity of batteries to drive the system:

In standby mode (hours): _____ In alarm mode (minutes): _____

2.3 Notification Appliance Power Extender Panels

☐ This system does not have power extender panels.

2.3.1 Primary Power

Input voltage of power extender panel(s): _____ Power extender panel amps: _____

Overcurrent protection: Type: _____ Amps: _____

Location (of primary supply panelboard): _____

Disconnecting means location: _____

2.3.2 Engine Driven Generator

Location of generator: _____

Location of fuel storage: _____ Type of fuel: _____

2.3.3 Stored-Energy Emergency Power Supply Systems

Equipment powered by SEPSS system: _____

Location of SEPSS system: _____

Calculated capacity of SEPSS batteries to drive the system components connected to it:

In standby mode (hours): _____ In alarm mode (minutes): _____

2.3.4 Batteries

Location: _____ Type: _____ Nominal voltage: _____ Ampere-hour rating: _____

Calculated capacity of batteries to drive the system:

In standby mode (hours): _____ In alarm mode (minutes): _____

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POWER SYSTEMS
SUPPLEMENTARY RECORD OF COMPLETION *(continued)*

2. SYSTEM POWER *(continued)*

2.4 Supervising Station Transmission Equipment

❑ This system does not use transmission equipment within the building powered by any other source than the alarm system control unit.

2.4.1 Primary Power

Input voltage of shared transmission equipment: _____

Shared transmission equipment panel amps: _____

Overcurrent protection: Type: _____ Amps: _____

Location of primary supply panelboard: _____

Disconnecting means location: _____

2.4.2 Engine Driven Generator

Location of generator: _____

Location of fuel storage: _____ Type of fuel: _____

2.4.3 Energy Storage Systems

Equipment powered by ESS system: _____

Calculated capacity of ESS batteries to drive the system components connected to it:

In standby mode (hours): _____ In alarm mode (minutes): _____

2.4.4 Batteries

Location: _____ Type: _____ Nominal voltage: _____ Amp/hour rating: _____

Calculated capacity of batteries to drive the system:

In standby mode (hours): _____ In alarm mode (minutes): _____

See Main System Record of Completion for additional information, certifications, and approvals.

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Figure 7.8.2(d) Notification Appliance Power Panel Supplementary Record of Completion.

NOTIFICATION APPLIANCE POWER PANEL
SUPPLEMENTARY RECORD OF COMPLETION

This form is a supplement to the System Record of Completion. It includes a list of types and locations of notification appliance power extender panels.
This form is to be completed by the system installing contractor at the time of system acceptance and approval.
It shall be permitted to modify this form as needed to provide a more complete and/or clear record.
Insert N/A in all unused lines.

Form Completion Date: _____ Number of Supplemental Pages Attached: _____

1. PROPERTY INFORMATION

Name of property: _____

Address: _____

2. NOTIFICATION APPLIANCE POWER EXTENDER PANELS

Make and Model	Location	Area Served	Power Source

See Main System Record of Completion for additional information, certifications, and approvals.

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Figure 7.8.2(e) Interconnected Systems Supplementary Record of Completion.

NOTIFICATION APPLIANCE POWER PANEL
SUPPLEMENTARY RECORD OF COMPLETION

This form is a supplement to the System Record of Completion. It includes a list of types and locations of notification appliance power extender panels.
This form is to be completed by the system installation contractor at the time of system acceptance and approval.
It shall be permitted to modify this form as needed to provide a more complete and/or clear record.
Insert N/A in all unused lines.

Form Completion Date: _____ Number of Supplemental Pages Attached: _____

1. PROPERTY INFORMATION

Name of property: _____

Address: _____

2. NOTIFICATION APPLIANCE POWER EXTENDER PANELS

Make and Model	Location	Area Served	Power Source

See Main System Record of Completion for additional information, certifications, and approvals.

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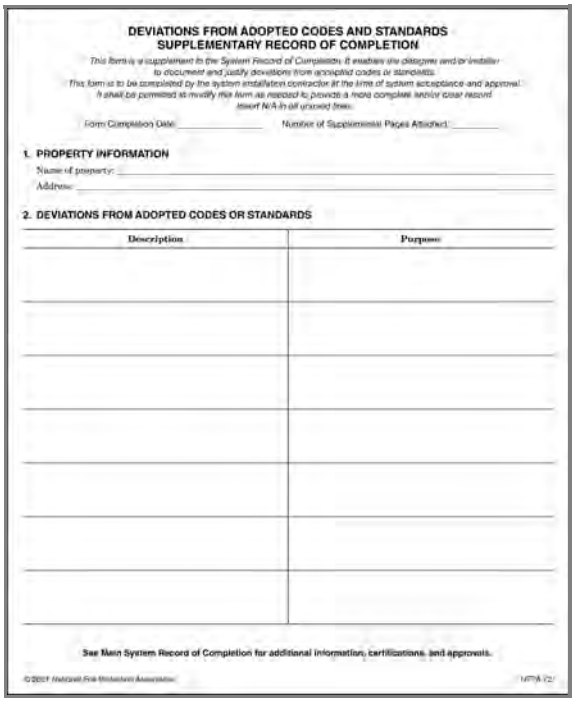
Figure 7.8.2(f) Deviations from Adopted Codes and Standards Supplementary Record of Completion.



DEVIATIONS FROM ADOPTED CODES AND STANDARDS
SUPPLEMENTARY RECORD OF COMPLETION

This form is a supplement to the System Record of Completion. It enables the designer and/or installer to document and justify deviations from accepted codes or standards.
This form is to be completed by the system installation contractor at the time of system acceptance and approval.
It shall be permitted to modify this form as needed to provide a more complete and/or clear record.
Insert N/A in all unused lines.

Form Completion Date: _____ Number of Supplemental Pages Attached: _____

1. PROPERTY INFORMATION

Name of property: _____

Address: _____

2. DEVIATIONS FROM ADOPTED CODES OR STANDARDS

Description	Purpose

See Main System Record of Completion for additional information, certifications, and approvals.

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Figure 7.8.2(g) ~~System Record of Inspection and Testing.~~

SYSTEM RECORD OF INSPECTION AND TESTING

This form is to be completed by the system inspection and testing contractor at the time of a system test. It shall be permitted to modify this form as needed to provide a more complete and/or clear record. Insert N/A in all unused lines.

Attach additional sheets, data, or calculations as necessary to provide a complete record.

Inspection/Test Start Date/Time: _____ Inspection/Test Completion Date/Time: _____

Supplemental Form(s) Attached _____ (yes/no)

1. PROPERTY INFORMATION

Name of property: _____

Address: _____

Description of property: _____

Name of property representative: _____

Address: _____

Phone: _____ Fax: _____ E-mail: _____

2. TESTING AND MONITORING INFORMATION

Testing organization: _____

Address: _____

Phone: _____ Fax: _____ E-mail: _____

Monitoring organization: _____

Address: _____

Phone: _____ Fax: _____ E-mail: _____

Account number: _____ Phone line 1: _____ Phone line 2: _____

Means of transmission: _____

Entity to which alarms are retransmitted: _____ Phone: _____

3. DOCUMENTATION

Onsite location of the required record documents and site-specific software: _____

4. DESCRIPTION OF SYSTEM OR SERVICE

4.1 Control Unit

Manufacturer: _____ Model number: _____

4.2 Software Firmware

Firmware revision number: _____

4.3 System Power

4.3.1 Primary (Main) Power

Nominal voltage: _____ Amps: _____ Location: _____

Overcurrent protection type: _____ Amps: _____ Disconnecting means location: _____

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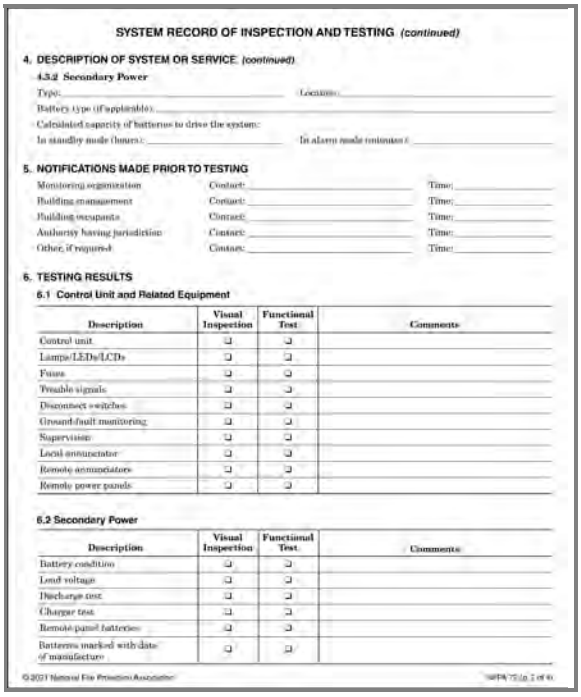

SYSTEM RECORD OF INSPECTION AND TESTING *(continued)*

4. DESCRIPTION OF SYSTEM OR SERVICE *(continued)*

4.3.2 Secondary Power

Type: _____ Location: _____

Battery type (if applicable): _____

Calculated capacity of batteries to drive the system:

In standby mode (hours): _____ In alarm mode (minutes): _____

5. NOTIFICATIONS MADE PRIOR TO TESTING

Monitoring organization	Contact: _____	Time: _____
Building management	Contact: _____	Time: _____
Building occupants	Contact: _____	Time: _____
Authority having jurisdiction	Contact: _____	Time: _____
Other, if required	Contact: _____	Time: _____

6. TESTING RESULTS

6.1 Control Unit and Related Equipment

Description	Visual Inspection	Functional Test	Comments
Control unit	❑	❑	
Lamps/LEDs/LCDs	❑	❑	
Fuses	❑	❑	
Trouble signals	❑	❑	
Disconnect switches	❑	❑	
Ground-fault monitoring	❑	❑	
Supervision	❑	❑	
Local annunciator	❑	❑	
Remote annunciators	❑	❑	
Remote power panels	❑	❑	

6.2 Secondary Power

Description	Visual Inspection	Functional Test	Comments
Battery condition	❑	❑	
Load voltage	❑	❑	
Discharge test	❑	❑	
Charger test	❑	❑	
Remote panel batteries	❑	❑	
Batteries marked with date of manufacture	❑	❑	

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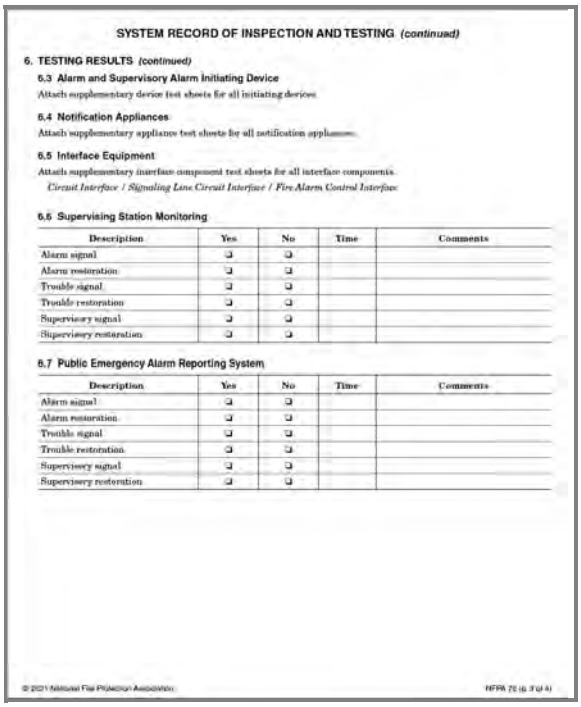


SYSTEM RECORD OF INSPECTION AND TESTING *(continued)*

6. TESTING RESULTS *(continued)*

6.3 Alarm and Supervisory Alarm Initiating Device

Attach supplementary device test sheets for all initiating devices.

6.4 Notification Appliances

Attach supplementary appliance test sheets for all notification appliances.

6.5 Interface Equipment

Attach supplementary interface component test sheets for all interface components.

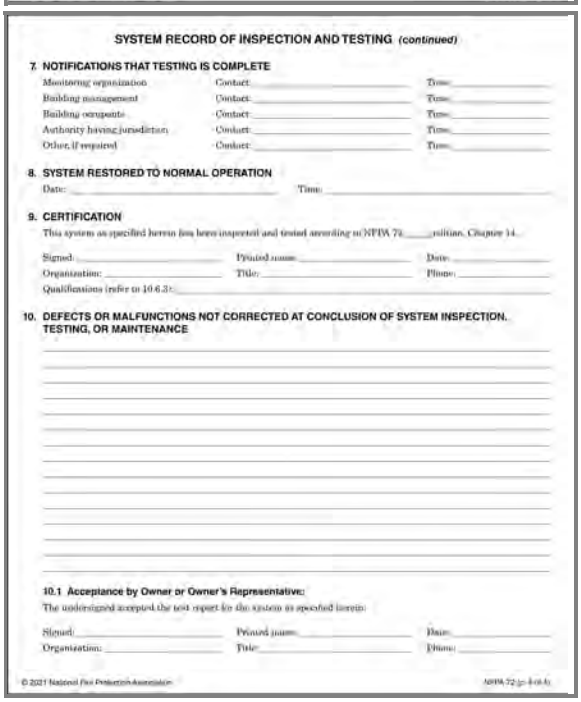
Circuit Interface / Signaling Line Circuit Interface / Fire Alarm Control Interface

6.6 Supervising Station Monitoring

Description	Yes	No	Time	Comments
Alarm signal	❑	❑		
Alarm restoration	❑	❑		
Trouble signal	❑	❑		
Trouble restoration	❑	❑		
Supervisory signal	❑	❑		
Supervisory restoration	❑	❑		

6.7 Public Emergency Alarm Reporting System

Description	Yes	No	Time	Comments
Alarm signal	❑	❑		
Alarm restoration	❑	❑		
Trouble signal	❑	❑		
Trouble restoration	❑	❑		
Supervisory signal	❑	❑		
Supervisory restoration	❑	❑		



SYSTEM RECORD OF INSPECTION AND TESTING *(continued)*

7. NOTIFICATIONS THAT TESTING IS COMPLETE

Monitoring organization Contact: Time:
Building management Contact: Time:
Building occupants Contact: Time:
Authority having jurisdiction Contact: Time:
Other, if required Contact: Time:

8. SYSTEM RESTORED TO NORMAL OPERATION

Date: Time:

9. CERTIFICATION

This system as specified herein has been inspected and tested according to NFPA 72 ____ edition, Chapter 14.

Signed: Printed name: Date:
Organization: Title: Phone:
Qualifications (refer to 10.6.3): _____

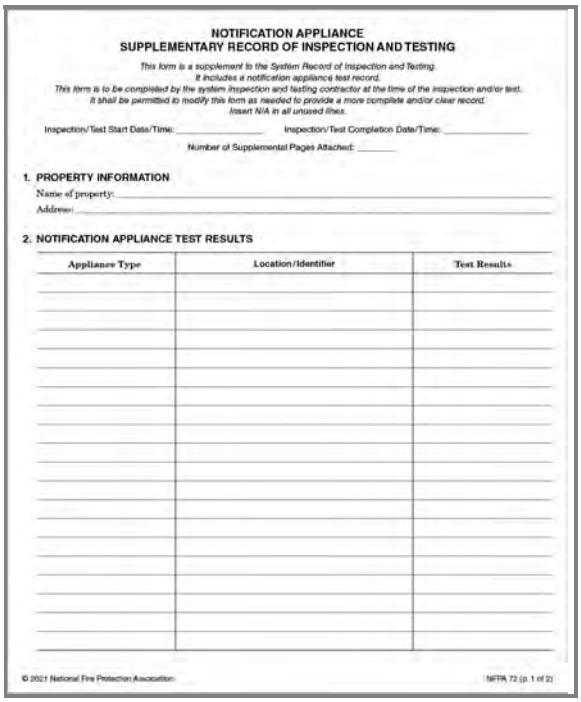
10. DEFECTS OR MALFUNCTIONS NOT CORRECTED AT CONCLUSION OF SYSTEM INSPECTION, TESTING, OR MAINTENANCE

10.1 Acceptance by Owner or Owner's Representative:

The undersigned accepted the test report for the system as specified herein:

Signed: Printed name: Date:
Organization: Title: Phone:

~~Figure 7.8.2(h) Notification Appliance Supplementary Record of Inspection and Testing.~~



NOTIFICATION APPLIANCE
SUPPLEMENTARY RECORD OF INSPECTION AND TESTING

This form is a supplement to the System Record of Inspection and Testing.
It includes a notification appliance test record.
This form is to be completed by the system inspection and testing contractor at the time of the inspection and/or test.
It shall be permitted to modify this form as needed to provide a more complete and/or clear record.
Insert N/A in all unused lines.

Inspection/Test Start Date/Time: _____ Inspection/Test Completion Date/Time: _____

Number of Supplemental Pages Attached: _____

1. PROPERTY INFORMATION

Name of property: _____

Address: _____

2. NOTIFICATION APPLIANCE TEST RESULTS

Appliance Type	Location/Identifier	Test Results

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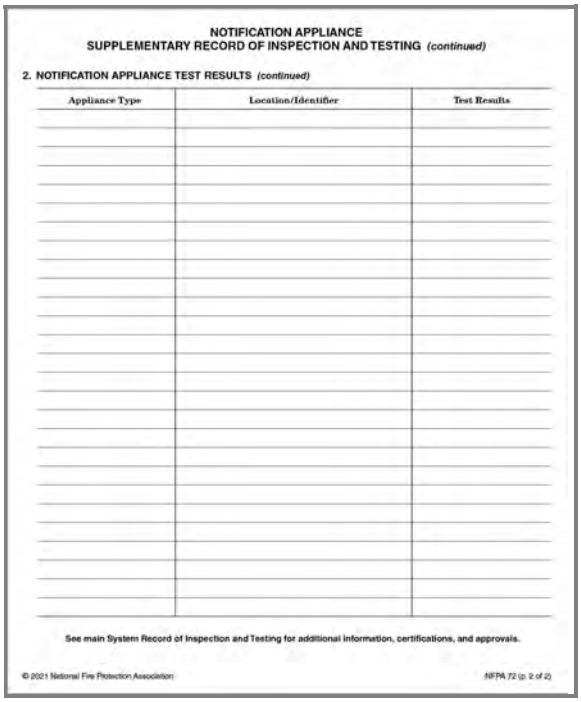

NOTIFICATION APPLIANCE
SUPPLEMENTARY RECORD OF INSPECTION AND TESTING *(continued)*

2. NOTIFICATION APPLIANCE TEST RESULTS *(continued)*

Appliance Type	Location/Identifier	Test Results

See main System Record of Inspection and Testing for additional information, certifications, and approvals.

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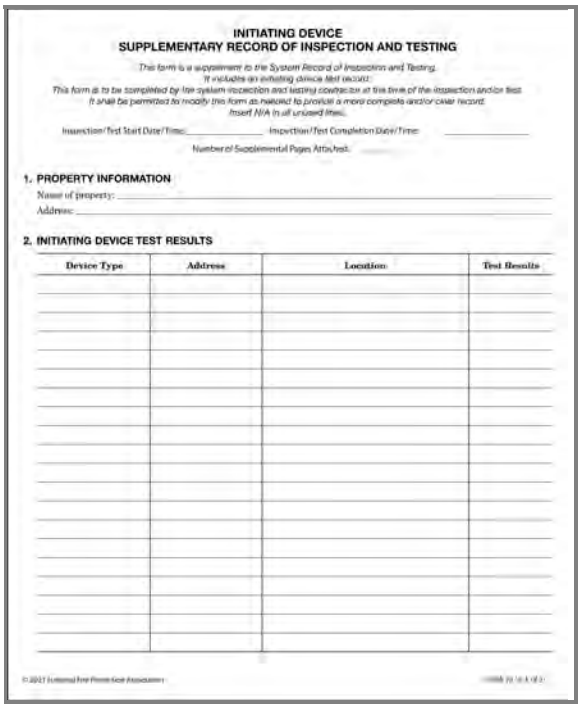
~~Figure 7.8.2(i) Initiating Device Supplementary Record of Inspection and Testing.~~



INITIATING DEVICE
SUPPLEMENTARY RECORD OF INSPECTION AND TESTING

This form is a supplement to the System Record of Inspection and Testing.
It includes an initiating device test record.
This form is to be completed by the system inspection and testing contractor at the time of the inspection and/or test.
It shall be permitted to modify this form as needed to provide a more complete and/or clear record.
Insert N/A in all unused lines.

Inspection/Test Start Date/Time: _____ Inspection/Test Completion Date/Time: _____

Number of Supplemental Pages Attached: _____

1. PROPERTY INFORMATION

Name of property: _____

Address: _____

2. INITIATING DEVICE TEST RESULTS

Device Type	Address	Location	Test Results

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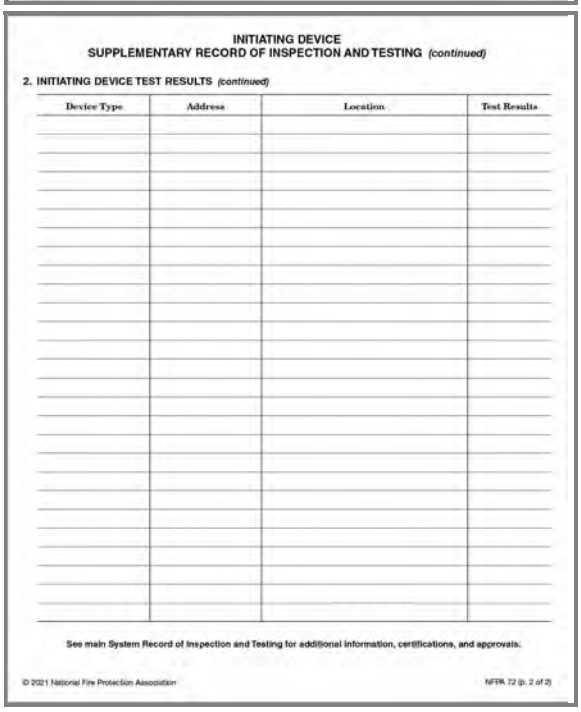

INITIATING DEVICE
SUPPLEMENTARY RECORD OF INSPECTION AND TESTING *(continued)*

2. INITIATING DEVICE TEST RESULTS *(continued)*

Device Type	Address	Location	Test Results

See main System Record of Inspection and Testing for additional information, certifications, and approvals.

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~~Figure 7.8.2(j) Mass Notification System Supplementary Record of Inspection and Testing.~~

MASS NOTIFICATION SYSTEM
SUPPLEMENTARY RECORD OF INSPECTION AND TESTING

This form is a supplement to the System Record of Inspection and Testing.
It includes a mass notification system test record.
This form is to be completed by the system inspection and testing contractor at the time of the inspection and/or test.
It shall be permitted to modify this form as needed to provide a more complete and/or clear record.
Insert N/A in all unused lines.

Inspection/Test Start Date/Time: _____ Inspection/Test Completion Date/Time: _____

Number of Supplemental Pages Attached: _____

1. PROPERTY INFORMATION

Name of property: _____

Address: _____

2. MASS NOTIFICATION SYSTEM

2.1 System Type

❑ In-building MNS—combination

❑ In-building MNS—stand alone ❑ Wide-area MNS ❑ Distributed recipient MNS

❑ Other (specify): _____

2.2 System Features

❑ Combination fire alarm/MNS ❑ MNS ACU only ❑ Wide-area MNS to regional national alerting interface

❑ Local operating console (LOC) ❑ Direct recipient MNS (DRMNS) ❑ Wide-area MNS to DRMNS interface

❑ Wide-area MNS to high-power loudspeaker array (HPLA) interface ❑ In-building MNS to wide-area MNS interface

❑ Other (specify): _____

3. IN-BUILDING MASS NOTIFICATION SYSTEM

3.1 Primary Power

Input voltage of MNS panel: _____ MNS panel amps: _____

3.2 Engine-Driven Generator ❑ This system does not have a generator.

Location of generator: _____

Location of fuel storage: _____ Type of fuel: _____

3.3 Stored-Energy Emergency Power Supply Systems ❑ This system does not have an SEPSS

Equipment powered by an SEPSS: _____

Location of SEPSS: _____

Calculated capacity of SEPSS batteries to drive the system components connected to it:

In standby mode (hours): _____ In alarm mode (minutes): _____

3.4 Batteries

Location: _____ Type: _____ Nominal voltage: _____ Amp/hour rating: _____

Calculated capacity of batteries to drive the system:

In standby mode (hours): _____ In alarm mode (minutes): _____

❑ Batteries are marked with date of manufacture.

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MASS NOTIFICATION SYSTEM
SUPPLEMENTARY RECORD OF INSPECTION AND TESTING *(continued)*

4. MASS NOTIFICATION EQUIPMENT TEST RESULTS

Description	Visual Inspection	Functional Test	Comments
Functional test			
Reset/power down test			
Fuses			
Primary power supply			
SEPSS power test			
Tonable signals			
Disconnect switches			
Ground-fault monitoring			
CCU security mechanism			
Prerecorded message content			
Prerecorded message activation			
Software backup performed			
Test backup software			
Fire alarm to MNS interface			
MNS to fire alarm interface			
In-building MNS to wide-area MNS			
MNS to direct recipient MNS			
Sound pressure levels Occupied ❑ Yes ❑ No Ambient dBA: _____ Alarm dBA: _____ (attach supplementary notification appliance forms with locations, values, and weather conditions)			
System intelligibility Test method: _____ Score: _____ CIS value: _____ (attach supplementary notification appliance forms with locations, values, and weather conditions)			
Other (specify):			

See main System Record of Inspection and Testing for additional information, certifications, and approvals.

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~~Figure 7.8.2(k) Emergency Communications Systems Supplementary Record of Inspection and Testing.~~

EMERGENCY COMMUNICATIONS SYSTEMS
SUPPLEMENTARY RECORD OF INSPECTION AND TESTING

This form is a supplement to the System Record of Inspection and Testing.
It includes systems and components specific to emergency communication systems.
This form is to be completed by the system inspection and testing contractor at the time of the inspection and/or test.
It shall be permitted to modify this form as needed to provide a more complete and/or clear record.
Insert N/A in all unused lines.

Inspection/Test Start Date/Time: _____ Inspection/Test Completion Date/Time: _____

Number of Supplemental Pages Attached: _____

1. PROPERTY INFORMATION

Name of property: _____

Address: _____

2. DESCRIPTION OF SYSTEM OR SERVICE

❑ Fire alarm with in-building fire emergency voice alarm communications system (EVAC)

❑ Mass notification system

❑ Combination system, with the following components:

❑ Fire alarm ❑ EVACS ❑ MNS ❑ Two-way, in-building, emergency communications system

❑ Other (specify): _____

Additional description of system(s): _____

2.1 In-Building Fire Emergency Voice Alarm Communications System

Manufacturer: _____ Model number: _____

Number of single voice alarm channels: _____ Number of multiple voice alarm channels: _____

Number of loudspeakers: _____ Number of loudspeaker circuits: _____

Location of amplification and sound processing equipment: _____

Location of paging microphone stations:

Location 1: _____

Location 2: _____

Location 3: _____

2.2 Mass Notification System

2.2.1 System Type:

❑ In-building MNS—combination

❑ In-building MNS ❑ Wide-area MNS ❑ Distributed recipient MNS

❑ Other (specify): _____

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EMERGENCY COMMUNICATIONS SYSTEMS
SUPPLEMENTARY RECORD OF INSPECTION AND TESTING *(continued)*

2. DESCRIPTION OF SYSTEM OR SERVICE *(continued)*

2.2.2 System Features:

❑ Combination fire alarm/MNS ❑ MNS autonomous control unit ❑ Wide-area MNS to regional/national alerting interface

❑ Local operating console (LOC) ❑ Distributed recipient MNS (DRMNS) ❑ Wide-area MNS to DRMNS interface

❑ Wide-area MNS to high-power loudspeaker array (HPLA) interface ❑ In-building MNS to wide-area MNS interface

❑ Other (specify): _____

2.2.3 MNS Local Operating Consoles

Location 1: _____

Location 2: _____

Location 3: _____

2.2.4 High-Power Loudspeaker Arrays

Number of HPLA loudspeaker intonation zones: _____

Location 1: _____

Location 2: _____

Location 3: _____

2.2.5 Mass Notification Devices

Combination fire alarm/MNS visual devices: _____ MNS-only visual devices: _____

Textual signs: _____ Other (describe): _____

Supervision class: _____

2.2.6 Special Hazard Notification

❑ This system does not have special suppression pre-discharge notification

❑ MNS systems DO NOT override notification appliances required to provide special suppression pre-discharge notification

3. TWO-WAY EMERGENCY COMMUNICATION SYSTEMS

3.1 Telephone System

Number of telephone jacks installed: _____ Number of warden stations installed: _____

Number of telephone handsets stored on site: _____

Type of telephone system installed: ❑ Electrically powered ❑ Sound powered

3.2 Area of Refuge Emergency Communications Systems

Number of stations: _____ Location of central control point: _____

Days and hours when central control point is attended: _____

Location of alternate control point: _____

Days and hours when alternate control point is attended: _____

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EMERGENCY COMMUNICATIONS SYSTEMS
SUPPLEMENTARY RECORD OF INSPECTION AND TESTING *(continued)*

3. TWO-WAY EMERGENCY COMMUNICATIONS SYSTEMS *(continued)*

3.3 Elevator Emergency Communications Systems

Number of elevators with stations: _____ Location of central control point: _____

Days and hours when central control point is attended: _____

Location of alternate control point: _____

Days and hours when alternate control point is attended: _____

3.4 Other Two-Way Communications System

Describe: _____

4. TESTING RESULTS

4.1 Control Unit and Related Equipment

Description	Visual Inspection	Functional Test	Comments
Control unit	❑	❑	
Lamps/LEDs/LCDs	❑	❑	
Fuses	❑	❑	
Trouble signals	❑	❑	
Disconnect switches	❑	❑	
Ground fault monitoring	❑	❑	
Supervision	❑	❑	
Local annunciator	❑	❑	
Remote annunciators	❑	❑	
Remote power panels	❑	❑	
Other:	❑	❑	

4.2 Secondary Power

Description	Visual Inspection	Functional Test	Comments
Battery condition	❑	❑	
Load voltage	❑	❑	
Discharge test	❑	❑	
Charger test	❑	❑	
Remote panel batteries	❑	❑	

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EMERGENCY COMMUNICATIONS SYSTEMS
SUPPLEMENTARY RECORD OF INSPECTION AND TESTING *(continued)*

4. TESTING RESULTS *(continued)*

4.3 Emergency Communications Equipment

Description	Visual Inspection	Functional Test	Comments
Control unit	❑	❑	
Lamps/LEDs/LCDs	❑	❑	
Fuses	❑	❑	
Secondary power supply	❑	❑	
Trouble signals	❑	❑	
Disconnect switches	❑	❑	
Ground fault monitoring	❑	❑	
Panel supervision	❑	❑	
System performance	❑	❑	
System audibility	❑	❑	
System intelligibility	❑	❑	
Other:	❑	❑	

4.4 Mass Notification Equipment

Description	Visual Inspection	Functional Test	Comments
Functional test	❑	❑	
Reset/Power down test	❑	❑	
Fuses	❑	❑	
Primary power supply	❑	❑	
SEPSS power test	❑	❑	
Trouble signals	❑	❑	
Disconnect switches	❑	❑	
Ground fault monitoring	❑	❑	
CCU security mechanism	❑	❑	
Prerecorded message content	❑	❑	
Prerecorded message activation	❑	❑	
Software backup performed	❑	❑	
Test backup software	❑	❑	
Fire alarm to MNS interface	❑	❑	
MNS to fire alarm interface	❑	❑	
In-building MNS to wide-area MNS	❑	❑	
MNS to direct response MNS	❑	❑	

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EMERGENCY COMMUNICATIONS SYSTEMS
SUPPLEMENTARY RECORD OF INSPECTION AND TESTING *(continued)*

4. TESTING RESULTS *(continued)*

4.4 Mass Notification Equipment *(continued)*

Description	Visual Inspection	Functional Test	Comments
Sound pressure levels (attach report with location, values, and weather conditions)	❑	❑	
System intelligibility ❑ CSI ❑ STI (attach report with location, values, and weather conditions)	❑	❑	
Other:	❑	❑	

4.5 Two-Way Communication Equipment

Description	Visual Inspection	Functional Test	Comments
Phone handsets	❑	❑	
Phone jacks	❑	❑	
Off-hook indicator	❑	❑	
Call-in signal	❑	❑	
System performance	❑	❑	
System audibility	❑	❑	
System intelligibility	❑	❑	
Other:	❑	❑	

See main System Record of Inspection and Testing for additional information, certifications, and approvals.

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Figure 7.8.2(l) Interface Component Supplementary Record of Inspection and Testing.

INTERFACE COMPONENT
SUPPLEMENTARY RECORD OF INSPECTION AND TESTING

This form is a supplement to the System Record of Inspection and Testing.
It includes an interface component test record for circuit interfaces, signaling line circuit interfaces, and fire alarm control interfaces.
This form is to be completed by the system inspection and testing contractor at the time of the inspection and/or test.
It shall be permitted to modify this form as needed to provide a more complete and/or clear record.
Insert N/A in all unused fields.

Inspection/Test Start Date/Time: _____ Inspection/Test Completion Date/Time: _____

Number of Supplemental Pages Attached: _____

1. PROPERTY INFORMATION

Name of property: _____

Address: _____

2. INTERFACE COMPONENT TEST RESULTS

Interface Component Type	Address	Location	Test Results

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INTERFACE COMPONENT
SUPPLEMENTARY RECORD OF INSPECTION AND TESTING *(continued)*

2. INTERFACE COMPONENT TEST RESULTS *(continued)*

Interface Component Type	Address	Location	Test Results

See main System Record of Inspection and Testing for additional information, certifications, and approvals.

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~~Figure 7.8.2(m)~~ Installation and Inspection Form Single- and Multiple-Station Alarms and Household Fire Alarm Systems.

INSTALLATION AND INSPECTION FORM
SINGLE- AND MULTIPLE-STATION ALARMS AND
HOUSEHOLD FIRE ALARM SYSTEMS

This form is to be completed at the time of installation/final inspection of any household fire alarm system and single- or multiple-station alarms. It shall be permitted to modify this form as required to provide a more complete and/or clear record. Insert N/A in all unused lines.

Attach additional sheets, data, or calculations as necessary to complete form.

Form Completion Date: _____ Supplemental Pages Attached: _____

1. PROPERTY INFORMATION

Property Owner: _____
Address: _____
Phone: _____ E-Mail: _____ Other: _____

2. INSTALLATION, CONTRACTOR, AND MONITORING INFORMATION

Installation Contractor: _____
Address: _____
Phone: _____ E-Mail: _____ Other: _____

2.1 Type of Off-Premises Notification

Monitoring Organization: _____
Address: _____
Phone: _____ E-Mail: _____ Other: _____
Account Number: _____ Means of Transmission: _____

3. DESCRIPTION OF SYSTEM OR SERVICE

NFPA 72 Edition: _____

3.1 Type of System

❑ Single-Station ❑ Multiple-Station ❑ Household Fire Alarm System ❑ Carbon Monoxide Alarm System

3.2 Number of Devices

Single-Station Smoke Alarms: _____ Multiple-Station Smoke Alarms: _____
Single-Station Heat Alarms: _____ Multiple-Station Heat Alarms: _____
Single-Station Carbon Monoxide Alarms: _____ Multiple-Station Carbon Monoxide Alarms: _____
System Smoke Detectors: _____ System Heat Detectors: _____
Waterflow Switches: _____
Notification Appliances: _____ Type: _____
Interfaced/Other Equipment: _____

3.3 Location (L) and Date (D) of Devices

Device type, location and manufacture date of devices (date shown on back of device)

_____ _____ _____ _____
_____ _____ _____ _____
_____ _____ _____ _____

Electrical Panel (L): _____ Breaker Number: _____
Alarm Control Unit (L): _____ Battery Back-up (D): _____
Plug in Transformer (L): _____
Relay for Interconnection (L): _____

4. PREPARED BY

Signed: _____ Printed Name: _____ Date: _____
Title: _____ Organization: _____

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Statement of Problem and Substantiation for Public Input

This PI relates to PI-80 and PI-81, proposing the relocation of the Inspection and Testing forms to an Annex note related to Section 7.6.6 and reserving Section 7.8.2 for the remaining documents, namely the Record of Completion form and Household Alarm Installation form. The title of this section has been changed accordingly as well. This is consistent with the Code's intent all along with regard to the Inspection and Testing forms, namely that they are samples for guidance but not intended to be mandated. The AHJ, of course, can still mandate the use of the Inspection and Testing forms as they appear in the Annex of the Code. However, the current placement of the Inspection and Testing forms

in the body of the Code is inconsistent with the Code's intent for those documents.

The committee rejected a related PC last cycle stating that the Code already states in the Annex that the I&T is a sample form. That statement is true. However, the presence of the I&T form in the body of the Code as a sample is not correct. As a sample form, it belongs in the Annex. Again, its presence in the body of the Code is contradictory to the Code's intent and to the Annex note that the committee referenced in their previous substantiation. It belongs in the Annex. The concern of the committee over not having the form in Chapter 7 is not valid since it's still related to Chapter 7 by way of the annex note linked to 7.6.6.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 80-NFPA 72-2022 [Section No. 7.6.6]	
Public Input No. 81-NFPA 72-2022 [New Section after A.7.7.1.2]	
Public Input No. 68-NFPA 72-2022 [Section No. A.7.8.2(2)]	
Public Input No. 80-NFPA 72-2022 [Section No. 7.6.6]	
Public Input No. 81-NFPA 72-2022 [New Section after A.7.7.1.2]	

Submitter Information Verification

Submitter Full Name: Joe Scibetta
Organization: BuildingReports
Street Address:
City:
State:
Zip:
Submittal Date: Thu Jan 13 09:56:57 EST 2022
Committee: SIG-TMS

Committee Statement

Resolution: The requirements for form content should remain in the body of the Code, and this is expressed through the provided figures in 7.8.2. However, 7.8.1.2 permits alternative form layouts to be used.

Public Input No. 370-NFPA 72-2022 [Chapter 8]

Chapter 8 ~~Reserved~~ ~~**Responsibility of the Owner or Designated Representative**~~

8.1 Scope

This chapter shall highlight owner requirements. It does not take the place of other parts of this code.

8.2 Owner requirements

The owner shall comply with all the following requirements:

(1) **The owner shall maintain the fire alarm system in accordance with Chapter 14.**

(2) **The owner shall maintain the documents and site-specific software provided by Chapter 7.**

(3) **The owner shall respond to impairment notifications per chapter 10.**

Statement of Problem and Substantiation for Public Input

Some owners may not be familiar with all requirements of NFPA 72. The purpose here is to further clarify their responsibility for the overall fire alarm and signaling system of an occupancy. Pointing to specific requirements of the document will allow the owner to have one reference point.

Submitter Information Verification

Submitter Full Name: Chris Heaton
Organization: Electronic Security Association
Affiliation: Electronic Security Association
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 25 10:17:01 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: The proposed language highlights requirements that are already covered in other sections of the Code and would not resolve the stated problem that some owners are unfamiliar with the Code.

Public Input No. 462-NFPA 72-2022 [Chapter 8]

Chapter 8 ~~Reserved~~

Chapter 8 - Responsibility of the Owner or Designated Representative

8.1 Scope

This chapter shall highlight owner requirements. It does not take the place of other parts of this code.

8.2 Owner requirements

The owner shall comply with all the following requirements:

a) The owner shall maintain the fire alarm system in accordance with Chapter 14.

b) The owner shall maintain the documents and site-specific software provided by Chapter 7.

c) The owner shall respond to impairment notifications per chapter 10.

Additional Proposed Changes

File Name	Description	Approved
NFPA_72_BS_SB_8-1_comments.docx		

Statement of Problem and Substantiation for Public Input

Some owners may not be familiar with all requirements of NFPA 72 and the purpose is to further clarify their responsibility for the overall fire alarm and signaling system of an occupancy. Pointing to specific requirements of the document will allow the owner to have one reference point.

Submitter Information Verification

Submitter Full Name: Tim Knisely
Organization: Automatic Fire Alarm Association (AFAA)
Affiliation: Automatic Fire Alarm Association (AFAA)
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 27 09:47:09 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: The proposed language highlights requirements that are already covered in other sections of the Code and would not resolve the stated problem that some owners are unfamiliar with the Code.

Public Input No. 503-NFPA 72-2022 [Chapter 8]

Chapter 8 Reserved

8.1 Scope

This scope shall highlight owner requirements. It does not take the place of other parts of this code.

8.2 Owner requirements

The owner shall comply with all the following requirements:

a) The owner shall maintain the fire alarm system in accordance with Chapter 14,

b) The owner shall maintain the documents and site-specific software provided by Chapter 7,

c) The owner shall respond to impairment notifications per Chapter 10.

Statement of Problem and Substantiation for Public Input

Some owners may not be familiar with all requirements of NFPA 72 and the purpose is to further clarify their responsibility for the overall fire alarm and signaling system of an occupancy. Pointing to specific requirements of the document will allow the owner to have one reference point.

Submitter Information Verification

Submitter Full Name: Megan Hayes
Organization: Nema
Street Address:
City:
State:
Zip:
Submittal Date: Mon May 30 15:25:55 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: The proposed language highlights requirements that are already covered in other sections of the Code and would not resolve the stated problem that some owners are unfamiliar with the Code.

Public Input No. 377-NFPA 72-2022 [Section No. 10.3.1]

10.3.1*

Equipment ~~constructed and installed in conformity with this Code shall be listed~~ shall meet all of the following requirements:

a) Equipment shall be designed for the purpose for which it is used.

b) Equipment shall be listed as complying with one or more of the standards in Chapter 2.

c) Equipment shall be compatible for use with the system.

Statement of Problem and Substantiation for Public Input

The modified text clarifies the intended listing requirements. Products must be listed to compatible standards as identified in Chapter 2.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 378-NFPA 72-2022 [Section No. A.10.3.1]	

Submitter Information Verification

Submitter Full Name: Chris Heaton
Organization: Electronic Security Association
Affiliation: Electronic Security Association
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 25 16:36:03 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: The current language is adequate. In addition, the committee does not agree with the proposed changes. Proposed “a)” addresses equipment design rather than equipment performance (Section 1.1 and 1.2). Proposed “b)” attempts to modify and limit the definition of “Listed” in Section 3.2.5. Proposed “c)” for compatibility is adequately addressed by the process to be “Listed”. It was also noted that some of the topics this input attempts to address are already addressed in Section 10.3 (e.g., 10.3.1 and 10.3.2).

Public Input No. 464-NFPA 72-2022 [Section No. 10.3.1]

10.3.1*

~~Equipment constructed and installed in conformity with this Code shall be listed~~

10.3.1 Equipment shall meet all of the following requirements:

a) Equipment shall be designed for the purpose for which it is used.

b) Equipment shall be listed as complying with one or more of the standards in Chapter 2.

c) Equipment shall be compatible for use with the system.

A10.3.1

Just noting that a piece of equipment is listed is not sufficient. Listing involves evaluation of the equipment to determine its suitability for a specific purpose for use. The evaluation is usually accomplished using product testing standards developed to demonstrate that specific performance requirements have been met. Many of these performance requirements are based on specific requirements in the Code and go far beyond requirements used only to demonstrate electrical safety.

While most equipment would be listed for fire alarm system use, some equipment may have a different listing. For example, routers and modems that may be used with some transmission methods in the signal transmission path between a protected premises and a supervising station might be listed as general communications equipment (see 26.6.3.12).

Equipment listings generally contain information pertaining to the permitted use, required ambient conditions, mounting orientation, voltage tolerances, compatibility, and so on. Equipment must be installed, tested, and maintained in conformance with the listing and the manufacturer's published instructions to meet the requirements of the Code. Conformance with the listing and the manufacturer's instructions has been a long-standing requirement, originating in the requirements of NFPA 70.

Another aspect to equipment listing is the compatibility with the other parts of the system. This is key as it is designed to ensure system functionality and reliability.

Additional Proposed Changes

File Name	Description	Approved
NFPA_72_BS_SB_10-3-1_comments.docx		

Statement of Problem and Substantiation for Public Input

The text as modified further clarifies the intended listing requirements. Products must be listed to compatible standards as identified in Chapter 2.

Submitter Information Verification

Submitter Full Name: Tim Knisely
Organization: Automatic Fire Alarm Association (AFAA)

Affiliation: Automatic Fire Alarm Association (AFAA)
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 27 09:52:25 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: The current language is adequate. In addition, the committee does not agree with the proposed changes. Proposed “a)” addresses equipment design rather than equipment performance (Section 1.1 and 1.2). Proposed “b)” attempts to modify and limit the definition of “Listed” in Section 3.2.5. Proposed “c)” for compatibility is adequately addressed by the process to be “Listed”. It was also noted that some of the topics this input attempts to address are already addressed in Section 10.3 (e.g., 10.3.1 and 10.3.2).

Public Input No. 504-NFPA 72-2022 [Section No. 10.3.1]

10.3.1*

Equipment constructed and installed in conformity with this Code shall be listed for the purpose for which it is used.

10.3.1 Equipment shall meet all of the following requirements:

a) Equipment shall be designed for the purpose for which it is used,

b) Equipment shall be listed as complying with one or more of the standards in Chapter 2,

c) Equipment shall be compatible for use with the system.

A10.3.1

Just noting that a piece of equipment is listed is not sufficient. Listing involves evaluation of the equipment to determine its suitability for a specific purpose for use. The evaluation is usally accomplished using product testing standards developed to demonstrate that specifc performance requirements have been met. Many of these performance requirements are based on specific requirements in the Code and go far beyond requirements used only to demonstrate slectrical safety.

While most equipment would be listed for fire alarm system use, some equipment may have a different listing. For example, routers and modems that may be used with some transmission methods in the signal transmission path between a protected premiises and a supervising station might be listed as general communications equipment (see 26.6.3.12).

Equipment listings generally contain information pertaining to the permitted use, required ambient conditions, mounting orientation, voltage tolerances, compatibility, and so on. Equipment must be installed, tested, and maintained in conformance with the listing and the manufacturer's published instructions to meet the requirements of the Code. Conformance with the listing and the manfacturer's instructions has been a long-standing requirement, originating in the requirements of NFPA 70.

Another aspect to equipment listing is the compatibility with the other parts of the system. This is key as it is designed to ensure system functionality and reliability.

Statement of Problem and Substantiation for Public Input

The text as modified further clarifies the intended listing requirements. Products must be listed to compatible standards as identified in Chapter 2.

Submitter Information Verification

Submitter Full Name: Megan Hayes
Organization: Nema
Street Address:
City:
State:
Zip:
Submittal Date: Mon May 30 15:31:46 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: The current language is adequate. In addition, the committee does not agree with the proposed changes. Proposed “a)” addresses equipment design rather than equipment performance (Section 1.1 and 1.2). Proposed “b)” attempts to modify and limit the definition of “Listed” in Section 3.2.5. Proposed “c)” for compatibility is adequately addressed by the process to be “Listed”. It was also noted that some of the topics this input attempts to address are already addressed in Section 10.3 (e.g., 10.3.1 and 10.3.2).

Public Input No. 283-NFPA 72-2022 [Section No. 10.4.4]

10.4.4*

Unless ~~otherwise permitted~~ otherwise required by the authority having jurisdiction, control unit displays, visible indicators, or controls shall be mounted such that the distance to the highest switch, lamp, or textual display does not exceed 6 ft (1.8 m) above the finished floor, and the lowest switch, lamp, or textual display shall not be less than 15 in. (375 mm) above the finished floor.

Additional Proposed Changes

File Name	Description	Approved
low_panel_20220512154432.pdf	Example of Currently Permitted FACU mounting height.	

Statement of Problem and Substantiation for Public Input

The proposer of this Public Input again requests that the SIG-FUN consider my proposal to revise the permitted mounting height requirement for control unit displays, visible indicators or controls.

As stated in my previous attempts to have this requirement revised, the use of the word "permitted" does not carry the same power of enforcement for the AHJ as the word "required". An AHJ may "permit" the control unit displays, visible indicators or controls to be located at a user friendly height for firefighters but an installer is not "required" to mount the FACU and its control unit displays, visible indicators or controls at the height required by the AHJ. The attached picture shows a FACU, and its control unit displays, visible indicators or controls, mounted at a height that meets the requirements of 10.4.4 The current control unit displays, visible indicators or controls are located +/- 28-inches AFF. Based on 10.4.4 the entire panel could be lowered another +/- 13-inches and still be in compliance with the current code language.

It should be clear from the picture that even at the current mounting height of the FACU, the viewability and operability of the control unit displays, visible indicators or controls is not ideal for firefighters. Now lower the FACU another 13-inches. The Annex material for 10.4.4 implies that the intent of the section is for the system owner and first responders. Clearly, the mounting height is not beneficial for first responders who would need to get on their hands and knees to view the display and operate the switches and controls.

I request that the technical committee consider my proposed word change so AHJ's, if desired, could require a user friendly mounting height for control unit displays, visible indicators or controls.

Submitter Information Verification

Submitter Full Name: Warren Olsen
Organization: Fire Safety Consultants, Inc.
Affiliation: Illinois Fire Inspectors Association
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 13 11:31:01 EDT 2022

Committee: SIG-FUN

Committee Statement

Resolution: The current text provides a standard set of criteria for panel mounting and an opportunity for the AHJ to allow an alternative mounting height. The AHJ already has the ability to implement alternative mounting heights by adopting this standard with amendment(s) through their jurisdiction specific code/rule setting process, in which case it would be required.

Public Input No. 98-NFPA 72-2022 [Section No. 10.4.4]

10.4.4*

Unless otherwise permitted by the authority having jurisdiction, control unit displays, visible indicators, or controls shall be mounted ~~such that the~~ to comply with both of the following:

(1) The distance to the highest switch, lamp, or textual display does not exceed 6 ft (1.8 m) above the finished floor~~, and~~ .

(2) The distance to the lowest switch, lamp, or textual display ~~shall~~ is not ~~be less than~~ within 15 in. (375 mm) ~~above the~~ of the finished floor.

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text utilized listed items in accordance with MOS section 3.3.1 Listed Items.

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
Organization: Fike Corporation
Affiliation: Fire Suppression Systems Association (FSSA)
Street Address:
City:
State:
Zip:
Submittal Date: Thu Jan 20 17:53:58 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5051-NFPA 72-2022
Statement: The Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text.

Public Input No. 380-NFPA 72-2022 [Section No. 10.5.1.3]

10.5.1.3

Personnel shall provide documentation of their qualification by one or more of the following:

(1) Registration, licensing, or certification by a state or local authority

(2) Certification by an organization acceptable to the authority having jurisdiction

(3) ~~Manufacturer's certification~~ Certification by the manufacturer for the specific type and brand of the system provided

Statement of Problem and Substantiation for Public Input

Revised wording to be consistent with #2 and to clarify that certification by the manufacturer is specifically for the systems that the manufacturer provides.

Submitter Information Verification

Submitter Full Name: Chris Heaton
Organization: Electronic Security Association
Affiliation: Electronic Security Association
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 25 16:47:34 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5057-NFPA 72-2022
Statement: The text is revised to clarify that certification by a manufacturer is specific for the equipment that the manufacturer provides.

Public Input No. 465-NFPA 72-2022 [Section No. 10.5.1.3]

10.5.1.3

Personnel shall provide documentation of their qualification by one or more of the following:

(1) Registration, licensing, or certification by a state or local authority

(2) Certification by an organization acceptable to the authority having jurisdiction

(3) ~~Manufacturer's certification for~~ ~~the~~ Certification by the manufacturer of the specific type and brand

~~of~~

(4) of the system provided

Additional Proposed Changes

File Name	Description	Approved
NFPA_72_BS_SB_10-5-1-3_comments.docx		

Statement of Problem and Substantiation for Public Input

Revised the format to be consistent with (2) and to clarify that certification by a manufacturer is specifically for the systems that manufacturer provides.

Submitter Information Verification

Submitter Full Name: Tim Knisely
Organization: Automatic Fire Alarm Association (AFAA)
Affiliation: Automatic Fire Alarm Association (AFAA)
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 27 09:58:38 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5057-NFPA 72-2022
Statement: The text is revised to clarify that certification by a manufacturer is specific for the equipment that the manufacturer provides.

Public Input No. 505-NFPA 72-2022 [Section No. 10.5.1.3]

10.5.1.3

Personnel shall provide documentation of their qualification by one or more of the following:

(1) Registration, licensing, or certification by a state or local authority

(2) Certification by an organization acceptable to the authority having jurisdiction ~~Manufacturer's certification for the~~

(3) Certification by the manufacturer of the specific type and brand of the system provided

Statement of Problem and Substantiation for Public Input

Revised the format to be consistent with (2) and to clarify that certification by a manufacturer is specifically for the systems that manufacturer provides.

Submitter Information Verification

Submitter Full Name: Megan Hayes
Organization: Nema
Street Address:
City:
State:
Zip:
Submittal Date: Mon May 30 16:06:30 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5057-NFPA 72-2022
Statement: The text is revised to clarify that certification by a manufacturer is specific for the equipment that the manufacturer provides.

Public Input No. 99-NFPA 72-2022 [Section No. 10.5.2.1]

10.5.2.1

Installation personnel shall be ~~qualified or shall be supervised~~ at least one of the following:

(1) Qualified

(2) Supervised by persons who are qualified in the installation, inspection, and testing of the systems~~.~~

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text utilized listed items in accordance with MOS section 3.3.1 Listed Items.

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
Organization: Fike Corporation
Affiliation: Fire Suppression Systems Association (FSSA)
Street Address:
City:
State:
Zip:
Submittal Date: Thu Jan 20 18:03:16 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5067-NFPA 72-2022
Statement: The Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text.

Public Input No. 382-NFPA 72-2022 [Section No. 10.5.2.3]

10.5.2.3

Personnel shall provide documentation of their qualification by one or more of the following:

(1) Registration, licensing, or certification by a state or local authority

(2) Certification by an organization acceptable to the authority having jurisdiction

(3) ~~Manufacturer's certification for the~~ Certification by the manufacturer of the specific type and brand of the system provided

Statement of Problem and Substantiation for Public Input

Revised wording format to be consistent with #2 and to clarify that certification by a manufacturer is specific to systems that the manufacturer provides.

Submitter Information Verification

Submitter Full Name: Chris Heaton
Organization: Electronic Security Association
Affiliation: Electronic Security Association
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 25 16:51:23 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5072-NFPA 72-2022
Statement: The text is revised to clarify that certification by a manufacturer is specific for the equipment that the manufacturer provides.

Public Input No. 466-NFPA 72-2022 [Section No. 10.5.2.3]

10.5.2.3

Personnel shall provide documentation of their qualification by one or more of the following:

(1) Registration, licensing, or certification by a state or local authority

(2) Certification by an organization acceptable to the authority having jurisdiction

(3) ~~Manufacturer's certification for~~ ~~the~~ Certification by the manufacturer of the specific type and brand

~~of~~

(4) of the system provided

Additional Proposed Changes

File Name	Description	Approved
NFPA_72_BS_SB_10-5-2-3_comments.docx		

Statement of Problem and Substantiation for Public Input

Revised the format to be consistent with (2) and to clarify that certification by a manufacturer is specifically for the systems that manufacturer provides.

Submitter Information Verification

Submitter Full Name: Tim Knisely
Organization: Automatic Fire Alarm Association (AFAA)
Affiliation: Automatic Fire Alarm Association (AFAA)
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 27 10:03:22 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5072-NFPA 72-2022
Statement: The text is revised to clarify that certification by a manufacturer is specific for the equipment that the manufacturer provides.

Public Input No. 506-NFPA 72-2022 [Section No. 10.5.2.3]

10.5.2.3

Personnel shall provide documentation of their qualification by one or more of the following:

(1) Registration, licensing, or certification by a state or local authority

(2) Certification by an organization acceptable to the authority having jurisdiction

(3) ~~Manufacturer's certification for the~~ Certification by the manufacturer of the specific type and brand of the system provided

Statement of Problem and Substantiation for Public Input

Revised the format to be consistent with (2) and to clarify that certification by a manufacturer is specifically for the systems that manufacturer provides.

Submitter Information Verification

Submitter Full Name: Megan Hayes
Organization: Nema
Street Address:
City:
State:
Zip:
Submittal Date: Mon May 30 16:10:41 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5072-NFPA 72-2022
Statement: The text is revised to clarify that certification by a manufacturer is specific for the equipment that the manufacturer provides.

Public Input No. 101-NFPA 72-2022 [New Section after 10.5.3.2]

10.5.3.2.1

Testing personnel shall have knowledge and experience of the testing requirements contained in this Code, of the equipment being tested and of the test methods.

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text utilized two paragraphs for the two requirements.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 100-NFPA 72-2022 [Section No. 10.5.3.2]	directly related

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
Organization: Fike Corporation
Affiliation: Fire Suppression Systems Association (FSSA)
Street Address:
City:
State:
Zip:
Submittal Date: Thu Jan 20 18:07:59 EST 2022
Committee: SIG-TMS

Committee Statement

Resolution: FR-5076-NFPA 72-2022
Statement: The Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text.

Public Input No. 102-NFPA 72-2022 [New Section after 10.5.3.2]

10.5.3.2.2

Knowledge and experience of testing personnel shall be acceptable to the authority having jurisdiction or meet the requirement of 10.5.3.4

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text utilized 2 paragraphs for the 2 requirements.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 100-NFPA 72-2022 [Section No. 10.5.3.2]	directly related

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
Organization: Fike Corporation
Affiliation: Fire Suppression Systems Association (FSSA)
Street Address:
City:
State:
Zip:
Submittal Date: Thu Jan 20 18:11:15 EST 2022
Committee: SIG-TMS

Committee Statement

Resolution: FR-5076-NFPA 72-2022

Statement: The Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text.

Public Input No. 100-NFPA 72-2022 [Section No. 10.5.3.2]

10.5.3.2* Testing Personnel.

~~Testing personnel shall have knowledge and experience of the testing requirements contained in this Code, of the equipment being tested, and of the test methods. That knowledge and experience shall be acceptable to the authority having jurisdiction or meet the requirement of 10.5.3.4 .~~

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text Provides two separate paragraphs for the two requirements in the section.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 101-NFPA 72-2022 [New Section after 10.5.3.2]	
Public Input No. 102-NFPA 72-2022 [New Section after 10.5.3.2]	

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
Organization: Fike Corporation
Affiliation: Fire Suppression Association (FSSA)
Street Address:
City:
State:
Zip:
Submittal Date: Thu Jan 20 18:05:28 EST 2022
Committee: SIG-TMS

Committee Statement

Resolution: FR-5076-NFPA 72-2022
Statement: The Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text.

Public Input No. 104-NFPA 72-2022 [New Section after 10.5.3.3]

10.5.3.3.1

Service personnel shall have knowledge and experience of the maintenance and servicing requirements contained in this Code, of the equipment being serviced or maintained, and of the servicing or maintenance methods.

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text provides 2 separate paragraphs for the 2 requirements.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 103-NFPA 72-2022 [Section No. 10.5.3.3]	directly related

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
Organization: Fike Corporation
Affiliation: Fire Suppression Systems Association (FSSA)
Street Address:
City:
State:
Zip:
Submittal Date: Thu Jan 20 18:15:49 EST 2022
Committee: SIG-TMS

Committee Statement

Resolution: FR-5077-NFPA 72-2022

Statement: The Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text.

Public Input No. 105-NFPA 72-2022 [New Section after 10.5.3.3]

10.5.3.3.2

Knowledge and experience of service personnel shall be acceptable to the authority having jurisdiction or meet the requirement of 10.5.3.4.

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text utilized listed 2 separate paragraphs for the 2 requirements.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 103-NFPA 72-2022 [Section No. 10.5.3.3]	directly related.

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
Organization: Fike Corporation
Affiliation: Fire Suppression Systems Association (FSSA)
Street Address:
City:
State:
Zip:
Submittal Date: Thu Jan 20 18:19:00 EST 2022
Committee: SIG-TMS

Committee Statement

Resolution: FR-5077-NFPA 72-2022
Statement: The Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text.

Public Input No. 103-NFPA 72-2022 [Section No. 10.5.3.3]

10.5.3.3 Service Personnel.

~~Service personnel shall have knowledge and experience of the maintenance and servicing requirements contained in this Code, of the equipment being serviced or maintained, and of the servicing or maintenance methods. That knowledge and experience shall be acceptable to the authority having jurisdiction or meet the requirement of 10.5.3.4 .~~

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text utilized 2 separate paragraphs for the 2 requirements.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 104-NFPA 72-2022 [New Section after 10.5.3.3]	
Public Input No. 105-NFPA 72-2022 [New Section after 10.5.3.3]	

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
Organization: Fike Corporation
Affiliation: Fire Suppression Systems Association (FSSA)
Street Address:
City:
State:
Zip:
Submittal Date: Thu Jan 20 18:14:25 EST 2022
Committee: SIG-TMS

Committee Statement

Resolution: FR-5077-NFPA 72-2022
Statement: The Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text.

Public Input No. 282-NFPA 72-2022 [New Section after 10.5.3.5.1]

10.5.3.5.2

If certification is not offered or required by the manufacturer, the requirements of 10.5.3.5.1 shall not apply.

Statement of Problem and Substantiation for Public Input

This proposal would move what is currently in A.10.5.3.5 from the appendix into the body of the code. There are many older systems that are still in operation across the country where the manufacturer no longer offers certification for programming. As many certifications expire over time, and as technicians retire, it is becoming more and more difficult to meet 10.5.3.5 for these older systems, and it will eventually become impossible to meet the requirement for these systems without requiring the building owner to pay for an upgrade or an entirely new system.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 343-NFPA 72-2022 [Section No. A.10.5.3.5]	

Submitter Information Verification

Submitter Full Name: Jason Dupuis
Organization: Cintas Fire Protection F19
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 12 16:56:40 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: The text is appropriately addressed within the annex as explanatory information and does not belong in the main body of the code as a requirement.

Public Input No. 109-NFPA 72-2022 [New Section after 10.5.5.2]

10.5.5.2.1

Evidence of qualifications and/or certification shall be provided when requested by the authority having jurisdiction.

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text utilized 2 separate paragraphs for the 2 requirements.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 108-NFPA 72-2022 [Section No. 10.5.5.2]	directly associated

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
Organization: Fike Corporation
Affiliation: Fire Suppression Systems Association (FSSA)
Street Address:
City:
State:
Zip:
Submittal Date: Mon Jan 24 14:28:26 EST 2022
Committee: SIG-SSS

Committee Statement

Resolution: FR-5179-NFPA 72-2022
Statement: This section has been revised to align with the Manual of Style.

Public Input No. 110-NFPA 72-2022 [New Section after 10.5.5.2]

10.5.5.2.2

A license or qualification listing shall be current in accordance with the requirements of the issuing authority or organization.

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text utilized 2 separate paragraphs for the 2 requirements.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 108-NFPA 72-2022 [Section No. 10.5.5.2]	directly relates

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
Organization: Fike Corporation
Affiliation: Fire Suppression Systems Association (FSSA)
Street Address:
City:
State:
Zip:
Submittal Date: Mon Jan 24 14:31:07 EST 2022
Committee: SIG-SSS

Committee Statement

Resolution: FR-5179-NFPA 72-2022
Statement: This section has been revised to align with the Manual of Style.

Public Input No. 108-NFPA 72-2022 [Section No. 10.5.5.2]

10.5.5.2

Evidence of qualifications and/or certification~~.~~ ~~shall be provided when requested by the authority having jurisdiction~~ .~~ A license or qualification listing shall be current in accordance with the requirements of the issuing authority or organization.~~

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text utilized 2 separate paragraphs for the 2 requirements.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 109-NFPA 72-2022 [New Section after 10.5.5.2]	
Public Input No. 110-NFPA 72-2022 [New Section after 10.5.5.2]	

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
Organization: Fike Corporation
Affiliation: Fire Suppression Systems Association (FSSA)
Street Address:
City:
State:
Zip:
Submittal Date: Mon Jan 24 14:27:13 EST 2022
Committee: SIG-SSS

Committee Statement

Resolution: FR-5179-NFPA 72-2022
Statement: This section has been revised to align with the Manual of Style.

Public Input No. 112-NFPA 72-2022 [New Section after 10.5.6.4.3]

10.5.6.4.3.1

Evidence of qualifications and/or certification shall be provided when requested by the authority having jurisdiction.

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text utilized 2 separate paragraphs for the 2 requirements.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 111-NFPA 72-2022 [Section No. 10.5.6.4.3]	directly related.

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
Organization: Fike Corporation
Affiliation: Fire Suppression Systems Association (FSSA)
Street Address:
City:
State:
Zip:
Submittal Date: Mon Jan 24 14:34:47 EST 2022
Committee: SIG-PRS

Committee Statement

Resolution: FR-5114-NFPA 72-2022
Statement: Revised to align with MOS.

Public Input No. 113-NFPA 72-2022 [New Section after 10.5.6.4.3]

10.5.6.4.3.2

A license or qualification listing shall be current in accordance with the requirements of the issuing authority or organization.

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text utilized 2 separate paragraphs for the 2 requirements.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 111-NFPA 72-2022 [Section No. 10.5.6.4.3]	directly related

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
Organization: Fike Corporation
Affiliation: Fire Suppression Systems Association (FSSA)
Street Address:
City:
State:
Zip:
Submittal Date: Mon Jan 24 14:36:42 EST 2022
Committee: SIG-PRS

Committee Statement

Resolution: FR-5114-NFPA 72-2022
Statement: Revised to align with MOS.

Public Input No. 497-NFPA 72-2022 [New Section after 10.5.6.4.3]

10.5.7 Gateway Reporting System Personnel Qualification.

10.5.7.1 Gateway Personnel.

Gateway personnel shall be qualified in the service, inspection, maintenance, and testing of gateway alarm reporting systems.

10.5.7.2 Qualification.

10.5.7.2.1

Personnel shall demonstrate qualification by being trained and certified in gateway alarm reporting system design, installation, or service (as appropriate).

10.5.7.2.2

Personnel who are trained and certified for the specific type of public emergency alarm reporting system and comply with one the following shall be considered qualified:

(1) Personnel who are licensed or certified by a state or local authority, if applicable

(2) Personnel who are certified by a nationally recognized certification organization acceptable to the authority having jurisdiction

(3) Personnel who are employed and qualified by an organization listed by a nationally recognized testing laboratory for the design, installation, or servicing of systems within the scope of this chapter

(4) Personnel who are employed and certified by an equipment manufacturer for the specific type of system

10.5.7.2.3

Evidence of qualifications and/or certification shall be provided when requested by the authority having jurisdiction. A license or qualification listing shall be current in accordance with the requirements of the issuing authority or organization.

Statement of Problem and Substantiation for Public Input

A new chapter for systems that pass through a gateway between a protected premise and a Public Safety Answering Point (PSAP) is being proposed. This PI is for the qualifications of those that would work within the gateway facility.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 495-NFPA 72-2022 [Chapter 25]	New Chapter on Gateways
Public Input No. 498-NFPA 72-2022 [New Section after 3.3.63]	New Definition
Public Input No. 499-NFPA 72-2022 [Section No. A.26.6.2.4]	Revised Exception
Public Input No. 501-NFPA 72-2022 [Section No. A.26.6.2.4]	New Fig.
Public Input No. 495-NFPA 72-2022 [Chapter 25]	
Public Input No. 498-NFPA 72-2022 [New Section after 3.3.63]	
Public Input No. 499-NFPA 72-2022 [Section No. A.26.6.2.4]	

Public Input No. 501-NFPA 72-2022 [Section No. A.26.6.2.4]

Submitter Information Verification

Submitter Full Name: Shane Clary
Organization: Bay Alarm Company
Affiliation: Bay Alarm Company
Street Address:
City:
State:
Zip:
Submittal Date: Mon May 30 14:53:14 EDT 2022
Committee: SIG-SSS

Committee Statement

Resolution: FR-5102-NFPA 72-2022

Statement: Requirements for systems that pass through a subsidiary stations or intermediary service provider systems between a protected premise and a Public Safety Answering Point (PSAP) have been added by a separate revision. The qualifications of those that would work with the facility systems have been added.

Public Input No. 111-NFPA 72-2022 [Section No. 10.5.6.4.3]

10.5.6.4.3

Evidence of qualifications and/or certification~~.~~ ~~shall be provided when requested by the authority having jurisdiction~~ .~~ A license or qualification listing shall be current in accordance with the requirements of the issuing authority or organization.~~

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text utilized 2 separate paragraphs for the 2 requirements.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 112-NFPA 72-2022 [New Section after 10.5.6.4.3]	
Public Input No. 113-NFPA 72-2022 [New Section after 10.5.6.4.3]	

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
Organization: Fike Corporation
Affiliation: Fire Suppression Systems Association (FSSA)
Street Address:
City:
State:
Zip:
Submittal Date: Mon Jan 24 14:33:39 EST 2022
Committee: SIG-PRS

Committee Statement

Resolution: FR-5114-NFPA 72-2022
Statement: Revised to align with MOS.

Public Input No. 467-NFPA 72-2022 [Section No. 10.6.3.1]

10.6.3.1*

Power shall be supplied in ~~accordance~~ accordance ~~with~~ ~~either~~ ~~either~~ with 10.6.3.2 ~~or~~ ~~or~~ , 10.6. ~~4.~~ 4 or 23.16.2

Additional Proposed Changes

File Name	Description	Approved
NFPA_72_BS_SB_10-6-3-1_and_10-6-3-2_comments.docx		

Statement of Problem and Substantiation for Public Input

Revised to include the use of primary batteries as the power supply for low-power radio (wireless) systems permitted by 23.16.2.

Submitter Information Verification

Submitter Full Name: Tim Knisely
Organization: Automatic Fire Alarm Association (AFAA)
Affiliation: Automatic Fire Alarm Association (AFAA)
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 27 10:09:51 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5080-NFPA 72-2022
Statement: The text is revised to include the use of primary batteries as the power supply for low-power radio (wireless) systems permitted by 23.16.2

Public Input No. 383-NFPA 72-2022 [Sections 10.6.3.1, 10.6.3.2]

Sections 10.6.3.1, 10.6.3.2

10.6.3.1*

Power shall be supplied in accordance with ~~either~~ 10.6.3.2 ~~or~~ , 10.6.4 or 23 . 16.2 .

10.6.3.2

Unless configured in compliance with 10.6.4 or 23.16.2 , at least two independent and reliable power supplies shall be provided, one primary and one secondary.

Statement of Problem and Substantiation for Public Input

Revised to include the use of primary batteries as the power supply for low-power radio (wireless) systems permitted by 23.16.2.

Submitter Information Verification

Submitter Full Name: Chris Heaton
Organization: Electronic Security Association
Affiliation: Electronic Security Association
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 25 16:55:31 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5080-NFPA 72-2022
Statement: The text is revised to include the use of primary batteries as the power supply for low-power radio (wireless) systems permitted by 23.16.2

Public Input No. 507-NFPA 72-2022 [Sections 10.6.3.1, 10.6.3.2]

Sections 10.6.3.1, 10.6.3.2

10.6.3.1*

Power shall be supplied in accordance ~~with either~~ with 10.6.3.2 ~~or~~ , 10.6.4, or 23 . 16.2.

10.6.3.2

Unless configured in compliance with 10.6.4 ~~, at~~ or 23.16.2 at least two independent and reliable power supplies shall be provided, one primary and one secondary.

Statement of Problem and Substantiation for Public Input

Revised to include the use of primary batteries as the power supply for low-power radio (wireless) systems permitted by 23.16.2.

Submitter Information Verification

Submitter Full Name: Megan Hayes
Organization: Nema
Street Address:
City:
State:
Zip:
Submittal Date: Mon May 30 16:13:54 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5080-NFPA 72-2022
Statement: The text is revised to include the use of primary batteries as the power supply for low-power radio (wireless) systems permitted by 23.16.2

Public Input No. 555-NFPA 72-2022 [New Section after 10.6.5.1.2]

Sprinkler Bell

The dedicated power for the fire alarm system shall be allowed to power the sprinkler suppression system bell or other notification appliance.

...

Statement of Problem and Substantiation for Public Input

The 120 VAC sprinkler bell that is required by others may be powered by the same dedicated branch circuit that provides power to the FACU and/or remote power supply. This is intended to keep the cost down for the building owner.

Submitter Information Verification

Submitter Full Name: Shane Clary
Organization: Bay Alarm Company
Affiliation: Bay Alarm Company
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 23:37:18 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: The FACP dedicated circuit would no longer be dedicated solely, as required in 10.6.5.1.2. A fault in the power feeding the sprinkler suppression bell circuit could compromise the FACP main power.

Public Input No. 514-NFPA 72-2022 [Section No. 10.6.5.2.5]

10.6.5.2.5

The circuit disconnecting means shall only be accessible ~~only to authorized~~ to service, emergency or authorized personnel.

Statement of Problem and Substantiation for Public Input

The circuit disconnecting means should also be accessible to Service Personnel or emergency personnel and not only to authorized personnel.
Service and Emergency personnel are Specifically defined terms in chapter 3 and they are not included under the authorized personnel definition. Therefore, this section is proposed to be expanded to include additional access to the disconnecting means by Service Personnel or Emergency Personnel.

Submitter Information Verification

Submitter Full Name: Sagiv Weiss-Ishai
Organization: San Francisco Fire Department
Affiliation: SFFD
Street Address:
City:
State:
Zip:
Submittal Date: Mon May 30 19:52:26 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: Fire, police, or medical service personnel would be considered authorized personnel when responding to an emergency.

Public Input No. 114-NFPA 72-2022 [Section No. 10.6.7.2.17]

10.6.7.2.17

Where carbon monoxide detection is monitored by a supervising station, the secondary power supply shall have sufficient capacity ~~to operate the~~ for both of the following:

(1) Operate the carbon monoxide detection system under quiescent load (system operating in a nonalarm condition) for a minimum of 24 hours~~ and, at~~

(2) At the end of ~~that period, shall be~~ the 24 hours, be capable of operating the carbon monoxide detection system and all notification appliances for 5 minutes.

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text utilized listed items in accordance with MOS section 3.3.1 Listed Items.

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
Organization: Fike Corporation
Affiliation: Fire Suppression Systems Association (FSSA)
Street Address:
City:
State:
Zip:
Submittal Date: Mon Jan 24 14:39:27 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5085-NFPA 72-2022
Statement: The Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text.

Public Input No. 488-NFPA 72-2022 [New Section after 10.6.8.5]

10.6.8.6* Power sources for remotely located equipment that are listed to UL 864, shall be acceptable for use for by the following listed life safety systems: Mass Notification Systems (MNS), Smoke Control Systems, Two-Way In-Building Wired Emergency Services Communications Systems, Two-Way Radio Communications Enhancement Systems, and Two-Way Emergency Communications Systems for Rescue Assistance, when specifically specified for use by the manufacturer of specific listed life safety systems.

A.10.6.8.6 Power sources for remote equipment may power devices servicing more than one type of listed life safety system, or devices servicing different life safety systems connected to a common network. For example, a UL 864 listed UPS may provide dedicated secondary power for a mix of listed life safety system devices (speakers, amplifiers, strobes, and other devices) distributed across a common network. By providing a common listing (UL 864) that can support service power requirements for other life safety system, listed to different life safety standards, a more commercially viable means of establishing safety and reliability is supported.

Statement of Problem and Substantiation for Public Input

Most UL life safety standards are derived from UL 864 as a gold standard for system design. However, it is impractical, time consuming, and costly for manufactures of power supplies to submit power sourcing products intended for general life safety system use, against all life safety system standards. A power source that is deemed safe enough (fire and shock) and reliable enough for a fire alarm system, has already passed testing necessary to utilize it for similar protection of life and property purposes. By creating a common listing option, unnecessary administrative overhead can be reduced, saving time and money. In this era of increasing regulations and challenging global supply chain challenges, consolidation of common regulations and administration improvements the availability of quality life safety equipment, which improves life safety overall.

Submitter Information Verification

Submitter Full Name: Michael Pallett
Organization: Pallett Corner Consulting
Street Address:
City:
State:
Zip:
Submittal Date: Mon May 30 08:16:07 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: The proposed change would be in conflict with 10.3.1, which requires equipment to be listed for the purpose for which it is used. The identified systems are covered under specific listing standards, other than UL 864.

Public Input No. 489-NFPA 72-2022 [New Section after 10.6.8.5]

10.6.8.7* Power sources for remotely located equipment, not listed to UL 864 shall be acceptable for use by the following listed life safety systems: Fire Alarm Systems, Evacuation Voice Fire Alarm Systems (EVAC), Mass Notification Systems (MNS), Smoke Control Systems, Two-Way In-Building Wired Emergency Services Communications Systems, Two-Way Radio Communications Enhancement Systems, and Two-Way Emergency Communications Systems for Rescue Assistance, when complying with all the following conditions:

(1) The specific power source and its use is specified by the listed life safety system manufacturer for specific listed life safety systems

(2) Power sources are listed to UL60950, UL60065, UL1310, or UL62368-1, or other standards acceptable to the authority having jurisdiction

(3) Power sources are dedicated for use with only listed life safety systems

(4) The system manufacture provides a risk analysis qualitatively or quantitatively identifying the risks, likelihoods, impacts & consequences, controls, and mitigations in accordance with 10.6.8.7.1

(5) Power source use is acceptable to the authority having jurisdiction based on the system manufacturer risk analysis

(6) Residual risks are accepted in writing by the facilities governing body (owners), permitting the installation of non-UL 864 listed power sources for life safety purposes.

A.10.6.8.7 It is not always commercially viable to list reliable infrastructure equipment to specific life safety standards. For example, a commercially available Power over Ethernet switch may meet all conditions required by a life safety standard, but not be listed because the market is too limited to support the costs associated with obtaining and maintaining the listing. Alternative approaches are required because: (1) supply chain challenges exist, (2) new models and technologies are rapidly brought to market with comparatively short product lifecycles (as compared to lifecycles of many life safety systems), (3) the potential number of combinations between customer preferred manufactures and models of equipment and various life safety systems is large, (4) the time and cost to obtain specific standard listings for specific makes and models is high, and (5) maintaining availability of specific third-party equipment makes and models over the life cycle of a life safety system is challenging or impossible.

It is important that any equipment that is considered for deployment as part of a life safety system infrastructure is vetted by the manufacturer of the life safety system for compatibility and a low risk of system compromise. That includes insuring that such equipment is listed for fire and shock safety, and that power sources are dedicated for life safety system use, and not shared with other potentially unlisted systems.

It is also important that after any risks have been identified, and all controls intended to reduce the risk are considered, that any residual risk is clearly identified and accepted by the system owner, and authority having jurisdiction. An example may be equipment that is used at a high altitude, may have its load capped at a reduced factor as a control to compensate for the environmental condition imposed. However, due to operation at higher altitude, the life expectancy of the equipment may still be reduced, and the stakeholders will need to accept that risk.

10.6.8.7.1* Power source risk analysis shall at a minimum identify risks based on the following considerations, in relation to any applicable corresponding requirements of UL 864:

(1) Accidental disconnection of power source from mains and accidental disconnection(s) to powered device(s)

(2) Method and security of connection to mains and backup power

(3) Methods of monitoring power supply for integrity

(4) Power source compromise due to a fan failure

(5) Power source damage due to jarring & impact

(6) Power sources with a mean time between failure (MTBF) of less than 100,000 hours

(7) Power source failure due to field wiring faults (short circuit and short to ground)

(8) Power source operation at ambient temperatures above or below manufactures environmental requirements

(9) Power source operation at humidity levels above or below manufactures environmental requirements

(10) Power supply operation at the facilities altitude (relative to sea level)

(11) Power supply operation with mains under voltages (below 85%), or over voltages (above 115%)

(12) Power source immunity to power mains supply transients of 2400V (80us) or less

(13) Power sources with a dielectric withstand voltage of less than 1,000 VAC or 1,414 VDC.

A.10.6.8.7.1 Power source equipment, designed and tested by the manufacturer to meet the listing requirements of UL 60950, UL 60065, UL 1310, or UL 62368-1, may also meet, or exceed the requirements of life safety standards, without ever being listed to those standards. However, established equipment manufactures that produce known reliable equipment often publish specifications that shows performance in relation to life safety standards such as UL 864. In conducting a risk analysis, consideration should focus on risks associated with product performance required by UL 864, but not required by the listed standard the product is tested to.

For example, in consideration of overall reliability, MFBF of 100,000 hours is consistent with requirements in UL 864 for use of hard drives in a fire alarm system. Also, since UL 864 references jarring, impact and fan failure, these life safety system requirements need to be considered in a risk analysis for life safety system use. Potentially additional risk mitigation such as specified enclosures may be applied to reduce risk of accidental damage due to impact of jarring.

Statement of Problem and Substantiation for Public Input

It is not always commercially viable to list safe and reliable third-party equipment to all applicable life safety standards. There is a great deal of administrative overhead, fees, and time required to secure, and then maintain UL life safety listings for third-party products. Manufactures who undertake such ventures can be forced to purchase large inventories of third-party products, to protect the investment in obtaining the UL listing. Stockpiles are also used to maintain availability of the specific UL listed version of a product, for the time when the product has become obsolete and replaced with a newer more advanced model, or just otherwise unavailable due to challenges in the supply chain.

For example, look at the Ethernet switches provided by Johnson Controls for their Metasys Smoke Control systems. In the document entitled: Metasys® System UL 864 10th Edition UUKL/ORD-C100-13 UUKLC Smoke Control System, updated July 15, 2020, it references Cisco Catalyst 2960 and Asante NU-RJ45SW1-0U which are no longer available for ordering. Then it references 24-Port Ethernet Switch: Cisco IE 4010-4S24P and related power supplies. Then the 16-Port Ethernet Switch: Cisco IE 4000-16T4G-E, and related power supplies. Then it references 5-Port Ethernet Switches: Contemporary Controls® CTRLink™ EISK5-100T, which is no longer available at release 8.1. All of these were UL 864 listed. Then it references Netgear FS105 5-Port Copper Switch, which is not required to be UL listed. Then it referenced 8-Port Ethernet Switch: Contemporary Controls® CTRLink™ EIS8-100T, which are UL 864 listed. Then it references 4-Port Ethernet Switch: Contemporary Controls CTRLink EIS6-100T/FT which is UL 864 listed. Then it references Single-Port Media Converter: Contemporary Controls® EIMK-100T/FT, which is UL Listed.

Obviously, this is complex for Johnson Controls and its customers. In most cases, Johnson Control supplies the products (that are still available, or available due to Johnson Controls pre-purchased

stockpiles), with additional enhancements, such as mounting and enclosures consistent with UL 864 requirements. Frequently Johnson Controls includes disclaimers that technical specifications of the third-party are subject to change with out notice, and warnings not to purchase product from third-party vendors but only from Johnson Controls. This demonstrates the risk assessment process already in action at Johnson Controls, and similar top-tier companies.

The potential to modernize life safety system equipment to available and established technologies is, in part, hampered by the commercial necessity to develop advanced technologies for applications across the entire marketplace. Responsible manufactures of already listed life safety systems such as Johnson Controls, are already doing the risk analysis work to utilize some of these advanced technologies. But the management overhead costs associated with obtaining and maintaining third-party equipment listings for a comparatively narrow vertical market, with increasingly complex customer demands, especially in times of supply chain upheaval, negatively impact the advancement and availability of solutions.

This risk analysis option would allow manufactures of listed life safety equipment to efficiently review and apply third party technologies that are needed to support availability and bring more advanced functionality to the market. For example, a system of devices supported on a Class N network and powered by Power over Ethernet (PoE) switches can bring forward new technological innovation if the deployment infrastructures can be more quickly, efficiently, and effectively evaluated and realized. This option will lower barriers for utilizing newer advanced technology by lowering cost compared to UL submissions based on each specific model of component and minor variation of component, especially as product availability changes over time.

It is often argued that it is a significant challenge for codes and standard on multi-year version cycles to keep pace with technological advancement. This proposal attempts to address one small aspect of this challenge.

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Submittal Date: Mon May 30 08:26:51 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: It is the intent of the committee to reinforce the requirement in 10.3.1 that equipment be listed for the purpose for which it will be used. When the Code was expanded to include other types of signaling systems, it necessarily incorporated other listing standards for those systems. The evaluation of the equipment should be under the purview of the testing laboratories, not the committee.

Public Input No. 185-NFPA 72-2022 [Section No. 10.6.9.1.6]

10.6.9.1.6

Monitoring shall not be required for the output of an engine-driven generator that is part of the secondary power supply, provided the generator is tested ~~weekly in~~ monthly in accordance with Chapter 14.

Statement of Problem and Substantiation for Public Input

Section 10.6.9.1.6 is inconsistent with Chapter 14 of NFPA 72 & NFPA 110. Section 10.6.9.1.6 requires generators to be tested weekly to avoid monitoring by the fire alarm system. Chapter 14 of NFPA 72 requires generators to be tested monthly, not weekly. NFPA 110 Section 8.4.1 requires weekly inspections and monthly testing. NFPA 110 Section A.8.4.1 discourages weekly testing due to long-term problems such as wet stacking. The proposed change aligns Section 10.6.9.1.6 with Chapter 14 of NFPA 72 and NFPA 110.

Submitter Information Verification

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Organization: The Boeing Company
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Submittal Date: Thu Mar 10 11:39:12 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5094-NFPA 72-2022
Statement: The text is revised to correlate with Chapter 14.

Public Input No. 252-NFPA 72-2022 [Section No. 10.6.10.1.3]

10.6.10.1.3*

~~Effective January 1, 2024, rechargeable~~ Rechargeable batteries for ~~the~~ secondary power ~~supply~~ supplies used in control units, ~~devices,~~ NAC extender panels, power supplies, data gathering panels, devices, and accessories shall be listed or component recognized by a nationally recognized testing laboratory.

Statement of Problem and Substantiation for Public Input

The effective date needs to be removed. Further clarification that remote power supplies, NAC panels, etc. are also included in this requirement.

Submitter Information Verification

Submitter Full Name: Rodger Reiswig
Organization: Johnson Controls
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Zip:
Submittal Date: Wed Apr 27 15:21:35 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5095-NFPA 72-2022
Statement: The effective date is removed because it will be past when the standard is issued. The text is revised to clarify that the paragraph refers to all rechargeable batteries used as secondary power throughout this code.

Public Input No. 116-NFPA 72-2022 [New Section after 10.6.11.7.1]

10.6.11.7.2

The separate storage battery and separate automatic charger shall not be used for any other purpose.

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text utilized 2 separate paragraphs for the 2 requirements.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 115-NFPA 72-2022 [Section No. 10.6.11.7.1]	directly related.

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
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Submittal Date: Mon Jan 24 14:49:43 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5256-NFPA 72-2022
Statement: The Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text.

Public Input No. 115-NFPA 72-2022 [Section No. 10.6.11.7.1]

10.6.11.7.1

A separate storage battery and separate automatic charger shall be provided for starting the engine-driven generator~~ and shall not be used for any other purpose~~ .

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text utilized 2 separate paragraphs for the 2 requirements.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 116-NFPA 72-2022 [New Section after 10.6.11.7.1]	
Public Input No. 117-NFPA 72-2022 [Section No. 10.6.11.7.2]	

Submitter Information Verification

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Submittal Date: Mon Jan 24 14:48:02 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5256-NFPA 72-2022

Statement: The Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text.

Public Input No. 117-NFPA 72-2022 [Section No. 10.6.11.7.2]

10.6.11.7.~~2~~ 3

The battery shall be sized in accordance with 5.6.4 of NFPA 110.

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text utilized 2 separate paragraphs for the 2 requirements, then this paragraph required renumbering.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 115-NFPA 72-2022 [Section No. 10.6.11.7.1]	Directly related.

Submitter Information Verification

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Submittal Date: Mon Jan 24 14:52:40 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5256-NFPA 72-2022

Statement: The Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text.

Public Input No. 119-NFPA 72-2022 [New Section after 10.10.4]

10.11.4.1

An audible notification appliance on a control unit, on multiple control units that are interconnected to form a system, or at a remote location, shall be permitted to have the same audible characteristics for all alerting functions.

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text utilized 2 separate paragraphs for the 2 requirements.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 118-NFPA 72-2022 [Section No. 10.10.4]	directly related.

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
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Submittal Date: Mon Jan 24 14:56:56 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5098-NFPA 72-2022
Statement: The Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text.

Public Input No. 120-NFPA 72-2022 [New Section after 10.10.4]

10.10.4.2

The audible notification appliance described in 10.10.4.1 is not limited to alarm, trouble, and supervisory, provided that the distinction between signals shall be by other means.

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text utilized 2 separate paragraphs for the 2 requirements.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 118-NFPA 72-2022 [Section No. 10.10.4]	directly related

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
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Submittal Date: Mon Jan 24 15:01:27 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5098-NFPA 72-2022

Statement: The Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text.

Public Input No. 118-NFPA 72-2022 [Section No. 10.10.4]

10.10.4*

~~An audible notification appliance on a control unit, on multiple control units that are interconnected to form a system, or at a remote location, shall be permitted to have the same audible characteristics for all alerting functions including, but not limited to, alarm, trouble, and supervisory, provided that the distinction between signals shall be by other means~~ Audible Characteristics .

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text utilized 2 separate paragraphs for the 2 requirements.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 119-NFPA 72-2022 [New Section after 10.10.4]	
Public Input No. 120-NFPA 72-2022 [New Section after 10.10.4]	

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Submittal Date: Mon Jan 24 14:55:02 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5098-NFPA 72-2022
Statement: The Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text.

Public Input No. 122-NFPA 72-2022 [New Section after 10.10.5]

10.10.5.1

Supervisory signals shall be distinctive in sound from other signals.

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text utilized 2 separate paragraphs for the 2 requirements.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 121-NFPA 72-2022 [Section No. 10.10.5]	directly related

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
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Submittal Date: Mon Jan 24 15:06:26 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5099-NFPA 72-2022

Statement: The Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text.

Public Input No. 123-NFPA 72-2022 [New Section after 10.10.5]

10.10.5.2

Supervisory signals sound shall not be used for any other purpose except as permitted in 10.10.4.

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text utilized 2 separate paragraphs for the 2 requirements.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 121-NFPA 72-2022 [Section No. 10.10.5]	directly related

Submitter Information Verification

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Submittal Date: Mon Jan 24 15:27:36 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5099-NFPA 72-2022

Statement: The Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text.

Public Input No. 121-NFPA 72-2022 [Section No. 10.10.5]

10.10.5*

Supervisory signals ~~shall be distinctive in sound from other signals, and their sound shall not be used for any other purpose except as permitted in 10~~ . ~~10.4.~~

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text utilized 2 separate paragraphs for the 2 requirements.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 122-NFPA 72-2022 [New Section after 10.10.5]	
Public Input No. 123-NFPA 72-2022 [New Section after 10.10.5]	

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
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Submittal Date: Mon Jan 24 15:04:48 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5099-NFPA 72-2022

Statement: The Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text.

Public Input No. 125-NFPA 72-2022 [New Section after 10.10.6]

10.10.6.1

Trouble signals required to indicate at the protected premises shall be indicated by distinctive audible signals.

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text utilized 3 separate paragraphs for the 3 requirements.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 124-NFPA 72-2022 [Section No. 10.10.6]	directly related

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
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Submittal Date: Mon Jan 24 15:33:03 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5101-NFPA 72-2022

Statement: The Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text.

Public Input No. 126-NFPA 72-2022 [New Section after 10.10.6]

10.10.6.2

Trouble signals described in 10.10.6.1 shall be distinctive from alarm signals.

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text utilized 3 separate paragraphs for the 3 requirements.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 124-NFPA 72-2022 [Section No. 10.10.6]	directly related

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
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Submittal Date: Mon Jan 24 15:36:20 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5101-NFPA 72-2022

Statement: The Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text.

Public Input No. 127-NFPA 72-2022 [New Section after 10.10.6]

10.10.6.3

Trouble signals described in 10.1.6.1 shall be permitted to be used for other purposes as permitted in 10.10.4.

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text utilized 3 separate paragraphs for the 3 requirements.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 124-NFPA 72-2022 [Section No. 10.10.6]	Directly related

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
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Submittal Date: Mon Jan 24 15:38:53 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5101-NFPA 72-2022

Statement: The Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text.

Public Input No. 124-NFPA 72-2022 [Section No. 10.10.6]

10.10.6

Trouble signals ~~required to indicate at the protected premises shall be indicated by distinctive audible signals, which shall be distinctive from alarm signals except as permitted in 10~~ . ~~10.4.~~

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text utilized 3 separate paragraphs for the 3 requirements.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 125-NFPA 72-2022 [New Section after 10.10.6]	
Public Input No. 126-NFPA 72-2022 [New Section after 10.10.6]	
Public Input No. 127-NFPA 72-2022 [New Section after 10.10.6]	

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
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Submittal Date: Mon Jan 24 15:30:21 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5101-NFPA 72-2022
Statement: The Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text.

Public Input No. 129-NFPA 72-2022 [New Section after 10.10.7]

10.10.7.1

Alarm evacuation signals shall be distinctive in sound from other signals.

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text utilized 3 separate paragraphs for the 3 requirements.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 128-NFPA 72-2022 [Section No. 10.10.7]	directly related.

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
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City:
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Submittal Date: Mon Jan 24 15:44:58 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution:

Statement: The Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text.

Public Input No. 130-NFPA 72-2022 [New Section after 10.10.7]

10.10.7.2

Alarm evacuation signals shall comply with the requirements of 18.4.2.

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text utilized 3 separate paragraphs for the 3 requirements.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 128-NFPA 72-2022 [Section No. 10.10.7]	directly related

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
Organization: Fike Corporation
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Zip:
Submittal Date: Mon Jan 24 15:47:23 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution:

Statement: The Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text.

Public Input No. 131-NFPA 72-2022 [New Section after 10.10.7]

10.10.7.3

Alarm evacuation signals described in 10.10.7.1 and 10.10.7.2 shall not be used for any other purpose.

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text utilized 3 separate paragraphs for the 3 requirements.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 128-NFPA 72-2022 [Section No. 10.10.7]	directly related

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
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Submittal Date: Mon Jan 24 15:49:18 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution:

Statement: The Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text.

Public Input No. 128-NFPA 72-2022 [Section No. 10.10.7]

10.10.7

Alarm evacuation signals ~~shall be distinctive in sound from other signals, shall comply with the requirements of 18~~ . ~~4.2, and their sound shall not be used for any other purpose.~~

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text utilized 3 separate paragraphs for the 3 requirements.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 129-NFPA 72-2022 [New Section after 10.10.7]	
Public Input No. 130-NFPA 72-2022 [New Section after 10.10.7]	
Public Input No. 131-NFPA 72-2022 [New Section after 10.10.7]	

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
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Submittal Date: Mon Jan 24 15:43:44 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution:
Statement: The Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text.

Public Input No. 133-NFPA 72-2022 [New Section after 10.10.8]

10.10.8.1

Pre-alarm signals shall be distinctive in sound from other signals.

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text utilized 2 separate paragraphs for the 2 requirements.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 132-NFPA 72-2022 [Section No. 10.10.8]	directly related.

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
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City:
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Submittal Date: Mon Jan 24 15:53:28 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5107-NFPA 72-2022

Statement: The Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text.

Public Input No. 134-NFPA 72-2022 [New Section after 10.10.8]

10.10.8.2

Pre-alarm signals described in 10.10.8.1 shall not be used for any other purpose except as permitted in 10.10.4.

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text utilized 2 separate paragraphs for the 2 requirements.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 132-NFPA 72-2022 [Section No. 10.10.8]	directly related

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
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Submittal Date: Mon Jan 24 15:55:04 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5107-NFPA 72-2022
Statement: The Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text.

Public Input No. 132-NFPA 72-2022 [Section No. 10.10.8]

10.10.8

Pre-alarm signals ~~shall be distinctive in sound from other signals, and their sound shall not be used for any other purpose except as permitted in 10~~ . ~~10.4.~~

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text utilized 2 separate paragraphs for the 2 requirements.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 133-NFPA 72-2022 [New Section after 10.10.8]	
Public Input No. 134-NFPA 72-2022 [New Section after 10.10.8]	

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
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Submittal Date: Mon Jan 24 15:51:41 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5107-NFPA 72-2022

Statement: The Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text.

Public Input No. 255-NFPA 72-2022 [Section No. 10.12.2]

10.12.2*

When an occupant notification alarm signal deactivation means is actuated, both audible and visual notification appliances shall be simultaneously deactivated.

Delete section or require notification appliances on the exterior and that they remain active until system is reset.

Statement of Problem and Substantiation for Public Input

The justification for original inclusion of the code language is flawed. Saying that a mixed message would be provided to those with a visual impairment therefore, we need to equally send that mixed message to everyone is not a valid reason to not allow the audible to be silenced and facilitate better fire ground operations.

Submitter Information Verification

Submitter Full Name: William Sullivan
Organization: [Not Specified]
Street Address:
City:
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Zip:
Submittal Date: Thu Apr 28 08:47:25 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: The proposed change would conflict with the ADA's requirement for equivalent notification. See the related annex material (A.10.12.2), which explains that exterior notification serves to warn against re-entry.

Public Input No. 352-NFPA 72-2022 [Section No. 10.14.7.4]

10.14.7.4

Subsequent activation of supervisory initiating devices in other building zones shall cause supervisory notification appliances to activate as required by the ~~system input~~ sequence of operation provided in narrative form, a logic diagram or an input input /output matrix.

Statement of Problem and Substantiation for Public Input

Provide consistent language among paragraphs related to the sequence of operation and add logic diagram as a means to depict the sequence of operation.

In addition to a narrative or an input/output matrix, a logic diagram is also a valid method to document the sequence of operation of a system. Sections of the Code that currently refer to documenting the sequence of operation only refer to a narrative description and/or an input/output matrix. Approvers of system design documentation are sometimes hesitant to approve or will not approve a design without a narrative or an input /output matrix even when a logic diagram is part of the design and provides more concise information, because NFPA 72 doesn't include a logic diagram as means to show the sequence of operation.

A logic diagram depicts the sequence of operation in easy-to-understand graphics, by interconnection of symbols representing the design of the entire system, not only showing the output for various inputs, but also the inter-working relationship between hardware and software within the system. A typical logic diagram will include internal components such as monitor modules, control modules, control relays, program addresses and custom messages for system inputs required for actuation of evacuation signals and ancillary functions for the intended sequence of operation. A logic diagram is particularly useful for addressable systems where an enormous amount of information representing the sequence of operation is required in large buildings or complex systems, whereas an input/output matrix is often confusing to produce and read (so many dots) when the system is large or complex. (NFPA 72 Figure A.14.6.1.1, for example, shows duplicate entries for 1st floor detectors, no 2nd floor detectors, and duct detectors that actuate alarm signals).

Older model addressable systems that require panel upgrades (CPU) for maintenance issues will come with firmware versions that won't likely support the older model software revision. In fact the older software revision software may require out of date laptop computer software (i.e., windows 98) to read it. The software media required to be controlled by NFPA 72 in cases such as this could be useless. A good logic diagram in a design is capable of providing the programming information necessary to restore the original sequence of operation because all programmable hardware is shown on the drawing with custom messages and program addresses.

A logic diagram is also a useful tool to convey detailed programming information to the programmer to ensure that site-specific software is configured to meet the owner's intended sequence of operation. Some facilities for example may be directed to implement software design control processes (i.e., NQA-1, Quality Assurance Requirements for Nuclear Facility Applications) that identify and document software design requirements including the operating system, function, interfaces, performance criteria, and design inputs of a computer program, such as site-specific fire alarm programs that can be created or modified. These software design requirements can be met with a logic diagram whereas an input/output matrix lacks interconnection detail between hardware and software.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 315-NFPA 72-2022 [Section No. 7.2.1]	

Public Input No. 315-NFPA 72-2022 [Section No. 7.2.1]

Submitter Information Verification

Submitter Full Name: Herbert Hurst
Organization: Savannah River Nuclear Solutio
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 24 16:17:03 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: Logic diagrams can be excessively long and complex for some systems/buildings, and would be difficult for all parties involved in development, review, and approval to read. Current language does not prohibit a logic diagram in addition to narrative form or input/output matrix.

Public Input No. 189-NFPA 72-2022 [New Section after 10.15.9.2]

TITLE OF NEW CONTENT

10.15.9.2 Reactivation of the audible and visible trouble signal shall not be required for supervising station alarm system installed in compliance with Chapter 26.

Statement of Problem and Substantiation for Public Input

Reactivation of the local audible and visible trouble signal every 24 hours as a reminder that the fire alarm system remains in a fault condition is not always necessary.

Some fire panels are provided with a trouble acknowledge notification that will continuously activate throughout a 24-hour period. For example, one manufacturer's trouble reactivation programming options all require a 60 second acknowledgement resound such that once the trouble is acknowledged at the panel for the first time, the panel automatically provides one chirp of the piezo and one blink of the trouble LED every 60 seconds for 24 hours. At 11:00 am each day the trouble signal will come back in until its acknowledged again and the cycle repeats. Panels with these limited options could potentially be installed in critical communication areas such as control rooms, hospitals, fire departments, etc.

Chapter 26 requires supervising stations to communicate immediately with designated person(s) to ascertain the reason for a trouble signal and to dispatch personnel to arrive within 4 hours to initiate maintenance, if necessary. The Chapter also requires supervising station fire alarm systems to report restoral signals to the supervising station of all alarm, supervisory, and trouble signals upon restoration of the activation. For any signal received by the supervising station that has not restored to normal condition within 24 hours of initial receipt, Chapter 26 requires that the signal is to be redisplayed to an operator as a non-restored signal and reported to the subscriber.

The requirements of Section 26.4.6.1.6.4, Trouble Signals, ensure that unrestored trouble signals for supervising station alarm systems are continuously reported to the owner, subscriber or designated person. The building occupant(s) often are not the owner or those responsible for the system, who need reminding that the system is in a fault condition. Occupants of the building may not have authorization to initiate service and must cope with a continuous interruption to business.

Submitter Information Verification

Submitter Full Name: Herbert Hurst
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Submittal Date: Tue Mar 22 16:29:48 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: The intent is to have trouble signals resound to increase the likelihood that the trouble will be resolved and to protect the occupant. Notification of the occupants will aid in securing

a response from the owner. The supervising station should be notified for resolution of the trouble signal.

Public Input No. 190-NFPA 72-2022 [Section No. 10.15.9.2]

10.15.9.~~2~~ 3

The audible and visible trouble signal associated with signaling the depletion or failure of the primary battery of a wireless system as required by 23.16.2.1 and 23.16.2.2 shall automatically resound every 4 hours or less until the depletion signal is restored to normal.

Statement of Problem and Substantiation for Public Input

Renumber Section 10.15.9.2 to 10.15.9.3 due to addition of adding new text within Section 10.15.9.2 per 189-NFPA 72-2025.

Submitter Information Verification

Submitter Full Name: Herbert Hurst
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Street Address:
City:
State:
Zip:
Submittal Date: Wed Mar 23 08:13:26 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: The intent is to have trouble signals resound to increase the likelihood that the trouble will be resolved and to protect the occupant. Notification of the occupants will aid in securing a response from the owner. The supervising station should be notified for resolution of the trouble signal.

Public Input No. 353-NFPA 72-2022 [Section No. 10.15.10.5]

10.15.10.5

Subsequent trouble signals shall cause trouble notification appliances to activate as required by the ~~system~~ sequence of operation provided in narrative form, a logic diagram, or an input/output matrix.

Statement of Problem and Substantiation for Public Input

Provide consistent language among paragraphs related to the sequence of operation and add logic diagram as a means to depict the sequence of operation.

In addition to a narrative or an input/output matrix, a logic diagram is also a valid method to document the sequence of operation of a system. Sections of the Code that currently refer to documenting the sequence of operation only refer to a narrative description and/or an input/output matrix. Approvers of system design documentation are sometimes hesitant to approve or will not approve a design without a narrative or an input /output matrix even when a logic diagram is part of the design and provides more concise information, because NFPA 72 doesn't include a logic diagram as means to show the sequence of operation.

A logic diagram depicts the sequence of operation in easy-to-understand graphics, by interconnection of symbols representing the design of the entire system, not only showing the output for various inputs, but also the inter-working relationship between hardware and software within the system. A typical logic diagram will include internal components such as monitor modules, control modules, control relays, program addresses and custom messages for system inputs required for actuation of evacuation signals and ancillary functions for the intended sequence of operation. A logic diagram is particularly useful for addressable systems where an enormous amount of information representing the sequence of operation is required in large buildings or complex systems, whereas an input/output matrix is often confusing to produce and read (so many dots) when the system is large or complex. (NFPA 72 Figure A.14.6.1.1, for example, shows duplicate entries for 1st floor detectors, no 2nd floor detectors, and duct detectors that actuate alarm signals).

Older model addressable systems that require panel upgrades (CPU) for maintenance issues will come with firmware versions that won't likely support the older model software revision. In fact the older software revision software may require out of date laptop computer software (i.e., windows 98) to read it. The software media required to be controlled by NFPA 72 in cases such as this could be useless. A good logic diagram in a design is capable of providing the programming information necessary to restore the original sequence of operation because all programmable hardware is shown on the drawing with custom messages and program addresses.

A logic diagram is also a useful tool to convey detailed programming information to the programmer to ensure that site-specific software is configured to meet the owner's intended sequence of operation. Some facilities for example may be directed to implement software design control processes (i.e., NQA-1, Quality Assurance Requirements for Nuclear Facility Applications) that identify and document software design requirements including the operating system, function, interfaces, performance criteria, and design inputs of a computer program, such as site-specific fire alarm programs that can be created or modified. These software design requirements can be met with a logic diagram whereas an input/output matrix lacks interconnection detail between hardware and software.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 315-NFPA 72-2022 [Section No. 7.2.1]	

Public Input No. 315-NFPA 72-2022 [Section No. 7.2.1]

Submitter Information Verification

Submitter Full Name: Herbert Hurst
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Street Address:
City:
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Zip:
Submittal Date: Tue May 24 16:28:30 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: Logic diagrams can be excessively long and complex for some systems/buildings, and would be difficult for all parties involved in development, review, and approval to read. Current language does not prohibit a logic diagram in addition to narrative form or input/output matrix.

Public Input No. 136-NFPA 72-2022 [New Section after 10.21.1]

10.21.2

Impairments to systems shall include out-of-service events.

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text utilized 2 separate paragraphs for the 2 requirements, then renumber subsequent paragraphs.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 135-NFPA 72-2022 [Section No. 10.21.1]	directly related

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
Organization: Fike Corporation
Affiliation: Fire Suppression Systems Association (FSSA)
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Zip:
Submittal Date: Mon Jan 24 16:00:56 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5140-NFPA 72-2022

Statement: The Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text

Public Input No. 135-NFPA 72-2022 [Section No. 10.21.1]

10.21.1

The system owner or the owner's designated representative shall be notified when a system or part thereof is impaired. ~~Impairments to systems shall include out-of-service events.~~

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text utilized 2 separate paragraphs for the 2 requirements, then renumber subsequent paragraphs.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 136-NFPA 72-2022 [New Section after 10.21.1]	
Public Input No. 137-NFPA 72-2022 [Section No. 10.21.2]	
Public Input No. 138-NFPA 72-2022 [Section No. 10.21.3]	
Public Input No. 139-NFPA 72-2022 [Section No. 10.21.4]	
Public Input No. 141-NFPA 72-2022 [Section No. 10.21.5]	
Public Input No. 143-NFPA 72-2022 [Section No. 10.21.6]	

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
Organization: Fike Corporation
Affiliation: Fire Suppression Systems Association (FSSA)
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State:
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Submittal Date: Mon Jan 24 15:57:57 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5140-NFPA 72-2022
Statement: The Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text

Public Input No. 572-NFPA 72-2022 [Section No. 10.21.1]

10.21.1

The system owner or the owner's designated representative shall be notified in writing within 8 hours when a system or part thereof is impaired. Impairments to systems shall include out-of-service events.

Statement of Problem and Substantiation for Public Input

Added additional text to clarify the importance of reporting system Impairments. Deficiencies must be reported to the Owner within 24 hours and in writing, but Impairments are required to be reported to the Owner but no requirement exists for the notification to be in writing or within a certain amount of time. This language would better match the requirements of section 14.2.2.2 and 14.2.2.3.2. An out of service impairment must be reported to the AHJ within 8 hours per 10.21.4, so it makes sense that the Owner would be notified within this time period as well.

Submitter Information Verification

Submitter Full Name: Larry Rietz
Organization: Jensen Hughes
Street Address:
City:
State:
Zip:
Submittal Date: Wed Jun 01 15:06:38 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: The method of communication should be situation dependent. In some cases, a conversation will be more efficient. Adopted model codes include requirements for impairment notification, and the proposed time limit might not be appropriate in all cases.

Public Input No. 137-NFPA 72-2022 [Section No. 10.21.2]

10.21.2 ~~2~~ 3

A record of the impairments shall be maintained by the system owner or the owner's designated representative for a period of 1 year from the date the impairment is corrected.

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text utilized 2 separate paragraphs for the 2 requirements, then renumber the subsequent paragraphs.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 135-NFPA 72-2022 [Section No. 10.21.1]	directly related.

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
Organization: Fike Corporation
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Street Address:
City:
State:
Zip:
Submittal Date: Mon Jan 24 16:04:40 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5140-NFPA 72-2022
Statement: The Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text

Public Input No. 138-NFPA 72-2022 [Section No. 10.21.3]

10.21.3 ~~–~~ 4 .

The supervising station shall report to the authority having jurisdiction any system for which required monitoring has been terminated.

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text utilized 2 separate paragraphs for the 2 requirements, subsequent paragraphs require renumbering.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 135-NFPA 72-2022 [Section No. 10.21.1]	directly related

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
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Street Address:
City:
State:
Zip:
Submittal Date: Mon Jan 24 16:07:08 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5140-NFPA 72-2022
Statement: The Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text

Public Input No. 139-NFPA 72-2022 [Section No. 10.21.4]

10.21.4 5 *

The service provider shall report to the authority having jurisdiction any system that is out of service for more than 8 hours.

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text utilized 2 separate paragraphs for the 2 requirements, thus renumbering the subsequent paragraphs.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 135-NFPA 72-2022 [Section No. 10.21.1]	directly related
Public Input No. 140-NFPA 72-2022 [Section No. A.10.21.4]	

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
Organization: Fike Corporation
Affiliation: Fire Suppression Systems Association (FSSA)
Street Address:
City:
State:
Zip:
Submittal Date: Mon Jan 24 16:09:13 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5140-NFPA 72-2022

Statement: The Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text

Public Input No. 141-NFPA 72-2022 [Section No. 10.21.5]

10.21.~~5~~ 6 *

Where required by the authority having jurisdiction, mitigating measures shall be implemented for the period that the system is impaired.

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text utilized 2 separate paragraphs for the 2 requirements, subsequent sections therefore renumbered.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 135-NFPA 72-2022 [Section No. 10.21.1]	directly related.
Public Input No. 142-NFPA 72-2022 [Section No. A.10.21.5]	

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Committee: SIG-FUN

Committee Statement

Resolution: FR-5140-NFPA 72-2022

Statement: The Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text

Public Input No. 143-NFPA 72-2022 [Section No. 10.21.6]

10.21.~~6~~ 7

The system owner or the owner's designated representative and the authority having jurisdiction shall be notified when an impairment period ends.

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text utilized 2 separate paragraphs for the 2 requirements, thus renumbering subsequent paragraphs.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 135-NFPA 72-2022 [Section No. 10.21.1]	directly related

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Committee: SIG-FUN

Committee Statement

Resolution: FR-5140-NFPA 72-2022
Statement: The Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text

Public Input No. 533-NFPA 72-2022 [Chapter 11]

Chapter 11 Cybersecurity

Executive summary: There has been a significant amount of interest and activity regarding cybersecurity. This led to the establishment of a new Chapter 11 in NFPA 72-2022, but most information was placed in Annex J .

~~1 * – Cybersecurity.~~

~~Where required by governing laws, codes, or standards, or other parts of this Code, cybersecurity shall be provided for~~

This proposal is intended to expound on the excellent work that was done by a number of great people for 72-2022 and to incorporate advances that have been made in technology since then.

Much of the literature that has been promulgated about cybersecurity asks questions, goes over what has happened at certain events, but does not provide some concrete guidance on how to implement at cybersecurity solution to Life Safety Systems. Chapter 11 is intended to provide actionable material that can be applied to systems.

Cybersecurity is constantly evolving. The changes in threats, technology and societies need to be assessed and when it make sense, applied to systems.

One size does not fit all. This has nothing to do with the system itself, meaning a small FACU that is monitoring a waterflow and tamper switch at a convenience store may not require any cybersecurity to be applied as determined by the risk assessment. That same FACU that is monitoring a waterflow and tamper switch that is installed at a secure data center with connection to an ISP may require a full barrier gateway (data firewall) and other protection as determined by the risk analysis.

Some people ask, “How do I know my system is cybersecure?” The response is all dependent on the risk. If the risks are assessed and the appropriate measures are implemented and maintained, then the system can be considered cybersecure at that time. A bad actor with enough time, talent and treasure will be eventually able to compromise virtually any system. The goal of Chapter 11 is to develop a reasonable approach to the probable, not all the possible cybersecurity risks that a system may be subjected to.

Note: This section is intended to replace and augment 72-2022 11.1, A11.1 and Annex J and in their entirety.

Chapter 11 – Cybersecurity (SEC)

11.1 Application

11.1.1 Where cybersecurity is required by a risk analysis, or by federal, state, or local regulations, systems shall be designed, installed, and maintained in accordance with the requirements of this chapter.

11.2 Purpose

11.2.1 To reduce unauthorized actuation or impairment of a fire alarm and signaling system,

cybersecurity risks shall be assessed.

11.3 Risk Analysis

11.3.1 A cybersecurity risk analysis shall be by stakeholders as to the nature and anticipated risks for which the system is it being designed.

11.3.1.1 The stakeholders shall consider both internal, external and maintenance risks to the system.

11.3.1.2 The risk analysis shall consider the number of persons, type of occupancy and perceived peril to the occupants, facilities, contents, systems, value, and operations.

11.4 Cybersecurity Levels

11.4.1 Cybersecurity levels shall be assigned to a system based on risk analysis.

11.4.2 Solution Levels (SL) are as follows:

11.4.2.1 SL 0. No specific network security features or operations are required

11.4.2.2 SL 1. This level correlates to Capability Security Levels (SL-C) of ISA/IEC 62443

11.4.2.3 SL 2. This level includes all of SL 1 and monitored physical tamper switches on all cabinets.

A11.4.2.3 This level correlates to Target Security Levels (SL-T) of ISA/IEC 62443

11.4.2.4 SL 3. This level includes all of SL2 requirements with the additional requirements that all bounded media shall be installed in continuous raceways

A11.4.2.4 This level correlates to Achieved Security Levels (SL-A) of ISA/IEC 62443

11.4.2.5 SL 4. This level includes all of SL 3 and the following:

11.4.2.5.1 All equipment enclosures that are not inside of a restricted access-controlled space shall be provided with tamper switches that are monitored by the system and automatically report to required on-site control locations that the enclosure has been accessed within 10 seconds.

11.4.2.5.1.1 Tamper signals shall be transmitted off-site if the site system is not continually monitored by properly trained on-premise staff.

11.4.2.5.2 All junction boxes or other pathway enclosures on bounded media that are not inside of a restricted access-controlled space shall be equipped with:

11.4.2.5.2.1 Tamper resistant fasteners and the enclosure covers equipped with frangible, tamper-evident seals or

11.4.2.5.2.2 Enclosure covers equipped with tamper switches that are monitored by the system and report to required on-site control and annunciation that the enclosure has been accessed within 10 seconds.

11.4.2.5.2.2.1 Tamper signals shall be transmitted off-site if the site system is not continually monitored by properly trained on-premise staff.

11.5 General

11.5.1 Bounded and unbounded data shall be protected with encryption in accordance with FPIS 140-3 or equivalent standard.

11.5.2 All unconnected or unmonitored physical data ports shall be protected by at least one or more of the following:

11.5.2.1 Physically protected from unauthorized access

11.5.2.2 Administratively shutdown

11.5.2.3 Require a password or other form of credentials to access the port

11.5.3 All service data devices shall be verified that they are equipped with and are operating on/with:

11.5.3.1 The latest verified operating systems with patches

11.5.3.2 Current antivirus/antimalware software and that antivirus scans have been done within the last 24 hours before the device is connected to the system being serviced

11.5.4 When any data connection is made from the system to an external network, the connection shall be protected by a barrier gateway or equivalent

11.6 Documentation

11.6.1 All system documentation shall be in accordance with this chapter and Chapter 7.

11.6.2 All system cybersecurity documentation shall be presented to and maintained by the facility owner.

11.6.3 All system cybersecurity documentation shall be delivered to the owner or the owner’s representative upon final acceptance of the system

11.7 System Credentials

11.7.1 System passwords and system access credentials, herein referred to as credentials, shall be configured and maintained in accordance with this section.

11.7.1.1 Credentials shall be changed from factory or default to an owner-defined credential when system is placed in service.

11.7.1.2 Credentials shall be stored in a secure location and not visible or accessible to unauthorized personnel.

11.7.1.3 Only authorized persons who have approved equipment shall be permitted to connect to the system to make any changes in the system.

11.8 Testing & Maintenance

11.8.1 All system testing and maintenance shall be in accordance with this Chapter and Chapter 14.

11.8.2 System risk assessment shall be reviewed and updated at least annually. Any required changes shall be implemented, tested and documented.

11.9 Cybersecurity Software Revisions

11.9.1 Changes made only for cybersecurity purposes to barrier gateways shall not require the functional test of the system that is otherwise required by 14.4.2.4 and 14.4.2.5 where all of the following are true:

(1) The changes do not affect the function of the executive or site-specific software.

(2) The integrity of the software update installed in the barrier gateway is verified to ensure complete and intact software delivery.

(3) The software is digitally signed by the manufacturer.

(4) The digital signature of the software is verified prior to the execution by the system or system components using secure signing keys.

11.9.2 Software changes to systems or system components made only for cybersecurity purposes shall be permitted to be made by remote access in accordance with Chapter 23.

11.10 Cybersecurity Standards

11.10.1 Systems shall be designed, installed, and maintained in accordance with one or more of the following cybersecurity standards:

(1) ANSI/ISA/IEC-62443 Global Automation Cybersecurity Standards Series

(2) NISTIR 8259 Foundational Cybersecurity Activities for IoT Device Manufactures

(3) NIST Framework for Improving Critical Infrastructure Cybersecurity

(4) UL 2900-2-3. Software Cybersecurity for Network-Connectable Products

(5) NISTIR 8286 Integrating Cyber And Enterprise Management

(6) Other standards accepted by the Authority Having Jurisdiction

11.11 Evidence of Compliance

11.11.1 Evidence of cybersecurity compliance shall include one or more of the following:

(1) Certification of compliance by a nationally recognized test laboratory

(2) Manufacturer certification for the specific type and brand of system provided

(3) An assessment of certification program acceptable to the authority having jurisdiction

11.11.2 Where a system is provided with a cybersecurity certificate document as evidence of compliance, the validity of the certificate shall be checked annually.

Annex Material

A.11.1.1 Cybersecurity convers site end-to-end equipment, software, firmware, tools,

installation

~~methods~~

, physical security of and access to equipment

,

and data pathways, testing

,

and maintenance.

A11.3 Network risk analysis typically includes addressing:

- Physical installation and protection of devices and pathways
- Access to devices and pathways
- External and internal accessibility to data
- Firewalls and other barrier gateways
- Interconnection to other site systems
- Anti-agent software, services and scanning
- Vulnerability assessments
- Downtime/impairment impacts
- Recovery procedures
- Legal impacts
- Threat assessment
- Failure modes
- Backups
- Disaster recovery
- Equipment backups
- Penetration testing
- Updating processes
- Password and credential management
- Maintenance and support operations and devices

- Local and remote service connections
- Documentation, access to documentation and maintenance of documentation
- Staff training and certifications
- Vendor support

Additional Proposed Changes

File Name	Description	Approved
NFPA_72-2025_Proposed_Chapter_11_053122ms3.docx	New Chapter 11 72-2025	

Statement of Problem and Substantiation for Public Input

Create actual code requirements for cybersecurity for Chapter 11 and replace Annex J

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Committee: SIG-FUN

Committee Statement

Resolution: FR-5188-NFPA 72-2022

Statement: Building systems are increasingly networked and/or accessible to public facing networks. Evidence has been identified in multiple case studies including the Fire Protection Research Foundation (FPRF) report. The FPRF conducted research that has identified gaps and assessed the appropriateness of the existing provisions and guidance related to cybersecurity.

Their report lists gaps that include:

*Configuration

–Interconnection of external systems (call centers, service providers) could allow for unauthorized activity if those external systems are not secure.

-Interconnection with other building systems with no access/restriction to prevent unintended communications.

-If one interconnected system is compromised and life safety is connected, it would be safe to assume that all are compromised.

*Implementation

-Systems that have remote access for maintenance or monitoring could introduce vulnerabilities if not properly implemented.

-Using secure gateways and configuring devices with only the necessary communication mechanisms can reduce exposure.

-The use of insecure wireless devices, or lack of wireless device authentication can be a weakness.

*Security

-Complexity of cybersecurity threats and solutions are increasing, making systems more vulnerable to highly sophisticated arson (terrorist) attacks, industrial espionage, and insider threats. Because of this, it is becoming more difficult to defend against these attacks and new solutions need to be implemented.

*Access

-Weak logical and physical access to 3rd party networks and systems.

-Easy to implant hardware or software devices into environment

The revised chapter addresses the above gaps by requiring industry accepted cybersecurity practices.

Public Input No. 490-NFPA 72-2022 [New Section after 11.1]

11.2* Life Safety Systems Cybersecurity Risk Analysis

Manufactures of life safety systems, including Emergency Communications Systems (ECS), shall provide system specific cybersecurity risk analyses for review by the authority having jurisdiction, building owners, systems installation personnel, and building owner's designated cybersecurity teams responsible for providing cybersecurity as required by 11.2.1 through 11.2.5.

11.2.1 Life safety systems include, but are not limited to, Fire Alarm Systems, Evacuation Voice Fire Alarm Systems (EVAC), Mass Notification Systems (MNS), Smoke Control Systems, Two-Way In-Building Wired Emergency Services Communications Systems, Two-Way Radio Communications Enhancement Systems, and Two-Way Emergency Communications Systems for Rescue Assistance.

11.2.2* Cybersecurity Risk Analysis shall comply with NIST SP 800-30 Rev 1.1 Guide for Conducting Risk Assessments, or another risk analysis framework acceptable to the authority having jurisdiction.

11.2.3* System risk analysis shall at a minimum qualitatively identify risks, likelihoods, impacts & consequences, controls, countermeasures, and mitigations for the following:

(1) Account Management, including default passwords, user account management, privileged account management, system, service, and operating system accounts, authentication and authorization, multi-factor authentication, session limitations, and access failed attempt retry rates & limits including account timeouts and lockout settings

(2) Personally Identifiable Information (PII) maintained by the system

(3) Data that may be considered confidential in nature such as floor plans, system wiring, IP addresses and ports, or diagnostic information

(4) Logging and audit trail management and access

(5) Software bill of materials (SBOM) as it relates to third party code modules, libraries, open-source software (OSS), and commercial off-the-shelf (COTS) software

(6) Software and firmware development methodologies and known system code vulnerabilities including deployed encryption methodologies

(7) Update and patch management

(8) Known cybersecurity vulnerabilities inherent to or affecting the system

(9) Configuration management

(10) Known or expected external system threats, including risks associated with malware, open communications ports, and configuration

(11) Potential insider threats due to intentional or unintentional access privilege abuse or leakage

(12) Common controls such as firewalls

(13) Components hosted on any non-life safety dedicated equipment such as shared use computers or the cloud

(14) System monitoring capabilities including monitoring for integrity, monitoring of system components and assets, and system status monitoring

(15) System communication pathway vulnerabilities including physical and wireless pathway susceptibility to disconnection, interception and insertion of data, and jamming.

11.2.4* Risk Analysis shall provide an executive summery and risk registers for review, and details for individual risks explaining the analysis and recommended practices, controls, countermeasures, and mitigations.

11.2.5* Risk Analysis shall be republished with applicable updates annually for the duration of the system's support lifecycle.

A.11.2 Life Safety Systems Cybersecurity Risk Analysis

Annex J, Guidelines for Cybersecurity, outline several cybersecurity standards, anyone of which could be applied to emergency communications systems, and maintained by manufactures. However, cybersecurity for emergency communications has many contexts and objectives for applying cybersecurity standards including:

(1) The security practices for the overall design, development, production, and service of life safety systems, in addition to the overall cybersecurity posture of the manufacturing company itself. For example, it does not matter how well a system is designed from a cybersecurity perspective, if the manufacturer does not adequately secure its own systems, threat actors can compromise products by installing covert back doors during initial development or development and distribution of code updates.

(2) The cybersecurity practices of the installation and maintenance company both during and after the installation, and the overall cybersecurity posture of the installation company itself. Again, as an example, it does not matter how secure the system is if the installation company does not do background checks, and an insider configures the systems insecurely on purpose, or uses passwords and credentials inappropriately, or sells them to other threat actors.

(3) The cybersecurity practices of the owner's organization, both during installation, and during maintenance over the systems lifecycle. This can be viewed from both the perspectives of the security of the infrastructure that the life safety system depends on, and the security posture of the organization that is using the system. Again, the system and infrastructure security is only as strong as the weakest link of the organization utilizing it. For example, it does not matter if the system cannot be accessed directly from the internet, if the inside network users are not well trained on cybersecurity practices and are susceptible to phishing campaigns. An attacker having taken advantage of a user to breach the network, may be able to directly access the life safety system to cause damage.

Which cybersecurity standard might apply is largely based on the objectives that are being sought. However, one commonality for all cybersecurity programs is the risk analysis. The risk analysis informs decision makers on the risks, likelihoods, impacts and consequences, potential controls and mitigations, business continuity and disaster recovery plans, and the residual risk that must be communicated to and ultimately accepted by the owner.

Since the risk analysis is a common requirement of all major cybersecurity programs, it lends itself as a common resource for all systems that are subject to cybersecurity threats.

Cybersecurity for life safety systems starts with the manufacturer. No other organization has as much insight into the system as the company that designed and built it. So, it is necessary that the manufactures make available an initial risk analysis to other stakeholders as a starting point for installation and maintenance companies to evaluate their own practices, as well as to the system owners, and those who are responsible for maintaining the security posture of the connected infrastructure.

The responsibility of making system risk analysis' available does not imply that the risk analysis must be

publicly published. Manufacturers must evaluate the sensitivity of the information contained and manage sharing of this information responsibly. If necessary, risk analysis can be provided through secure access, NDAs, watermarks, or other controls. However, as with all security related information, the risk analysis confidentiality cannot be the security measure itself. Good security utilizes a defense in depth approach. Security through obscurity is not a recommended practice.

A.11.2.2 There are many frameworks available for conducting a risk analysis. Some are created from an Enterprise Risk Management (ERM) perspective, such as the ISO 31000 Framework, while other focus on cybersecurity specifically such as the Common Weakness Risk Analysis Framework (CWRAF). NIST Special Publication 800-30, Revision 1, Guide for Conducting Risk Assessments is focused on information technology threats and the relationship with cybersecurity risks. The activities outlined include system characterization, threat identification, vulnerability identification, control analysis, likelihood determination, impact analysis, risk determination, control recommendations, and results documentation.

While this framework is specifically reference in the code because it is targeted, well understood, and publicly available, there are other recognized risk assessment frameworks that can be considered. For example, the manufacture may already have a robust enterprise risk management program enacted and is utilizing another framework to conduct their risk analysis. Or there may already be a third-party analysis' being conducted by organizations such as UL, that produce risk analysis' according to other standards. These can all be considered viable documents.

A.11.2.3 A cybersecurity risk analysis considers multiple avenues for exploitation:

(1) Many types of cybersecurity attacks attempt to compromise user and system accounts, especially privileged accounts. It is not uncommon to find networkable devices that have limited account management. Some devices are configured with built-in accounts that have no individual users (requiring multiple users to share passwords), no levels of access (effectively making any access privileged access), with no ability to apply permissions based on the users job functions, with no ability to disable specific accounts (necessary when users change jobs), and no centralized management of these accounts (accounts may be isolated to specific devices and must be managed one device at a time). It is not uncommon for devices to ship with common default account names and passwords (like admin, admin), that rely upon specific actions to change these accounts, that may never occur, and not be know to the system owners. In some cases, manufactures may implement backdoor access, for service convenience or recovery, that are fixed and if become known compromise any security until a system update can be installed that resolves the issue. There may be no password complexity requirements, and if access attempt limitations and automatic lockouts are not present, passwords can be defeated by brute force using password dictionaries.

(2) Personally Identifiable Information (PII) can include names, addresses, IP addresses, email addresses, telephone numbers, date of birth, credit card information, photographs and video that includes faces, biometric information including fingerprints, employment information, and medical data. PII is specifically protected by many laws internationally including the US Privacy Act, the EU General Data Protection Regulation (GDPR), and Canadian Personal Information Protection and Electronic Documents Act (PIPEDA). Cybersecurity breaches that compromise PII are subject to governmental, law enforcement, and often public reporting requirements. As such, if life safety systems maintain any PII data, special consideration must be given to risks associated with protecting it.

(3) There may be other data that a life safety system maintains that would be considered confidential. While security though obscurity is never a recommended practice, neither is a failure to protect information that may be used to aid in compromising a system. For example, information such as online documentation that reveals system maintenance status, locations and IP addresses of devices, wiring information such as network switch port numbers, riser information, cabling pathways, encryption keys or user credentials, if compromised could all be used to attack the life safety system or other related systems.

(4) Logs and audit trails are critically important to helping establish if a system is being attacked, and who the attacker may be, or the avenue of attack. For example, changes to a system configuration or software version may be legitimate or illegitimate. But unless it is known when and who made these changes, it can be very difficult to assess the intent. Also, if particular credentials are being utilized inappropriately, information contained in logs and audit trails are often necessary to properly respond. In this context, logs and audit trails themselves require appropriate protection. Individuals and account that have privileges that are being tracked, should not also have privileges to access and change the logs or audit trails.

(5) There is more emphasis on supply-chain attacks as multiple high-profile cybersecurity failures have highlighted the far-reaching impacts of exploiting these vulnerabilities. Software bills of material (SBOM) have gain increasing attention as a mechanism for products to identify components (especially third-party components) that are utilized in products used in critical infrastructure. This subject deserves attention in the risk analysis as SBOM requirements become more integrated into the commercial and regulatory landscapes.

(6) Software development systems are continuously evolving. For example, DevSecOps is the merging of security with DevOps. DevOps is integrated development and quality assurance, often automating the process of software development to a great extent. By implementing a DevSecOps development program, manufactures are committing to embedding security awareness, secure coding practices, and security focused testing into their product development lifecycle. These approaches can reveal previously unknown vulnerabilities due to past coding practices. Examples include SQL injection, buffer overflow, or deprecated encryption methodologies. MD5, a widely used hashing mechanism is an example of a compromised encryption technology.

(7) As security vulnerabilities are discovered, existing systems may be affected. Not only is it important for manufactures to provide solutions when vulnerabilities are discovered, but just as importantly to carefully manage the update and patch management infrastructure to ensure that corrections are available, have integrity, have not been modified or spoofed, and are applied successfully. This can be a challenging area for consideration for life safety systems as remote access and updates are impacted by other areas of the NFPA 72 code.

(8) When cybersecurity vulnerabilities are discovered, how is this information conveyed in a timely manner to the owners of life safety systems? It may be critically important that some corrective actions, controls, or countermeasures be deployed to minimize the risk to the system. This is especially the case when zero-day vulnerabilities are discovered. How will the manufacture maintain communications with other stakeholders to keep them informed of such developments?

(9) How life safety systems are configured are critical to their deployment and operation. Changes to configuration may be instigated after careful consideration, testing, approval, and documentation, such as would be required by a change control policy. But configuration changes may also be undertaken using an undocumented ad-hoc approach. Risks include how baseline configurations are maintained, such that a known tested and approved configuration may be restored should the system configuration be damaged, intentionally, or unintentionally.

(10) There are many avenues of cybersecurity attack that are widely used and very successful. Phishing is a good example, where authorized users are compromised revealing user accounts, passwords, and other critical information. One of the best defenses against phishing is education and training. To the extent that a life safety system is secure can be seen as a function of the training and proficiency that its users have - to resist phishing attacks.

(11) While training of any designer, developer, installer, maintenance person, or user on related aspects of life safety system design, deployment, and use is critical, so too is the due diligence that is performed to ensure the trustworthiness of these people. Background checks are an obvious example, but so too is the management of credentials, separation of duties, least privilege, need-to-know, and account maintenance. An authorized employee, who is terminated and disgruntled, may cause significant damage to systems if their access privileges are not promptly revoked.

(12) Many networks have protection such as Firewalls, Intrusion Detection Systems (IDS), and Intrusion Prevention Systems (IPS). Others such as Security Information Event Management (SEIM) systems collect log information from various systems to identify, warn, and take action when a cybersecurity event is detected. Risks to consider incorporate to what extent might these systems include or exclude monitoring of the life safety system, and to what extent is it possible for these systems to affect the operation of the life safety system.

(13) If is not unreasonable to expect more and more hosting of life safety systems, or partial hosting of life safety systems in the cloud. This is currently the case amongst many unlisted systems utilized for life safety purposes. The extent to which such systems may be compromised, and how vulnerable are their function to interruptions in communications must be considered.

(14) Many aspects of life safety systems are monitored for integrity. Reporting of integrity issues is a very desirable capability that can be provided by connected systems. Risks and protections for this reporting should be reviewed as part of a cybersecurity risk assessment. If there is an expectation that remote monitoring is working, local annunciations of trouble may be ignored if it is assumed that maintenance personnel are aware. How would these services be affected by a denial-of-service attack?

(15) Often, when confronting cybersecurity issues, the assumption made is that attacks are launched remotely from the internet. However, there are ample examples of attackers gaining physical access to a facility to enable an attack. Even a system that has no networking capability, with only a RS232 serial port can be connected to an RS232-to-Ethernet adapter. This may be intended benignly, as a way of enabling remote monitoring or remote service. But it is a risk that should be considered none-the-less. Take for example a building that is connected to a system via a wireless link. What risk are present if an attacker utilizes an inexpensive RF jammer to disrupt communications?

A.11.2.4 The structure of the risk analysis report requires both high level summaries (executive summery and risk registers) and detailed explanations. The high-level reviews are intended for stakeholder decision makers (such as managers, executives, code officials, and system and building owners) to understand the risks and some of the controls that may be employed to reduce the risk or mitigate the impact of an event. The high-level summaries may also include heat maps to help illustrate the levels of risk. The detailed analysis is intended to inform technical personnel involved with installing, maintaining, and securing the system's infrastructure regarding the vulnerabilities and deploying technical, physical, and administrative controls and other safeguards and countermeasures to reduce risk.

A.11.2.5 Fundamental to risk management, is the ongoing monitoring of the risk landscape as it applies to the deployment of life safety systems over time. As new vulnerabilities are discovered and new threats emerge, how risks are changing must be considered. Also, systems evolve over time such that some risks may be reduced or eliminated. It is important to update the risk analysis, so valuable resources are not consumed by controls that protect systems from risk that no longer exist. Just as the continued availability of spare parts is important for maintenance of a system, so to is the continued availability of up-to-date information to protect those systems.

Statement of Problem and Substantiation for Public Input

As systems become more and more connected, the implications for life safety are significant. For example, emerging technologies in augmented reality using heads-up displays can provide fire fighters with critical information to help enhance rescue efforts, while also improving prospects for their own safety in precarious circumstances. But a clear lesson we can take from the cybersecurity world, and society at large, is the need to protect the availability, confidentiality, and integrity of the information that is being utilized for any life safety purpose.

Cybersecurity includes a large and complex body of knowledge with many organizations, governmental, commercial, and associations involved in creating many standards, best practices, and resources aimed at many different types of organizations and systems, for many purposes. Additionally, the cybersecurity threat landscape is continuously and rapidly evolving. It is unlikely that

meaningful cybersecurity goals can be achieved by creating prescriptive cybersecurity requirements for life safety systems, that rely on codes and standards, with multi-year version cycles, while facing threats such as zero-day vulnerabilities. Likewise, attempting to specify one or a limited number of external cybersecurity standards, not developed specifically for life safety systems is problematic. Also, the limited cybersecurity experience that currently exists in the life safety equipment design, manufacturing, installation, maintenance, inspection and regulatory communities, means that compliance details of many cybersecurity standards is not well understood by the related stakeholders, nor by the ultimate owners. Some are product-based standards. Others are organizational based. Others are developmentally focused. Some are regulatory in nature. Some require third-party audits, while others are self-administered.

But one thing that they all have in common, is that they all require a risk analysis. This is a common fixture that can be utilized by all responsible manufactures to evaluate their products for cybersecurity risks. But most importantly, in the deployment of the systems, a manufacture provided risk analysis, serves to support the installation company, inspection, maintenance, all the way up the line to the owners. Each of these stakeholders, who likely will have different cybersecurity approaches or standards-based certification programs, can utilize the manufacture's risk analysis.

This proposal leverages the common ground, to feed the installation, inspection, and maintenance teams with relevant actionable information about the products that they are engaged with. It also serves the system owners and the providers of infrastructure for which ongoing security will ultimately depend. While some may argue that this is an additional burden for manufactures, others can argue that it is also in manufactures best interest. Providing a document that manufactures will need to create and maintain is a reasonable requirement, since no other stakeholder is in the position to have the detailed product insights necessary. Yet, in the spirit of minimal standards, it is less arduous than requiring compliance with an external standard that may not be in the best interest of the manufacture or the product. But since it is such a common component of any cybersecurity standard, it allows the different stakeholders to comply with this code, and satisfy a responsible level of cybersecurity control, that is supportive of each organization's individual cybersecurity program.

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Committee: SIG-FUN

Committee Statement

Resolution: The revised Chapter 11 is prescriptive rather than performance-based. The committee has incorporated some of the language from this PI into the annex. Additionally this has been used to modify A.7.3.6 in order to keep risk analysis documentation in one place in the code. The frameworks referenced in the revised Chapter 11 do provide guidance for cybersecurity risk analysis as applicable.

Public Input No. 272-NFPA 72-2022 [Section No. 11.1]

11.1* Cybersecurity.

~~Where required by governing laws, codes, or standards, or other parts of this Code, cybersecurity shall be provided for equipment,~~ Equipment, software, firmware, tools, installation methods, physical security of and access to equipment, data pathways, inspecting, testing, and maintenance shall comply with UL 2900-2-3 Standard for Software Cybersecurity for Network-Connectable Products, Part 2-3: Particular Requirements for Security and Life Safety Signaling Systems .

Statement of Problem and Substantiation for Public Input

Chapter 11 currently lacks any specific enforceable provisions. Mandating compliance with UL 2900-2-3 will provide a baseline from an existing accepted industry standard that addresses the cybersecurity issues covered within the scope of NFPA 72.

Submitter Information Verification

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Committee: SIG-FUN

Committee Statement

Resolution: FR-5188-NFPA 72-2022

Statement: Building systems are increasingly networked and/or accessible to public facing networks. Evidence has been identified in multiple case studies including the Fire Protection Research Foundation (FPRF) report. The FPRF conducted research that has identified gaps and assessed the appropriateness of the existing provisions and guidance related to cybersecurity.

Their report lists gaps that include:

*Configuration

–Interconnection of external systems (call centers, service providers) could allow for unauthorized activity if those external systems are not secure.

-Interconnection with other building systems with no access/restriction to prevent unintended communications.

-If one interconnected system is compromised and life safety is connected, it would be safe to assume that all are compromised.

*Implementation

-Systems that have remote access for maintenance or monitoring could introduce vulnerabilities if not properly implemented.

-Using secure gateways and configuring devices with only the necessary communication mechanisms can reduce exposure.

-The use of insecure wireless devices, or lack of wireless device authentication can be a weakness.

*Security

-Complexity of cybersecurity threats and solutions are increasing, making systems more vulnerable to highly sophisticated arson (terrorist) attacks, industrial espionage, and insider threats. Because of this, it is becoming more difficult to defend against these attacks and new solutions need to be implemented.

*Access

-Weak logical and physical access to 3rd party networks and systems.

-Easy to implant hardware or software devices into environment

The revised chapter addresses the above gaps by requiring industry accepted cybersecurity practices.

Public Input No. 384-NFPA 72-2022 [Section No. 11.1]

11.1* Cybersecurity.

11.1.1 Cybersecurity Provisions

Where required by governing laws, codes, or standards, or other parts of this Code, cybersecurity shall be

~~provided for~~
provided in accordance with Chapter 11, for equipment, software,

~~firmware,~~

~~tools~~

system support tools , installation methods, physical security of and access to equipment, data pathways, testing, and maintenance.

11.1.2 Connected Equipment Software Development

Equipment shall be developed by the manufacturer in accordance with one or more of the following secure software development lifecycle standards:

A) ANSI/ISA/IEC 62443 Security for Industrial and Automation Control Systems Series of standards

B) ANSI/CAN/UL 2900 Standard for Software Cybersecurity for Network-Connectable Products

C) NIST Cybersecurity Framework

E) NISTIR 8259, *Foundational Cybersecurity Activities for IoT Device Manufacturers*

D) Other equivalent standards acceptable to the authority having jurisdiction

11.1.3 Network Connectable Equipment Software Development and Production Environments

Development and production environments used to develop and manufacture connected equipment shall employ cybersecurity safeguards that are consistent with one or more of the following standards:

A) NIST Cybersecurity Framework

B) ISO/IEC 27001 Information Security Management

C) IASME Consortium Cyber Essentials

D) Other equivalent standards acceptable to the authority having jurisdiction

11.1.4 Security Levels for Network Connectable Equipment

All interfaces used to communicate with network connectable equipment shall be protected using the following minimum security levels:

A) For all non-internet facing wireless Interfaces and those non-internet facing wired interfaces that employ internet protocol, ANSI/ISA/IEC 62443-4-2/3-3 Security Level 2 or UL 2900 Security Level 2 or the equivalent level associated with 11.1.3 D.

B) For non-internet facing wired interfaces that do not employ internet protocol, ANSI/ISA/IEC 62443-4-2/3-3 Security Level 1 or UL 2900 Security Level 1 or the equivalent level associated with 11.1.3 D.

C) For all wired or wireless internet facing (WiFi) interfaces, ANSI/ISA/IEC 62443-4-2/3-3 Security Level 3 or UL 2900 Security Level 3 or the equivalent level associated with 11.1.3 D.

D) For all cellular, Bluetooth, and other wireless interfaces that do not employ internet protocol, IEC 62443-4-2/3-3 Security Level 2 or UL 2900 Security Level 2 or the equivalent level associated with 11.1.3 D.

11.1.5 Network Connectable Equipment Cybersecurity-related Software Updates

11.1.5.1 The equipment manufacturer shall evaluate all discovered cybersecurity threats at least quarterly and shall determine if a software update is required to maintain the cybersecurity level achieved in complying with 11.1.2 and 11.1.3 until the equipment is no longer be supported by the manufacturer.

11.1.5.2

11.1.5.3 The system installer shall provide the name and contact information of the system owner or their representative to the manufacturer at the time of system acceptance testing.

11.1.5.4 The equipment manufacturer shall notify the system owner or their representative, of all required software security updates required to maintain he cybersecurity level achieved in complying with 11.1.2, 11.1.3 and 11.1.4.

11.1.5.5 Software for network connectable devices shall be maintained by installing software security updates as required by the manufacturer to maintain the cybersecurity level achieved in complying with 11.1.2, 11.1.3 and 11.1.4.

11.1.5.6 Software security updates that are deemed necessary by the manufacturer for compliance with 11.1.3.2 shall be installed at least annually.

11.1.5.7 Cybersecurity-related only software updates applied to system elements that do not affect the system site-specific or system executive software shall not be required to comply with 14.4.2.

11.1.5.8 Cybersecurity-related only software changes to systems or system components shall be permitted to be made by remote access in accordance with Chapter 23.

11.1.6 Notification of Termination of Cybersecurity Update Support

The manufacturer shall notify the system owner or their representative, of the termination of software cybersecurity-related software update support required by 11.1.5 for any element of the system.

11.1.7 Cybersecurity for System Support Tools

A system support tool and the support tool interfaces shall comply with the requirements of 11.1.2 through 11.1.6.

11.1.8 Evidence of Compliance.

11.1.8.1 Evidence of cybersecurity compliance shall include one or more of the following:

(1) Certification of compliance by a nationally recognized test laboratory

(2) Manufacturer certification for the specific type and brand of system provided by the manufacturer

(3) An assessment or certification program acceptable to the authority having jurisdiction

11.1.8.2 The validity of cybersecurity certificates shall be verified annually by the person testing the system.

11.1.9 Documentation

The standards used and security levels employed in complying with Chapter 11 shall be

identified and included in the system documentation required by Chapter 7

Statement of Problem and Substantiation for Public Input

Building systems are increasingly networked and/ or accessible to public facing networks. Evidence has been identified in multiple case studies including the Fire Protection Research Foundation (FPRF) report. The FPRF conducted research that has identified gaps and assessed the appropriateness of the existing provisions and guidance related to cybersecurity.
Their report lists gaps that include:
• Configuration – • Interconnection of external systems (call centers, service providers) could allow for unauthorized activity if those external systems are not secure. • Interconnection with other building systems with no access/restriction to prevent unintended communications. • If one interconnected system is compromised and life safety is connected, it would be safe to assume that all are compromised.
• Implementation – • Systems that have remote access for maintenance or monitoring could introduce vulnerabilities if not properly implemented. • Using secure gateways and configuring devices with only the necessary communication mechanisms can reduce exposure. • The use of insecure wireless devices, or lack of wireless device authentication can be a weakness.
• Security – • Complexity of cybersecurity threats and solutions are increasing, making systems more vulnerable to highly sophisticated arson (terrorist) attacks, industrial espionage, and insider threats. Because of this, it is becoming more difficult to defend against these attacks and new solutions need to be implemented.
• Access – • Weak logical and physical access to 3rd party networks and systems. • Easy to implant hardware or software devices into environment
The attached public Input addresses the above gaps by requiring industry accepted cyber security practices.
There are several incidents that have already occurred and are referenced here:
https://www.smartcitiesdive.com/news/hackers-emergency-sirens-texas-cities/550639/
https://www.wired.com/2013/05/googles-control-system-hacked/
https://krebsonsecurity.com/2014/02/target-hackers-broke-in-via-hvac-company/

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 388-NFPA 72-2022 [Sections J.1, J.2, J.3, J.4, J.5, J.6]	
Public Input No. 390-NFPA 72-2022 [Section No. A.11.1]	

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Submittal Date: Wed May 25 16:59:57 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5188-NFPA 72-2022

Statement: Building systems are increasingly networked and/or accessible to public facing networks. Evidence has been identified in multiple case studies including the Fire Protection Research Foundation (FPRF) report. The FPRF conducted research that has identified gaps and assessed the appropriateness of the existing provisions and guidance related to cybersecurity.

Their report lists gaps that include:

*Configuration

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-Interconnection with other building systems with no access/restriction to prevent unintended communications.

-If one interconnected system is compromised and life safety is connected, it would be safe to assume that all are compromised.

*Implementation

-Systems that have remote access for maintenance or monitoring could introduce vulnerabilities if not properly implemented.

-Using secure gateways and configuring devices with only the necessary communication mechanisms can reduce exposure.

-The use of insecure wireless devices, or lack of wireless device authentication can be a weakness.

*Security

-Complexity of cybersecurity threats and solutions are increasing, making systems more vulnerable to highly sophisticated arson (terrorist) attacks, industrial espionage, and insider threats. Because of this, it is becoming more difficult to defend against these attacks and new solutions need to be implemented.

*Access

-Weak logical and physical access to 3rd party networks and systems.

-Easy to implant hardware or software devices into environment

The revised chapter addresses the above gaps by requiring industry accepted cybersecurity practices.

Public Input No. 469-NFPA 72-2022 [Section No. 11.1]

11.1* Cybersecurity.

Where required by governing laws, codes, or standards, or other parts of this Code, cybersecurity shall be provided for equipment, software, firmware, tools, installation methods, physical security of and access to equipment, data pathways, testing, and maintenance.

11.1* **Cybersecurity.**

11.1.1 Cybersecurity Provisions

Where required by governing laws, codes, or standards, or other parts of this Code, cybersecurity shall be provided in accordance with Chapter 11, for equipment, software,

~~firmware,~~

system support tools, installation methods, physical security of and access to equipment, data pathways, testing, and maintenance.

11.1.2 Connected Equipment Software Development

Equipment shall be developed by the manufacturer in accordance with one or more of the following secure software development lifecycle standards:

A) ANSI/ISA/IEC 62443 Security for Industrial and Automation Control Systems Series of standards

B) ANSI/CAN/UL 2900 Standard for Software Cybersecurity for Network-Connectable Products

C) NIST Cybersecurity Framework

E) NISTIR 8259, *Foundational Cybersecurity Activities for IoT Device Manufacturers*

D) Other equivalent standards acceptable to the authority having jurisdiction

11.1.3 Network Connectable Equipment Software Development and Production Environments

Development and production environments used to develop and manufacture connected equipment shall employ cybersecurity safeguards that are consistent with one or more of the following standards:

A) NIST Cybersecurity Framework

B) ISO/IEC 27001 Information Security Management

C) IASME Consortium Cyber Essentials

D) Other equivalent standards acceptable to the authority having jurisdiction

11.1.4 Security Levels for Network Connectable Equipment

All interfaces used to communicate with network connectable equipment shall be protected using the following minimum security levels:

A) For all non-internet facing wireless Interfaces and those non-internet facing wired interfaces that employ internet protocol, ANSI/ISA/IEC 62443-4-2/3-3 Security Level 2 or UL 2900 Security Level 2 or the equivalent level associated with 11.1.3 D.

B) For non-internet facing wired interfaces that do not employ internet protocol, ANSI/ISA/IEC 62443-4-2/3-3 Security Level 1 or UL 2900 Security Level 1 or the equivalent level associated with 11.1.3 D.

C) For all wired or wireless internet facing (WiFi) interfaces, ANSI/ISA/IEC 62443-4-2/3-3 Security Level 3 or UL 2900 Security Level 3 or the equivalent level associated with 11.1.3

D.

D) For all cellular, Bluetooth, and other wireless interfaces that do not employ internet protocol, IEC 62443-4-2/3-3 Security Level 2 or UL 2900 Security Level 2 or the equivalent level associated with 11.1.3 D.

11.1.5 Network Connectable Equipment Cybersecurity-related Software Updates

11.1.5.1 The equipment manufacturer shall evaluate all discovered cybersecurity threats at least quarterly and shall determine if a software update is required to maintain the cybersecurity level achieved in complying with 11.1.2 and 11.1.3 until the equipment is no longer be supported by the manufacturer.

11.1.5.2 The system installer shall provide the name and contact information of the system owner or their representative to the manufacturer at the time of system acceptance testing.

11.1.5.3 The equipment manufacturer shall notify the system owner or their representative, of all required software security updates required to maintain the cybersecurity level achieved in complying with 11.1.2, 11.1.3 and 11.1.4.

11.1.5.4 Software for network connectable devices shall be maintained by installing software security updates as required by the manufacturer to maintain the cybersecurity level achieved in complying with 11.1.2, 11.1.3 and 11.1.4.

11.1.5.5 Software security updates that are deemed necessary by the manufacturer for compliance with 11.1.3 shall be installed at least annually.

11.1.5.6 Cybersecurity-related only software updates applied to system elements that do not affect the system site-specific or system executive software shall not be required to comply with 14.4.2.

11.1.5.7 Cybersecurity-related only software changes to systems or system components shall be permitted to be made by remote access in accordance with Chapter 23.

11.1.6 Notification of Termination of Cybersecurity Update Support

The manufacturer shall notify the system owner or their representative, of the termination of software cybersecurity-related software update support required by 11.1.5 for any element of the system.

11.1.7 Cybersecurity for System Support Tools

A system support tool and the support tool interfaces shall comply with the requirements of 11.1.2 through 11.1.6.

11.1.8 Evidence of Compliance.

11.1.8.1 Evidence of cybersecurity compliance shall include one or more of the following:

(1) Certification of compliance by a nationally recognized test laboratory

(2) Manufacturer certification for the specific type and brand of system provided by the manufacturer

(3) An assessment or certification program acceptable to the authority having jurisdiction

11.1.8.2 The validity of cybersecurity certificates shall be verified annually by the person testing the system.

11.1.9 Documentation

The standards used and security levels employed in complying with Chapter 11 shall be identified and included in the system documentation required by Chapter 7.

~~J~~ A . 11. 1 ~~_ Introduction.~~ **Cybersecurity**

NFPA 72 **contains requirements for fire alarm and emergency communications systems that can be impacted by cybersecurity threats. Coordination of cybersecurity frameworks to protect the functions of systems is essential ~~in order~~ to prevent unwanted impacts on the system. Where the ~~system would need to interface~~ system interfaces with the internet or other systems ~~, it would make sense to provide~~ a secure firewall or gateway ~~. In any case, protection from cybersecurity threats is essential.~~**

~~The Technical Committee has determined that, in lieu of establishing requirements in Chapter 11 on cybersecurity at this time, it is appropriate to provide such guidance and framework in this annex. This allows the industry and the public the ability to gain experience with cybersecurity measures and provide constructive feedback for future editions of this Code.~~

should be provided to effect vital protection against cybersecurity threats.

~~J.2 Cybersecurity Provisions.~~

~~Where cybersecurity provisions are required, manufacturers, system designers, system installers, inspection personnel, testing personnel, and service technicians involved in the design, installation, testing, and maintenance of cybersecurity provisions should provide cybersecurity measures as outlined in this annex.~~

~~J~~ 11 . ~~4~~ 1.8 Evidence of Compliance.

Evidence of cybersecurity compliance ~~should~~ shall include one or more of the following:

(1) Certification of compliance by a nationally recognized test laboratory

(2) Manufacturer certification for the specific type and brand of system provided by the manufacturer

(3) An assessment or certification program acceptable to the authority having jurisdiction

~~J.5 Documentation.~~

~~All system-related documentation associated with the use of the selected standard(s) is included as part of the system documentation required by Chapter 7.~~

~~J.6 Cybersecurity Certificate Maintenance.~~

~~J.6.1 Certificate Validation.~~

~~Where a system is provided with a cybersecurity certificate document as evidence of compliance, the validity of the certificate should be checked~~

annually.

J.6.2 Cybersecurity Software Revisions.

Software changes made only for cybersecurity purposes to firewalls or barrier gateways should not require the functional test of the system that is otherwise required by 14.4.2.4 and 14.4.2.5 where all the following are true:

(1) The changes do not affect the function of the executive or site-specific software.

(2) The integrity of the software update installed in the firewall or barrier gateway is verified to ensure complete and intact software delivery.

(3) The software is digitally signed by the manufacturer.

(4) The digital signature of the software is verified prior to execution by the system or system components using secure signing keys.

Figure J.6.2

11.1.8.2 The validity of cybersecurity certificates shall be verified annually.

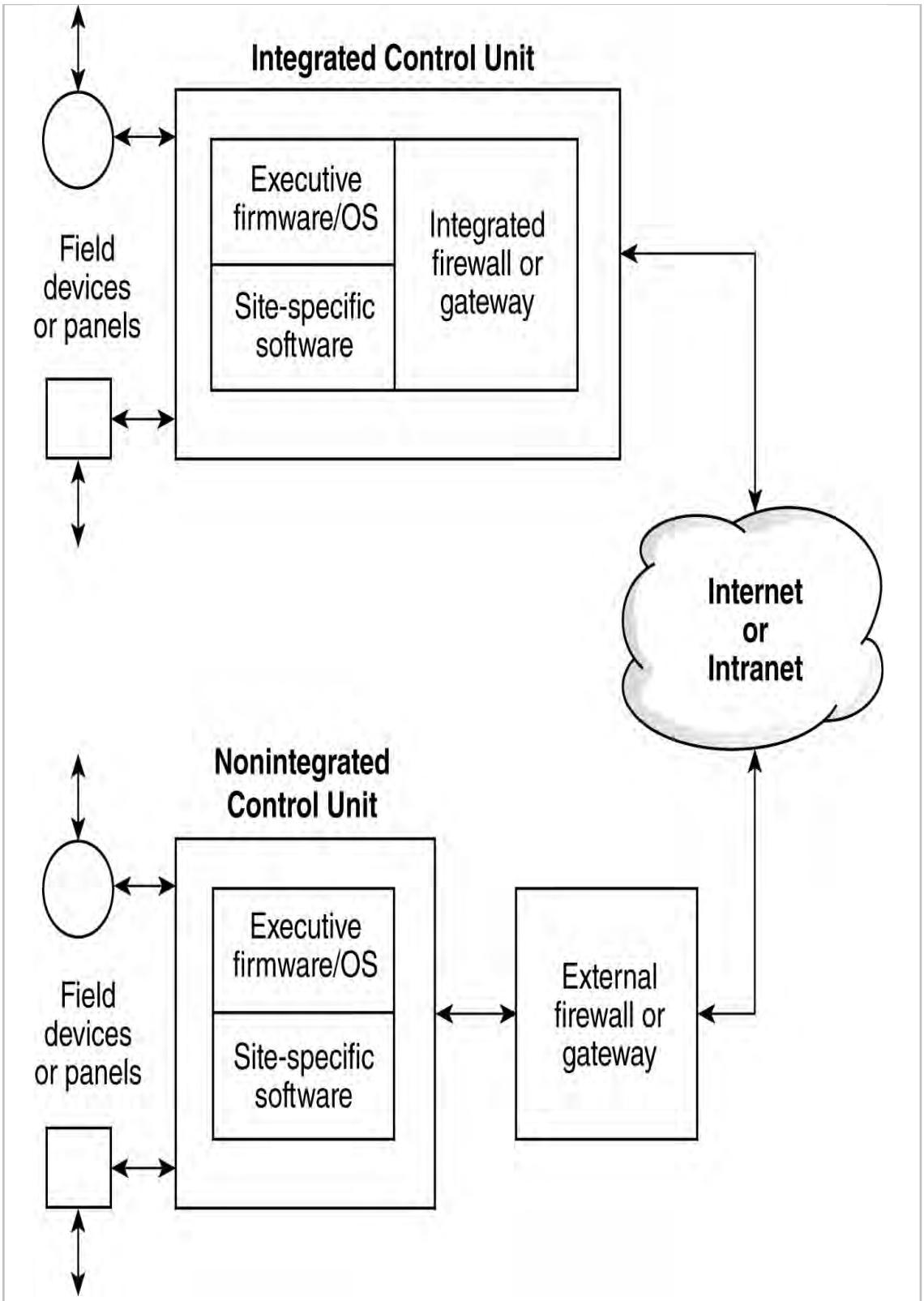
A.1.11.5.7 Figure A.1.11.5.7 depicts system typical firewall/gateway operation. Such functionality is not mandated but when deployed might take the form of physical hardware, firmware, or a combination of both. The firewall/gateway might be physically integrated into the control unit as shown in the integrated control unit graphic, or a separate device/service that interacts with the control unit as shown in the nonintegrated control unit. If the firewall/gateway is segmented from the executive firmware and site-specific software and if security software changes to the cybersecurity-related only software within the firewall/gateway are made, these changes should not require system retesting. If changes are made in a firewall/gateway that is not segmented from the executive firmware and site-specific software, the system should be retested.

Figure J

Figure A.

6.2 System

1.11.5.7 System Typical Firewall/Gateway Operation.



~~J~~

11.

~~6.3 Remote Software Changes.~~

~~Software~~

1.5.8 Cybersecurity-related only changes to systems or system ~~components made only for cybersecurity purposes should~~ components shall be permitted to be made by remote access in accordance with Chapter 23.

Additional Proposed Changes

File Name	Description	Approved
NFPA_72_BS_SB_11.1_comments.docx		

Statement of Problem and Substantiation for Public Input

Building systems are increasingly networked and/ or accessible to public facing networks. Evidence has been identified in multiple case studies including the Fire Protection Research Foundation (FPRF) report. The FPRF conducted research that has identified gaps and assessed the appropriateness of the existing provisions and guidance related to cybersecurity.
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- Configuration – • Interconnection of external systems (call centers, service providers) could allow for unauthorized activity if those external systems are not secure. • Interconnection with other building systems with no access/restriction to prevent unintended communications. • If one interconnected system is compromised and life safety is connected, it would be safe to assume that all are compromised.
- Implementation – • Systems that have remote access for maintenance or monitoring could introduce vulnerabilities if not properly implemented. • Using secure gateways and configuring devices with only the necessary communication mechanisms can reduce exposure. • The use of insecure wireless devices, or lack of wireless device authentication can be a weakness.
- Security – • Complexity of cybersecurity threats and solutions are increasing, making systems more vulnerable to highly sophisticated arson (terrorist) attacks, industrial espionage, and insider threats. Because of this, it is becoming more difficult to defend against these attacks and new solutions need to be implemented.
- Access – • Weak logical and physical access to 3rd party networks and systems. • Easy to implant hardware or software devices into environment

The attached public Input addresses the above gaps by requiring industry accepted cyber security practices.
There are several incidents that have already occurred and are referenced here.

- https://www.smartcitiesdive.com/news/hackers-emergency-sirens-texas-cities/550639/
- Researchers Hack Building Control System at Google Australia Office | WIRED
- Target Hackers Broke in Via HVAC Company – Krebs on Security

Submitter Information Verification

Submitter Full Name: Tim Knisely
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Submittal Date: Fri May 27 10:15:27 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5188-NFPA 72-2022

Statement: Building systems are increasingly networked and/or accessible to public facing networks. Evidence has been identified in multiple case studies including the Fire Protection Research Foundation (FPRF) report. The FPRF conducted research that has identified gaps and assessed the appropriateness of the existing provisions and guidance related to cybersecurity.

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*Access

-Weak logical and physical access to 3rd party networks and systems.

-Easy to implant hardware or software devices into environment

The revised chapter addresses the above gaps by requiring industry accepted cybersecurity practices.

Public Input No. 508-NFPA 72-2022 [Section No. 11.1]

11.1* Cybersecurity.

Where required by governing laws, codes, or standards, or other parts of this Code, cybersecurity shall be provided for equipment, software, firmware, tools, installation methods, physical security of and access to equipment, data pathways, testing, and maintenance.

11.1.1 Cybersecurity Provisions

Where required by governing laws, codes, or standards, or other parts of this Code, cybersecurity shall be provided in accordance with Chapter 11, for equipment software, system support tools, installation methods, physical security of and access to equipment, data pathways, testing, and maintenance.

11.1.2 Connected Equipment Software Development

Equipment shall be developed by the manufacture in accordance with one or more of the following secure software development life cycle standards:

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D) Other equivalent standards acceptable to the authority having jurisdiction

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C) For all wired or wireless internet facing (WIFI) interfaces, ANSI/ISA/IEC 62443-4-2/2-3 Security Level 3 or UL 2900 Security Level 3 or the equivalent level associated with 11.1.3.D.

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11.1.8.2 The validity of cybersecurity certificates shall be verified annually by the person testing the system

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The Standards used and security levels employed in complying with Chapter 11 shall be identified and included in the system documentation required by Chapter 7.

Statement of Problem and Substantiation for Public Input

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There are several incidents that have already occurred and are referenced here.
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- Researchers Hack Building Control System at Google Australia Office | WIRED
- Target Hackers Broke in Via HVAC Company – Krebs on Security

Submitter Information Verification

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Submittal Date: Mon May 30 16:21:44 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5188-NFPA 72-2022

Statement: Building systems are increasingly networked and/or accessible to public facing networks. Evidence has been identified in multiple case studies including the Fire Protection Research Foundation (FPRF) report. The FPRF conducted research that has identified gaps and assessed the appropriateness of the existing provisions and guidance related to cybersecurity.

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*Access

-Weak logical and physical access to 3rd party networks and systems.

-Easy to implant hardware or software devices into environment

The revised chapter addresses the above gaps by requiring industry accepted cybersecurity practices.

Public Input No. 230-NFPA 72-2022 [Section No. 12.5.2]

12.5.2 *

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Shared Pathway Level 1.

12.5.2.1 Level 1 pathways shall not be required to segregate life safety data from non–life safety data

~~, but~~

.

12.5.2.2 Level 1 pathways shall prioritize all life safety data over non–life safety data.

Statement of Problem and Substantiation for Public Input

This public input is submitted by the SIG-PRO Committee Manual of Style Task Group. Those participating in the task group were: Leonard Belliveau, Jr., Dwayne Griffith, Jacob Hemke, Jebediah Novak, Christian Pierson, and Donald Struck. The task group was charged with reviewing the text under the purview of the SIG-PRO committee for compliance with the 2004 Edition of the NFPA Manual of Style. The revised language included in this input is not intended to make technical changes, only editorial ones.

Section 1.8.3 of the Manual of Style requires sections containing more than one requirement to be divided into subsections.

Submitter Information Verification

Submitter Full Name: Jebediah Novak
Organization: Cedar Rapids Electrical JATC
Street Address:
City:
State:
Zip:
Submittal Date: Thu Apr 21 15:24:02 EDT 2022
Committee: SIG-PRO

Committee Statement

Resolution: FR-5004-NFPA 72-2022
Statement: This revision is made to comply with the MOS.

Section 1.8.3 of the Manual of Style requires sections containing more than one requirement to be divided into subsections

Public Input No. 578-NFPA 72-2022 [New Section after 12.6.16]

12.6.17 Where two or more control units are interconnected and where an integrated smoke control system is installed, the control units shall be interconnected using Class N or X circuits installed in metal raceway or metal armored cable.

Statement of Problem and Substantiation for Public Input

This requirement should be added to address the importance of the network connection between two control units providing smoke control operations for a building. Often a network fire alarm system is provided where inputs connected to one control unit (node) must activate outputs (like fans or dampers) connected to another control unit (node). In this case, it is critical to have redundancy in the network circuits like that provided with Class N or X pathways. Smoke control circuits must already be protected via metal conduit per IFC 909.12.2 (2021 edition and earlier editions). This requirement will negate the possibility of a single short, open, or ground from preventing smoke control operations from occurring.

Submitter Information Verification

Submitter Full Name: Larry Rietz
Organization: Jensen Hughes
Street Address:
City:
State:
Zip:
Submittal Date: Wed Jun 01 18:41:57 EDT 2022
Committee: SIG-PRO

Committee Statement

Resolution: This proposal needs to be in NFPA 92 as a primary source of requirements.

Public Input No. 342-NFPA 72-2022 [New Section after 14.1.5]

TITLE OF NEW CONTENT

14.1.6 This chapter does not require inspection, test, or maintenance personnel to verify the adequacy of the design of existing previously approved systems.

Statement of Problem and Substantiation for Public Input

Justification: This public input is in conjunction with public inputs 340 and 341 which intend to clarify that personnel performing inspection, testing, and maintenance of existing previously approved fire alarm and signaling systems are not, unless otherwise licensed or approved by the authority having jurisdiction, design professionals. And, that any observations that they make are not part of a design review. And, that during the course of their inspection, testing, and maintenance duties, they are not required to verify the adequacy of design of existing previously approved system installations.

- Public Input 340 clarifies the definition of an Observation to state that it is not part of a design review.
- Public Input 341 adds a definition for Design Review so that the addition to the definition of Observation is clear.
- Public input 342 borrows language from the 2020 NFPA 25 – section 1.1.3.1 to clarify that inspection, testing, and maintenance personal performing their duties for previously approved system installations are not required to confirm the adequacy of the design of the system.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 340-NFPA 72-2022 [Section No. 3.3.193]	
Public Input No. 341-NFPA 72-2022 [New Section after 3.3.75]	
Public Input No. 340-NFPA 72-2022 [Section No. 3.3.193]	
Public Input No. 341-NFPA 72-2022 [New Section after 3.3.75]	

Submitter Information Verification

Submitter Full Name: Jason Dupuis
Organization: Cintas Fire Protection F19
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 24 10:33:53 EDT 2022
Committee: SIG-TMS

Committee Statement

Resolution: The retroactivity clause in the Chapter 1 clarifies that inspection, test, or maintenance personnel are not required to verify the adequacy of the previously approved design in regards to the current code edition.

Public Input No. 204-NFPA 72-2022 [New Section after 14.2.1.4]

TITLE OF NEW CONTENT

14.2.1.5* The purpose of conducting periodic inspection and testing is not to determine the adequacy of the design of the system.

A.14.2.1.5 Personnel conducting inspection and testing procedures should meet the qualifications of 10.5.3.1, inspection personnel, or 10.5.3.2, testing personnel, and 10.5.3.4. These personnel do not typically have the expertise to meet the requirements of a system designer, 10.5.1. Section 14.2.1.5 clarifies that the purpose of periodic inspection and testing does not include a review of a system's adequacy. The inspection and testing personnel may have no idea what codes were in effect when the system was initially designed and installed. Or, if the system being inspected and tested met the in-effect codes at the time.

Statement of Problem and Substantiation for Public Input

The intent of the proposed language is intended to clarify that inspection and testing activities are not intended to verify a system's adequacy. While this is generally understood by many people in the fire alarm and signaling system industry, two recent legal cases I have been involved in prove that this lack of clarity exists. Firms providing inspection and testing services were the defendants in life-loss fires when they allegedly did not advise the system owner that the existing fire alarm systems being inspected/tested were not in compliance with NFPA 72 for device and/or appliance placement and performance. I believe the new section makes clear what is the intent of Chapter 14 as it applies to existing systems.

NFPA 25 already includes similar language (NFPA 25, 1.1.3.1). The retroactivity section, 1.4.1, does not provide the necessary clarity.

Submitter Information Verification

Submitter Full Name: Warren Olsen
Organization: Fire Safety Consultants, Inc.
Affiliation: Illinois Fire Inspectors Association
Street Address:
City:
State:
Zip:
Submittal Date: Sun Apr 10 21:02:28 EDT 2022
Committee: SIG-TMS

Committee Statement

Resolution: The current wording regarding periodic inspections, testing, and maintenance defines what to do, while this language defines what not to do. The current purpose defined in the code is sufficient.

Public Input No. 56-NFPA 72-2022 [Section No. 14.2.6.1]

14.2.6.1

Testing personnel shall be qualified and experienced in the specific arrangement and operation of a suppression system ~~(s)~~ and ~~a releasing function(s) and shall be~~ related releasing functions and cognizant of the hazards associated with inadvertent system discharge.

Statement of Problem and Substantiation for Public Input

PI submitted by Manual of Style Task Group to improve adherence to MOS requirements.

Submitter Information Verification

Submitter Full Name: Joe Scibetta
Organization: BuildingReports
Street Address:
City:
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Zip:
Submittal Date: Wed Jan 12 09:06:46 EST 2022
Committee: SIG-TMS

Committee Statement

Resolution: FR-5288-NFPA 72-2022
Statement: The Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text.

Public Input No. 569-NFPA 72-2022 [New Section after 14.2.10.1]

14.2.10.2*

Where a risk assessment demonstrates that a temporary condition will result in persnnel safety being compormised, inspection and testing activities shall be delayed when approved by the authority having jurisdiction.

A.14.2.10.2

Although some sprecific tasks might be delayed, it is not the intent that all activities under the scope of the standard be deferred. A reasonable attempt should be made to verity that the system is operational. Inspection and testing of equipment and components in other areas where personnel safety is not compromised should still be performed.

Statement of Problem and Substantiation for Public Input

The proposed language is the result of situations that arose during the COVID-19 public health emergency. Health care facilities, with staff that were not able to keep up with tasks directly related to patient care and with portions of the facility treating very contagious patients, were being told that they had to continue to meet ITM requirements. While one could argue that some other provisions could apply, those paragraphs are more related to industrial operations that include a planned shutdown. Post COVID-19, most health care facilities were not going to shutdown. The provision includes two restrictions: a risk assessment and approval from the AHJ. The Annex not is intended to guide facilities to a point in which only those tasks that directly impact personnel safety should be deferred. Note that this will not address the burden on staff what may already be over-committed but it does address the personnel safety issue to patients, staff, visitors, and contractors. In some instances, some of which were directed by regulators, contractors were not permitted into the health care facility due to the risk they might pose (if COVID-19 positive) to the patients and staff in the facility.

Similar language is likely to be included in the 2023 Edition of NFPA 25 (4.9.7.3 and A.4.9.7.3).

Submitter Information Verification

Submitter Full Name: William Koffel
Organization: Koffel Associates, Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Wed Jun 01 14:10:15 EDT 2022
Committee: SIG-TMS

Committee Statement

Resolution: Sections 14.3.2 and 14.3.4.1 already allow for a delay due to circumstances such as a pandemic, etc.

Public Input No. 187-NFPA 72-2022 [Section No. 14.3.1]

14.3.1*

Unless otherwise permitted by 14.3.2, visual inspections shall be performed in accordance with the schedules in Table 14.3.1 or more often if required by the authority having jurisdiction.

Table 14.3.1 Visual Inspection

Component	Initial Acceptance	Periodic Frequency	Method	Reference
1. All equipment	X	Annual	Ensure there are no changes that affect equipment performance. Inspect for building modifications, occupancy changes, changes in environmental conditions, device location, physical obstructions, device orientation, physical damage, and degree of cleanliness.	14.3.4; 14.3.5
2. Control equipment:				
(1) Fire alarm systems monitored for alarm, supervisory, and trouble signals			Verify a system normal condition.	
(a) Fuses	X	Annual		
(b) Interfaced equipment	X	Annual		
(c) Lamps and LEDs	X	Annual		
(d) Primary (main) power supply	X	Annual		
(e) Trouble signals	X	Semiannual		
(2) Fire alarm systems unmonitored for alarm, supervisory, and trouble signals			Verify a system normal condition.	
(a) Fuses	X	Weekly		
(b) Interfaced equipment	X	Weekly		
(c) Lamps and LEDs	X	Weekly		
(d) Primary (main) power supply	X	Weekly		
(e) Trouble signals	X	Weekly		
3. Reserved				
4. Supervising station alarm systems — transmitters			Verify location, physical condition, and a system normal condition.	
(1) Digital alarm communicator transmitter (DACT)	X	Annual		

	Component	Initial Acceptance	Periodic Frequency	Method	Reference
	(2) Digital alarm radio transmitter (DART)	X	Annual		
	(3) McCulloh	X	Annual		
	(4) Radio alarm transmitter (RAT)	X	Annual		
	(5) All other types of communicators	X	Annual		
5.	In-building fire emergency voice/alarm communications equipment	X	Semiannual	Verify location and condition.	
6.	Reserved				
7.	Reserved				
8.	Reserved				
9.*	Batteries				10.6.10
	(1) Valve-regulated lead-acid (VRLA) batteries				
	(a) General	X	N/A	Ensure month and year of manufacture is marked in the month/year format on each battery cell/unit. Verify tightness of battery connections. Inspect terminals for corrosion, excessive container/cover distortion, cracks in cell/unit or leakage of electrolyte. Replace any battery cell/unit if corrosion, distortion, or leakage is observed.	
	(b) Marking	N/A	Semiannual	Verify marking of the month/year of manufacture on each battery cell/unit. Replace any cell/unit if alarm equipment manufacturer's replacement date has been exceeded.	
	(2) Primary (dry cell) other than those used in low-power radio (wireless) systems in accordance with Chapter 23	X	Semiannual	Verify marking of the month/year of manufacture. Replace if alarm equipment/battery manufacturer's replacement date has been exceeded. Replacement date not to exceed 12 months. Verify tightness of connections. Inspect for corrosion or leakage. Replace any battery cell/unit if corrosion or leakage is observed.	

Component	Initial Acceptance	Periodic Frequency	Method	Reference
10. Reserved				
11. Remote annunciators	X	Semiannual	Verify location and condition.	
12. Notification appliance circuit power extenders	X	Annual	Verify proper fuse ratings, if any. Verify that lamps and LEDs indicate normal operating status of the equipment.	10.6
13. Remote power supplies	X	Annual	Verify proper fuse ratings, if any. Verify that lamps and LEDs indicate normal operating status of the equipment.	10.6
14. Surge protective devices	X	Semiannual	Verify location and condition.	
15. Reserved				
16. Optical fiber cable connections	X	Annual	Verify location and condition.	
17. Initiating devices			Verify location and condition (all devices).	
(1) Air sampling				
(a) General	X	Semiannual	Verify that in-line filters, if any, are clean.	17.7.4.6
(b) Sampling system piping and sampling ports	X	N/A	Verify that sampling system piping and fittings are installed properly, appear airtight, and are permanently fixed. Confirm that sampling pipe is conspicuously identified. Verify that sample ports or points are not obstructed.	17.7.4.6
(2) Duct detectors				
(a) General	X	Semiannual	Verify that detector is rigidly mounted. Confirm that no penetrations in a return air duct exist in the vicinity of the detector. Confirm the detector is installed so as to sample the airstream at the proper location in the duct.	17.7.6.5
(b) Sampling tube	X	Annual	Verify proper orientation. Confirm the sampling tube protrudes into the duct in accordance with system design.	17.7.6.5
(3) Electromechanical releasing devices	X	Semiannual		
(4) Fire extinguishing system(s) or	X	Semiannual		

	Component	Initial Acceptance	Periodic Frequency	Method	Reference
	suppression system(s) switches				
	(5) Manual fire alarm boxes	X	Semiannual		
	(6) Heat detectors	X	Semiannual		
	(7) Radiant energy fire detectors	X	Quarterly	Verify no point requiring detection is obstructed or outside the detector's field of view.	17.8
	(8) Video image smoke and fire detectors	X	Quarterly	Verify no point requiring detection is obstructed or outside the detector's field of view.	17.7.8; 17.8.5
	(9) Smoke detectors (excluding one- and two-family dwellings)	X	Semiannual		
	(10) Projected beam smoke detectors	X	Semiannual	Verify beam path is unobstructed.	
	(11) Supervisory signal devices	X	Semiannual		
	(12) Waterflow devices	X	Semiannual		
18.	Reserved				
19.	Combination systems			Verify location and condition (all types).	
	(1) Fire extinguisher electronic monitoring devices/systems	X	Semiannual		
	(2) Carbon monoxide detectors/systems	X	Semiannual		
20.	Alarm control interface and emergency control function interface	X	Semiannual	Verify location and condition.	
21.	Guard's tour equipment	X	Semiannual	Verify location and condition.	
22.	Notification appliances			Verify location and condition (all appliances).	
	(1) Audible appliances	X	Semiannual		
	(2) Loudspeakers	X	Semiannual		
	(3) Visual appliances				
	(a) General	X	Semiannual		18.5.5

Component	Initial Acceptance	Periodic Frequency	Method	Reference
(b) Candela rating	X	N/A	Verify the appliance candela rating marking or the FACU controlled candela rating agrees with the approved drawings.	18.5.5
23. Exit marking audible notification appliances	X	Semiannual	Verify location and condition.	
24. Reserved				
25. Two-way emergency communications systems	X	Annual	Verify location and condition.	
26. Reserved				
27. Supervising station alarm systems — receivers				
(1) Signal receipt	X	Daily	Verify receipt of signal.	
(2) Receivers	X	Annual	Verify location and normal condition.	
28. Public emergency alarm reporting system transmission equipment			Verify location and condition.	
(1) Publicly accessible alarm box	X	Semiannual		
(2) Auxiliary box	X	Annual		
(3) Master box				
(a) Manual operation	X	Semiannual		
(b) Auxiliary operation	X	Annual		
29. Reserved				
30. Mass notification system				
(1) Monitored for integrity			Verify a system normal condition.	
(a) Control equipment				
(i) Fuses	X	Annual		
(ii) Interfaces	X	Annual		
(iii) Lamps/LED	X	Annual		
(iv) Primary (main) power supply	X	Annual		
(b) Secondary power batteries	X	Annual		
(c) Initiating devices	X	Annual		

Component	Initial Acceptance	Periodic Frequency	Method	Reference
(d) Notification appliances	X	Annual		
(2) Not monitored for integrity; installed prior to adoption of the 2010 edition			Verify a system normal condition.	
(a) Control equipment				
(i) Fuses	X	Semiannual		
(ii) Interfaces	X	Semiannual		
(iii) Lamps/LED	X	Semiannual		
(iv) Primary (main) power supply	X	Semiannual		
(b) Secondary power batteries	X	Semiannual		
(c) Initiating devices	X	Semiannual		
(d) Notification appliances	X	Semiannual		
(3) Antenna	X	Annual	Verify location and condition.	
(4) Transceivers	X	Annual	Verify location and condition.	

Note: N/A = not applicable, no minimum requirement established.

*For other than VRLA or primary (dry) cell batteries, refer to the battery manufacturer's published instructions or IEEE 450, *Recommended Practice for Maintenance, Testing, and Replacement of Vented Lead-Acid Batteries for Stationary Applications*, for vented lead-acid batteries, and IEEE 1106, *Recommended Practice for Installation, Maintenance, Testing, and Replacement of Vented Nickel-Cadmium Batteries for Stationary Applications*, for nickel-cadmium batteries.

Additional Proposed Changes

File Name	Description	Approved
PI_4.3.1_Item_9._2_.pdf		
PI_4.3.1_Item_9._2_.docx		

Statement of Problem and Substantiation for Public Input

Primary batteries sold in the United States provide a shelf life expiration date rather than the date of manufacture. The shelf life expiration date is commonly referred to as a "use before" or "best if used by" date, etc., and is the date that the manufacturer cannot guarantee that full life is left. Shelf life varies based on chemistry. Many publications indicate that dry cell shelf life could be as little as 50 percent of its rating regardless of chemistry when stored at room temperature.

When the battery is installed, it should be verified to be fresh as possible to increase the likelihood it will last a full 12 months. Establishing a minimum shelf life of 60 percent adds assurance that the installed battery will not be installed at the end of its shelf life and will likely last 12 months. For example, an alkaline battery with a ten year shelf life has a "Use Before" date of JUL 28. Fifty percent of shelf life occurs JUL 23. The battery should not be installed after JUL 22. The installed date should be recorded so that it can be determined how long the battery has been installed.

Submitter Information Verification

Submitter Full Name: Herbert Hurst
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Affiliation: DOE SAVANNAH RIVER SITE
Street Address:
City:
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Zip:
Submittal Date: Tue Mar 22 15:14:52 EDT 2022
Committee: SIG-TMS

Committee Statement

Resolution: FR-5291-NFPA 72-2022

Statement: Primary batteries sold in the United States provide a shelf life expiration date rather than the date of manufacture. The shelf life expiration date is commonly referred to as a “use before” or “best if used by” date, etc., and is the date that the manufacturer cannot guarantee that full life is left. Shelf life varies based on chemistry. Many publications indicate that dry cell shelf life could be as little as 50 percent of its rating regardless of chemistry when stored at room temperature.

When the battery is installed, it should be verified to be fresh as possible to increase the likelihood it will last a full 12 months. Establishing a minimum shelf life of 60 percent adds assurance that the installed battery will not be installed at the end of its shelf life and will likely last 12 months. For example, an alkaline battery with a ten year shelf life has a “Use Before” date of JUL 28. Fifty percent of shelf life occurs JUL 23. The battery should not be installed after JUL 22. The installed date should be recorded so that it can be determined how long the battery has been installed.

Public Input No. 280-NFPA 72-2022 [Section No. 14.3.1]

14.3.1*

Unless otherwise permitted by 14.3.2, visual inspections shall be performed in accordance with the schedules in Table 14.3.1 or more often if required by the authority having jurisdiction.

Table 14.3.1 Visual Inspection -Add "Visual Inspection" at the top of each page of the table in front of where it currently says "Continued" - This would include what is at the top of page 89 and 90. This will make the tables easier to read and help prevent readers from confusing table 14.3.1 on visual inspections with 14.4.3.2 on testing.

Component	Initial Acceptance	Periodic Frequency	Method	Reference	
1. All equipment	X	Annual	Ensure there are no changes that affect equipment performance. Inspect for building modifications, occupancy changes, changes in environmental conditions, device location, physical obstructions, device orientation, physical damage, and degree of cleanliness.	14.3.4; 14.3.5	
2. Control equipment:	-	-	-	-	
-	(1) Fire alarm systems monitored for alarm, supervisory, and trouble signals	-	-		Ve sy no co
-	(a) Fuses	X	Annual	-	-
(b) Interfaced equipment	X	Annual	-	-	
-	(c) Lamps and LEDs	X	Annual	-	-
-	(d) Primary (main) power supply	X	Annual	-	-
-	(e) Trouble signals	X	Semiannual	-	-
-	(2) Fire alarm systems unmonitored for alarm, supervisory, and	-	-		Ve sy no co

Component	Initial Acceptance	Periodic Frequency	Method	Reference	
	trouble signals				
-	(a) Fuses	X	Weekly	-	-
(b) Interfaced equipment	X	Weekly	-	-	
-	(c) Lamps and LEDs	X	Weekly	-	-
-	(d) Primary (main) power supply	X	Weekly	-	-
-	(e) Trouble signals	X	Weekly	-	-
3. Reserved	-	-	-	-	
4. Supervising station alarm systems — transmitters	-	-			Verify location, physical condition, and a system normal condition.
-	(1) Digital alarm communicator transmitter (DACT)	X	Annual	-	-
(2) Digital alarm radio transmitter (DART)	X	Annual	-	-	
-	(3) McCulloh	X	Annual	-	-
-	(4) Radio alarm transmitter (RAT)	X	Annual	-	-
-	(5) All other types of communicators	X	Annual	-	-
5. In-building fire emergency voice/alarm communications equipment	X	Semiannual	Verify location and condition.	-	
6. Reserved	-	-	-	-	
7. Reserved	-	-	-	-	
8. Reserved	-	-	-	-	
9.* Batteries	-	-	-		
-	(1) Valve-regulated lead-acid (VRLA) batteries	-	-	-	-
-	(a) General	X	N/A	Ensure month and year of manufacture is	-

Component	Initial Acceptance	Periodic Frequency	Method	Reference	
				marked in the month/year format on each battery cell/unit. Verify tightness of battery connections. Inspect terminals for corrosion, excessive container/cover distortion, cracks in cell/unit or leakage of electrolyte. Replace any battery cell/unit if corrosion, distortion, or leakage is observed.	
-	(b) Marking	N/A	Semiannual	Verify marking of the month/year of manufacture on each battery cell/unit. Replace any cell/unit if alarm equipment manufacturer's replacement date has been exceeded.	-
-	(2) Primary (dry cell)	X	Semiannual	Verify marking of the month/year of manufacture. Replace if alarm equipment/battery manufacturer's replacement date has been exceeded. Replacement date not to exceed 12 months. Verify tightness of connections. Inspect for corrosion or leakage. Replace any battery cell/unit if corrosion or leakage is observed.	-
-	other than those used in low-power radio (wireless) systems in accordance with Chapter 23	-	-		-
10. Reserved	-	-	-	-	

	Component	Initial Acceptance	Periodic Frequency	Method	Reference	
11.	Remote annunciators	X	Semiannual	Verify location and condition.	-	
12.	Notification appliance circuit power extenders	X	Annual	Verify proper fuse ratings, if any. Verify that lamps and LEDs indicate normal operating status of the equipment.	10.6	
13.	Remote power supplies	X	Annual	Verify proper fuse ratings, if any. Verify that lamps and LEDs indicate normal operating status of the equipment.	10.6	
14.	Surge protective devices	X	Semiannual	Verify location and condition.	-	
15.	Reserved	-	-	-	-	
16.	Optical fiber cable connections	X	Annual	Verify location and condition.	-	
17.	Initiating devices	-	-			Verify location and condition (all devices).
-	(1) Air sampling	-	-	-		-
-	(a) General	X	Semiannual	Verify that in-line filters, if any, are clean.		17.7.4.6
-	(b) Sampling system piping and sampling ports	X	N/A	Verify that sampling system piping and fittings are installed properly, appear airtight, and are permanently fixed. Confirm that sampling pipe is conspicuously identified. Verify that sample ports or points are not obstructed.		17.7.4.6

Component	Initial Acceptance	Periodic Frequency	Method	Reference	
-	(2) Duct detectors	-	-	-	-
-	(a) General	X	Semiannual	Verify that detector is rigidly mounted. Confirm that no penetrations in a return air duct exist in the vicinity of the detector. Confirm the detector is installed so as to sample the airstream at the proper location in the duct.	17.7.6.5
-	(b) Sampling tube	X	Annual	Verify proper orientation. Confirm the sampling tube protrudes into the duct in accordance with system design.	17.7.6.5
-	(3) Electromechanical releasing devices	X	Semiannual	-	-
-	(4) Fire extinguishing system(s) or suppression system(s) switches	X	Semiannual	-	-
-	(5) Manual fire alarm boxes	X	Semiannual	-	-
-	(6) Heat detectors	X	Semiannual	-	-
-	(7) Radiant energy fire detectors	X	Quarterly	Verify no point requiring detection is obstructed or outside the detector’s field of view.	17.8
-	(8) Video image smoke and fire detectors	X	Quarterly	Verify no point requiring detection is obstructed or outside the detector’s field of view.	17.7.8; 17.8.5

Component	Initial Acceptance	Periodic Frequency	Method	Reference	
-	(9) Smoke detectors (excluding one- and two-family dwellings)	X	Semiannual	-	-
-	(10) Projected beam smoke detectors	X	Semiannual	Verify beam path is unobstructed.	-
-	(11) Supervisory signal devices	X	Semiannual	-	-
(12) Waterflow devices	X	Semiannual	-	-	
18. Reserved	-	-	-	-	
19. Combination systems	-	-			Verify location and condition (all types).
-	(1) Fire extinguisher electronic monitoring devices/systems	X	Semiannual	-	-
-	(2) Carbon monoxide detectors/systems	X	Semiannual	-	-
20. Alarm control interface and emergency control function interface	X	Semiannual	Verify location and condition.	-	
21. Guard's tour equipment	X	Semiannual	Verify location and condition.	-	
22. Notification appliances	-	-			Verify location and condition (all appliances).
-	(1) Audible appliances	X	Semiannual	-	-
(2) Loudspeakers	X	Semiannual	-	-	
-	(3) Visual appliances	-	-	-	-
-	(a) General	X	Semiannual	-	
-	(b) Candela rating	X	N/A	Verify the appliance candela rating marking or the	18.5.5

Component	Initial Acceptance	Periodic Frequency	Method	Reference	
				FACU controlled candela rating agrees with the approved drawings.	
23. Exit marking audible notification appliances	X	Semiannual	Verify location and condition.	-	
24. Reserved	-	-	-	-	
25. Two-way emergency communications systems	X	Annual	Verify location and condition.	-	
26. Reserved	-	-	-	-	
27. Supervising station alarm systems — receivers	-	-	-	-	
- (1) Signal receipt	X	Daily	Verify receipt of signal.	-	
- (2) Receivers	X	Annual	Verify location and normal condition.	-	
28. Public emergency alarm reporting system transmission equipment	-	-			Verify location and condition.
- (1) Publicly accessible alarm box	X	Semiannual	-	-	
- (2) Auxiliary box	X	Annual	-	-	
(3) Master box	-	-	-	-	
- (a) Manual operation	X	Semiannual	-	-	
(b) Auxiliary operation	X	Annual	-	-	
29. Reserved	-	-	-	-	
30. Mass notification system	-	-	-	-	
- (1) Monitored for integrity	-	-			Ve sy no co
- (a) Control equipment	-	-	-	-	

Component	Initial Acceptance	Periodic Frequency	Method	Reference	
-	(i) Fuses	X	Annual	-	-
(ii) Interfaces	X	Annual	-	-	
-	(iii) Lamps/LED	X	Annual	-	-
-	(iv) Primary (main) power supply	X	Annual	-	-
-	(b) Secondary power batteries	X	Annual	-	-
-	(c) Initiating devices	X	Annual	-	-
(d) Notification appliances	X	Annual	-	-	
-	(2) Not monitored for integrity; installed prior to adoption of the 2010 edition	-	-		Ve sy no co
-	(a) Control equipment	-	-	-	-
-	(i) Fuses	X	Semiannual	-	-
(ii) Interfaces	X	Semiannual	-	-	
-	(iii) Lamps/LED	X	Semiannual	-	-
-	(iv) Primary (main) power supply	X	Semiannual	-	-
-	(b) Secondary power batteries	X	Semiannual	-	-
-	(c) Initiating devices	X	Semiannual	-	-
(d) Notification appliances	X	Semiannual	-	-	
-	(3) Antenna	X	Annual	Verify location and condition.	-
(4) Transceivers	X	Annual	Verify location and condition.	-	

Note: N/A = not applicable, no minimum requirement established.

*For other than VRLA or primary (dry) cell batteries, refer to the battery manufacturer's published instructions or IEEE 450, *Recommended Practice for Maintenance, Testing, and Replacement of Vented Lead-Acid Batteries for Stationary Applications*, for vented lead-acid batteries, and IEEE 1106, *Recommended Practice for Installation, Maintenance, Testing, and Replacement of Vented Nickel-Cadmium Batteries for Stationary Applications*, for nickel-

cadmium batteries.

Statement of Problem and Substantiation for Public Input

Currently on pages 89 and 90 of the code, at the very top of the table, it reads "Table 14.3.1 Continued". I think it would be more clear to the user if the words "Visual Inspection" were included before "Continued" so that the user does not confuse Table 14.3.1 on visual inspections with 14.4.3.2 on testing.

The table heading on all pages of the table would read: "Table 14.3.1 Visual Inspection Continued"

PS, I heard a rumor that your committee is considering eliminating the tables in chapter 14. Please do not do this.

Submitter Information Verification

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Submittal Date: Thu May 12 16:31:37 EDT 2022
Committee: SIG-TMS

Committee Statement

Resolution: Formatting of tables that appear on multiple pages is not within the purview of the technical committee. This suggestion has been passed on to NFPA staff.

Public Input No. 38-NFPA 72-2021 [Section No. 14.3.1]

14.3.1*

Unless otherwise permitted by 14.3.2, visual inspections shall be performed in accordance with the schedules in Table 14.3.1 or more often if required by the authority having jurisdiction.

Table 14.3.1 Visual Inspection

~~(5) other communicators X~~

Component	Initial Acceptance	Periodic Frequency	Method	Reference
1. All equipment	X	Annual	Ensure there are no changes that affect equipment performance. Inspect for building modifications, occupancy changes, changes in environmental conditions, device location, physical obstructions, device orientation, physical damage, and degree of cleanliness.	14.3.4; 14.3.5
2. Control equipment:	-	-	-	-
-	(1) Fire alarm systems monitored for alarm, supervisory, and trouble signals	-	-	
-	(a) Fuses	X	Annual	-
(b) Interfaced equipment	X	Annual	-	-
-	(c) Lamps and LEDs	X	Annual	-
-	(d) Primary (main) power supply	X	Annual	-
-	(e) Trouble signals	X	Semiannual	-
-	(2) Fire alarm systems unmonitored for alarm, supervisory, and trouble signals	-	-	

	Component	Initial Acceptance	Periodic Frequency	Method	Reference	
-	(a) Fuses	X	Weekly	-		-
(b) Interfaced equipment		X	Weekly	-	-	
-	(c) Lamps and LEDs	X	Weekly	-		-
-	(d) Primary (main) power supply	X	Weekly	-		-
-	(e) Trouble signals	X	Weekly	-		-
3.	Reserved	-	-	-	-	
4.	Supervising station alarm systems — transmitters	-	-			Verify location, physical condition, and a system normal condition.
-	— (1) ~~Digital alarm communicator transmitter (DACT)~~	~~X~~	~~Annual~~	-		-
-	~~— (2) Digital alarm radio transmitter (DART)~~	~~X~~	~~Annual~~	-	-	
-	~~— (3) McCulloh~~	~~X~~	~~Annual~~	-	-	
-	~~— (4) Radio alarm transmitter (RAT)~~	~~X~~	~~Annual~~	-	-	
-	All	types of	communicators	X	Annual	-
5.	In-building fire emergency voice/alarm communications equipment	X	Semiannual	Verify location and condition.	-	
6.	Reserved	-	-	-	-	
7.	Reserved	-	-	-	-	
8.	Reserved	-	-	-	-	
9.*	Batteries	-	-	-		
-	(1) Valve-regulated lead-acid (VRLA) batteries	-	-	-	-	-

Component	Initial Acceptance	Periodic Frequency	Method	Reference	
-	(a) General	X	N/A	Ensure month and year of manufacture is marked in the month/year format on each battery cell/unit. Verify tightness of battery connections. Inspect terminals for corrosion, excessive container/cover distortion, cracks in cell/unit or leakage of electrolyte. Replace any battery cell/unit if corrosion, distortion, or leakage is observed.	-
-	(b) Marking	N/A	Semiannual	Verify marking of the month/year of manufacture on each battery cell/unit. Replace any cell/unit if alarm equipment manufacturer's replacement date has been exceeded.	-
-	(2) Primary (dry cell)	X	Semiannual	Verify marking of the month/year of manufacture. Replace if alarm equipment/battery manufacturer's replacement date has been exceeded.	-
-	other than those used in low-power radio (wireless) systems in accordance with Chapter 23	-	-	Replacement date not to exceed 12 months. Verify tightness of connections. Inspect for corrosion or leakage. Replace any battery cell/unit if corrosion or leakage is	-

Component	Initial Acceptance	Periodic Frequency	Method	Reference	
				observed.	
10. Reserved	-	-	-	-	
11. Remote annunciators	X	Semiannual	Verify location and condition.	-	
12. Notification appliance circuit power extenders	X	Annual	Verify proper fuse ratings, if any. Verify that lamps and LEDs indicate normal operating status of the equipment.	10.6	
13. Remote power supplies	X	Annual	Verify proper fuse ratings, if any. Verify that lamps and LEDs indicate normal operating status of the equipment.	10.6	
14. Surge protective devices	X	Semiannual	Verify location and condition.	-	
15. Reserved	-	-	-	-	
16. Optical fiber cable connections	X	Annual	Verify location and condition.	-	
17. Initiating devices	-	-			Verify location and condition (all devices).
-	(1) Air sampling	-	-	-	-
-	(a) General	X	Semiannual	Verify that in-line filters, if any, are clean.	17.7.4.6
-	(b) Sampling system piping and sampling ports	X	N/A	Verify that sampling system piping and fittings are installed properly, appear airtight, and are permanently fixed. Confirm that sampling pipe is conspicuously identified. Verify that sample ports	17.7.4.6

Component	Initial Acceptance	Periodic Frequency	Method	Reference	
				or points are not obstructed.	
-	(2) Duct detectors	-	-	-	-
-	(a) General	X	Semiannual	Verify that detector is rigidly mounted. Confirm that no penetrations in a return air duct exist in the vicinity of the detector. Confirm the detector is installed so as to sample the airstream at the proper location in the duct.	17.7.6.5
-	(b) Sampling tube	X	Annual	Verify proper orientation. Confirm the sampling tube protrudes into the duct in accordance with system design.	17.7.6.5
-	(3) Electromechanical releasing devices	X	Semiannual	-	-
-	(4) Fire extinguishing system(s) or suppression system(s) switches	X	Semiannual	-	-
-	(5) Manual fire alarm boxes	X	Semiannual	-	-
-	(6) Heat detectors	X	Semiannual	-	-
-	(7) Radiant energy fire detectors	X	Quarterly	Verify no point requiring detection is obstructed or outside the detector’s field of view.	17.8
-	(8) Video image smoke and fire detectors	X	Quarterly	Verify no point requiring detection is obstructed or outside the detector’s field of view.	17.7.8; 17.8.5

Component	Initial Acceptance	Periodic Frequency	Method	Reference	
-	(9) Smoke detectors (excluding one- and two-family dwellings)	X	Semiannual	-	-
-	(10) Projected beam smoke detectors	X	Semiannual	Verify beam path is unobstructed.	-
-	(11) Supervisory signal devices	X	Semiannual	-	-
(12) Waterflow devices	X	Semiannual	-	-	
18. Reserved	-	-	-	-	
19. Combination systems	-	-			Verify location and condition (all types)
-	(1) Fire extinguisher electronic monitoring devices/systems	X	Semiannual	-	-
-	(2) Carbon monoxide detectors/systems	X	Semiannual	-	-
20. Alarm control interface and emergency control function interface	X	Semiannual	Verify location and condition.	-	
21. Guard's tour equipment	X	Semiannual	Verify location and condition.	-	
22. Notification appliances	-	-			Verify location and condition (all appliance
-	(1) Audible appliances	X	Semiannual	-	-
(2) Loudspeakers	X	Semiannual	-	-	
-	(3) Visual appliances	-	-	-	-
-	(a) General	X	Semiannual	-	
-	(b) Candela rating	X	N/A	Verify the appliance candela rating marking or the	18.5.5

Component	Initial Acceptance	Periodic Frequency	Method	Reference	
				FACU controlled candela rating agrees with the approved drawings.	
23. Exit marking audible notification appliances	X	Semiannual	Verify location and condition.	-	
24. Reserved	-	-	-	-	
25. Two-way emergency communications systems	X	Annual	Verify location and condition.	-	
26. Reserved	-	-	-	-	
27. Supervising station alarm systems — receivers	-	-	-	-	
-	(1) Signal receipt	X	Daily	Verify receipt of signal.	-
-	(2) Receivers	X	Annual	Verify location and normal condition.	-
28. Public emergency alarm reporting system transmission equipment	-	-			Verify location and condition.
-	(1) Publicly accessible alarm box	X	Semiannual	-	-
-	(2) Auxiliary box	X	Annual	-	-
(3) Master box	-	-	-	-	
-	(a) Manual operation	X	Semiannual	-	-
(b) Auxiliary operation	X	Annual	-	-	
29. Reserved	-	-	-	-	
30. Mass notification system	-	-	-	-	
-	(1) Monitored for integrity	-	-		
-	(a) Control equipment	-	-	-	-

Component	Initial Acceptance	Periodic Frequency	Method	Reference	
-	(i) Fuses	X	Annual	-	-
(ii) Interfaces	X	Annual	-	-	
-	(iii) Lamps/LED	X	Annual	-	-
-	(iv) Primary (main) power supply	X	Annual	-	-
-	(b) Secondary power batteries	X	Annual	-	-
-	(c) Initiating devices	X	Annual	-	-
(d) Notification appliances	X	Annual	-	-	
-	(2) Not monitored for integrity; installed prior to adoption of the 2010 edition	-	-		
-	(a) Control equipment	-	-	-	-
-	(i) Fuses	X	Semiannual	-	-
(ii) Interfaces	X	Semiannual	-	-	
-	(iii) Lamps/LED	X	Semiannual	-	-
-	(iv) Primary (main) power supply	X	Semiannual	-	-
-	(b) Secondary power batteries	X	Semiannual	-	-
-	(c) Initiating devices	X	Semiannual	-	-
(d) Notification appliances	X	Semiannual	-	-	
-	(3) Antenna	X	Annual	Verify location and condition.	-
(4) Transceivers	X	Annual	Verify location and condition.	-	

Note: N/A = not applicable, no minimum requirement established.

*For other than VRLA or primary (dry) cell batteries, refer to the battery manufacturer's published instructions or IEEE 450, *Recommended Practice for Maintenance, Testing, and Replacement of Vented Lead-Acid Batteries for Stationary Applications*, for vented lead-acid batteries, and IEEE 1106, *Recommended Practice for Installation, Maintenance, Testing, and Replacement of Vented Nickel-Cadmium Batteries for Stationary Applications*, for nickel-

cadmium batteries.

Statement of Problem and Substantiation for Public Input

Listing different communicators adds confusion to the requirement when ultimately item #5 was already inclusive by stating "all other types of communicators" be annually inspected.

Submitter Information Verification

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Submittal Date: Tue Dec 21 10:35:47 EST 2021
Committee: SIG-TMS

Committee Statement

Resolution: The current code adequately reflects the types of communicators that a technician may come across, including legacy systems.

Public Input No. 393-NFPA 72-2022 [Section No. 14.4.2.2]

14.4.2.2

When an initiating device, notification appliance, or control relay is deleted, another device, appliance, or control relay on the circuit shall be ~~operated~~ functionally tested .

Statement of Problem and Substantiation for Public Input

Functionally tested was added for clarity and consistency with 14.4.2.1.

Submitter Information Verification

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Submittal Date: Wed May 25 18:06:07 EDT 2022
Committee: SIG-TMS

Committee Statement

Resolution: FR-5292-NFPA 72-2022
Statement: "Operated" was changed to "Functionally tested" for clarity and consistency with 14.4.2.1.

Public Input No. 471-NFPA 72-2022 [Section No. 14.4.2.2]

14.4.2.2

When an initiating device, notification appliance, or control relay is deleted, another device, appliance, or control relay on the circuit shall be ~~operated~~ functionally tested .

Additional Proposed Changes

File Name	Description	Approved
NFPA_72_BS_SB_14_4_2_comments.docx		

Statement of Problem and Substantiation for Public Input

Functionally tested was added for clarity and consistency with 14.4.2.1

Submitter Information Verification

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Committee: SIG-TMS

Committee Statement

Resolution: FR-5292-NFPA 72-2022
Statement: "Operated" was changed to "Functionally tested" for clarity and consistency with 14.4.2.1.

Public Input No. 510-NFPA 72-2022 [Section No. 14.4.2.2]

14.4.2.2

When an initiating device, notification appliance, or control relay is deleted, another device, appliance, or control relay on the circuit shall be ~~operated~~ functionally tested .

Statement of Problem and Substantiation for Public Input

Functionally tested was added for clarity and consistency with 14.4.2.1

Submitter Information Verification

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Committee: SIG-TMS

Committee Statement

Resolution: FR-5292-NFPA 72-2022
Statement: "Operated" was changed to "Functionally tested" for clarity and consistency with 14.4.2.1.

Public Input No. 57-NFPA 72-2022 [Section No. 14.4.2.4]

14.4.2.4

When changes are made to site-specific software, ~~the following~~ 14.4.2.4.1 through 14.4.2.4.3 shall apply:

14.4.2.4.1

All functions known to be affected by the change, or identified by a means that indicates changes, shall be 100 percent tested.

~~In addition, 10 percent~~

14.4.2.4.2

Ten percent of initiating devices that are not directly affected by the change, up to a maximum of 50 devices,

~~also~~
shall be tested and correct system

~~operation shall be verified~~
operation verified .

14.4.2.4.3

A revised record of completion in accordance with 7.5.6 shall be prepared to reflect these changes.

Statement of Problem and Substantiation for Public Input

PI submitted by Manual of Style Task Group to improve adherence to MOS requirements.

Submitter Information Verification

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Submittal Date: Wed Jan 12 09:14:10 EST 2022
Committee: SIG-TMS

Committee Statement

Resolution: FR-5302-NFPA 72-2022
Statement: The language for subsection (2) was simplified in keeping with the Manual of Style.

Public Input No. 179-NFPA 72-2022 [Section No. 14.4.3.2]

14.4.3.2*

Systems and associated equipment shall be tested according to Table 14.4.3.2.

Table 14.4.3.2 Testing

-	Component	Initial Acceptance	Periodic Frequency	Method
1. All equipment	X	-		See Table 14.3.1.
2. Control unit	-	-	-	
-	(1) Functions	X	Annually	Verify correct receipt of alarm, supervisory, and trouble signals (inputs); operation of evacuation signals and auxiliary functions (outputs); circuit supervision, including detection of open circuits and ground faults; and power supply supervision for detection of loss of ac power and disconnection of secondary batteries.
-	(2) Fuses	X	Annually	Verify rating and supervision.
-	(3) Interfaced equipment	X	Annually	Verify integrity of single or multiple circuits providing interface between two or more control units. Test interfaced equipment connections by operating or simulating operation of the equipment being supervised. Verify signals required to be transmitted at the control unit.
-	(4) Lamps and LEDs	X	Annually	Illuminate lamps and LEDs.
-	(5) Primary (main) power supply	X	Annually	Disconnect all secondary (standby) power and test under maximum load, including all alarm appliances requiring simultaneous operation. Reconnect all secondary (standby) power at end of test. Test redundant power supplies separately.

-	Component	Initial Acceptance	Periodic Frequency	Method
3.	Alarm control unit trouble signals	-	-	-
-	(1) Audible and visual	X	Annually	Verify operation of control unit trouble signals. Verify ring-back feature for systems using a trouble-silencing switch that requires resetting.
-	(2) Disconnect switches	X	Annually	If control unit has disconnect or isolating switches, verify performance of intended function of each switch. Verify receipt of trouble signal when a supervised function is disconnected.
-	(3) Ground-fault monitoring circuit	X	Annually	If the system has a ground detection feature, verify the occurrence of ground-fault indication whenever any installation conductor is grounded.
-	(4) Transmission of signals to off-premises location	X	Annually	Actuate an initiating device and verify receipt of alarm signal at the off-premises location.
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
4. Supervising station alarm systems — transmission equipment	-	-	-	
-	(1) All equipment	X	Annually	[a]Test all system functions and features in accordance with the equipment manufacturer's published instructions for correct operation in conformance with the applicable sections of Chapter 26.
			-	-
			-	-
-	(2) Digital alarm communicator transmitter (DACT)	X	Annually	Except for DACTs installed prior to adoption of the 2013 edition of NFPA 72 that are connected to a telephone line

-	Component	Initial Acceptance	Periodic Frequency	Method
				(number) that is also supervised for adverse conditions by a derived local channel, ensure connection of the DACT to two separate means of transmission.
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(3) Digital alarm radio transmitter (DART)	X	Annually	Disconnect the primary telephone line. Verify transmission of a trouble signal to the supervising station by the DART occurs within 4 minutes.
-	(4) McCulloh transmitter	X	Annually	Actuate initiating device. Verify production of not less than three complete rounds of not less than three signal impulses each by the McCulloh transmitter.

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			(2) Ground	
			-	-
			-	-
			-	-
			-	-
			(2) Ground	
			-	-
-	(5) Radio alarm transmitter (RAT)	X	Annually	Cause a fault between elements of the transmitting equipment. Verify indication of the fault at the protected premises, or transmission of trouble signal to the supervising station.
-	(6) Performance-based technologies	X	Annually	Perform tests to ensure the monitoring of integrity of the transmission technology and technology path. Where shared communications equipment is used as permitted by 26.6.3.12, provided secondary (standby)

	Component	Initial Acceptance	Periodic Frequency	Method
				power sources shall be tested in accordance with Table 14.4.3.2, item 7, 8, or 9, as applicable.

-	Component	Initial Acceptance	Periodic Frequency	Method
5.	Emergency communications equipment	-	-	-
-	(1) Amplifier/tone generators	X	Annually	Verify correct switching and operation of backup equipment.
-	(2) Call-in signal silence	X	Annually	Operate/function and verify receipt of correct visual and audible signals at control unit.
-	(3) Off-hook indicator (ring down)	X	Annually	Install phone set or remove phone from hook and verify receipt of signal at control unit.
-	(4) Phone jacks	X	Annually	Visually inspect phone jack and initiate communications path through jack.
-	(5) Phone set	X	Annually	Actuate each phone set and verify correct operation.
-	(6) System performance	X	Annually	Operate the system with a minimum of any five handsets simultaneously. Verify voice quality and clarity.
6.	Engine-driven generator	X	Monthly	If an engine-driven generator dedicated to the system is used as a required power source, verify operation of the generator and transfer switch in accordance with NFPA 110 by the building owner.
7.	Emergency power supply system/stored-emergency power supply system (EPSS/SEPSS)	X	Annually	If an EPSS/SEPSS dedicated to the system is used as a required power source, verify by the building owner operation of the

-	Component	Initial Acceptance	Periodic Frequency	Method	
			EPSS/SEPSS in accordance with NFPA 111.		
8.	Secondary (standby) power supply[c]	X	Annually	Disconnect all primary (main) power supplies and verify the occurrence of required trouble indication for loss of primary power. Measure or verify the system's standby and alarm current demand using the equipment manufacturer's data and verify the battery's rated capacity exceeds the system's power demand, including the safety margin. Operate general alarm systems a minimum of 5 minutes and emergency voice communications systems for a minimum of 15 minutes. Reconnect primary (main) power supply at end of test.	
9.	VRLA battery and charger[d]	-	-		Prior t conduc any ba testing by the conduc test, th system softwa stored volatile memo protec loss.

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(1) Temperature test	X	Semiannually	Upon initially opening the cabinet door, measure the internal ambient temperature of the enclosure. Measure the temperature of each battery cell/unit at the negative terminal with an infrared thermometer. Replace any battery cell/unit if its temperature is greater than 18°F (10°C) above the measured internal ambient temperature of the enclosure.
-	(2) Charger test[e]	X	Semiannually	With the battery fully charged and connected to the charger, measure the voltage across the battery with a voltmeter. Verify the voltage is within the battery/alarm equipment manufacturer's recommendations. If the voltage is outside of the specified limits, either adjust the charger to within limits or replace the charger.
-	(3) Cell/Unit voltage test	X	Semiannually	With the battery fully charged and connected to the charger, measure the voltage of each cell/unit with a voltmeter. Replace the battery when any cell/unit measures a voltage less than 13.26 volts.
-	(4) Ohmic test[f]	X	N/A	When the battery is installed, establish a baseline ohmic value for each battery cell/unit or where available use baseline ohmic values provided by the battery or test equipment

-	Component	Initial Acceptance	Periodic Frequency	Method	
				manufacturer. In either case record the base line ohmic value on each battery cell/unit.	
		-	-	-	Semia
-	(5) Replacement/Load test[g]	-		3 years	Replac battery condu test of battery capaci test th based

-	Component	Initial Acceptance	Periodic Frequency	Method	
					manuf specifi for a d rate of or mor applyi curren indicat the se hourly discha contin until th termin voltag decrea the en voltag specifi the manuf Recor test du and ca the ba capaci includi adjust ambie tempe Repla battery capaci less th equal or at th sched interva battery capaci less th
10.	Public emergency alarm reporting system — wired system	X	Daily	Manual tests of the power supply for public reporting circuits shall be made and recorded at least once during each 24-hour period. Such tests shall include the following:	

-	Component	Initial Acceptance	Periodic Frequency	Method

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
11.	Remote annunciators	X	Annually	Verify the correct operation and identification of annunciators. If provided, verify the correct operation of annunciator under a fault condition.
12.	Reserved	-	-	-
13.	Reserved	-	-	-
14.	Wireless communications	X	Annually	Test per the manufacturer's published instructions.
15.	Conductors — metallic	-	-	-
-	(1) Stray voltage	X	N/A	Test all installation conductors with a volt/ohmmeter to verify that there are no stray (unwanted) voltages between installation conductors or between installation conductors and ground. Verify the maximum allowable stray voltage does not exceed 1 volt ac/dc, unless a different threshold is specified in the manufacturer's published instructions for the installed equipment.
-	(2) Ground faults	X	N/A	Test all installation conductors, other than those intentionally and permanently grounded, for isolation from ground per the installed equipment manufacturer's published instructions.
-	(3) Short-circuit faults	X	N/A	Test all installation conductors, other than those intentionally connected together, for conductor-to-

-	Component	Initial Acceptance	Periodic Frequency	Method	
				conductor isolation per the manufacturer's published instructions for the installed equipment. Also test these same circuits conductor-to-ground.	
-	(4) Loop resistance	X	N/A	With each initiating and indicating circuit installation conductor pair short-circuited at the far end, measure and record the resistance of each circuit. Verify that the loop resistance does not exceed the limits specified in the manufacturer's published instructions for the installed equipment.	
-	(5) Circuit integrity	X	N/A	For initial and reacceptance testing, confirm the introduction of a fault in any circuit monitored for integrity results in a trouble indication at the fire alarm control unit. Open one connection at not less than 10 percent of the initiating devices, notification appliances and controlled devices on every initiating device circuit, notification appliance circuit, and signaling line circuit. Confirm all circuits perform as indicated in Sections 23.5, 23.6, and 23.7.	
	-	-	N/A	Annually	For pe testing each i device notifica applia circuit, signali circuit correc

-	Component	Initial Acceptance	Periodic Frequency	Method	
					indicat the co unit. C all circ perfor indicat Sectio 23.6, a 23.7.
16.	Nonmetallic pathways	-	-	-	
-	(1) Optical fiber cables	X	N/A	Test the transmission characteristics of optical fibers by the use of an optical power meter or by an optical time domain reflectometer used to measure the relative power loss of the line. Test result data must meet or exceed ANSI/TIA 568.3, *Optical Fiber Cabling and Components Standard*, related to fiber-optic lines and connection/splice losses and the control unit manufacturer's published specifications.	
-	(2) Circuit integrity	X	N/A	For initial and reacceptance testing, confirm the introduction of a fault in any circuit monitored for integrity results in a trouble indication at the fire alarm control unit. Open one connection at not less than 10 percent of the initiating devices, notification appliances, and controlled devices on every initiating device circuit, notification appliance circuit, and signaling line circuit. Confirm all circuits perform as indicated in Sections 23.5, 23.6, and 23.7.	

	Component	Initial Acceptance	Periodic Frequency	Method	
	-	-	N/A	Annually	For pe testing each i device notifica applia circuit, signali circuit correc indicat the co unit. C all circ perfor indicat Sectio 23.6, a 23.7.
17.	Initiating devices[i]	-	-	-	
-	(1) Electromechanical releasing device	-	-	-	
-	(a) Nonrestorable-type link	X	Annually	Verify correct operation by removal of the fusible link and operation of the associated device.	
-	(b) Restorable-type link[j]	X	Annually	Verify correct operation by removal of the fusible link and operation of the associated device.	
-	(2) Fire extinguishing system(s) or suppression system(s) alarm switch	X	Annually	Operate the switch mechanically or electrically and verify receipt of signal by the fire alarm control unit.	
-	(3) Fire–gas and other detectors	X	Annually	Test fire–gas detectors and other fire detectors as prescribed by the manufacturer and as necessary for the application.	
-	(4) Heat detectors	-	-	-	
-	(a) Fixed-temperature, rate-of-rise, rate of compensation, restorable line, spot type	X	Annually (see 14.4.4.5)	Perform heat test with a listed and labeled heat source or in accordance with the manufacturer's published instructions.	

		Component	Initial Acceptance	Periodic Frequency	Method
		(excluding pneumatic tube type)			Assure that the test method for the installed equipment does not damage the nonrestorable fixed-temperature element of a combination rate-of-rise/fixed-temperature element detector.
		(b) Fixed-temperature, nonrestorable line type	X	Annually	Do not perform heat test. Test functionality mechanically and electrically. Measure and record loop resistance. Investigate changes from acceptance test.
		(c) Fixed-temperature, nonrestorable spot type	X	See Method	After 15 years from initial installation, replace all devices or have 2 detectors per 100 laboratory tested. Replace the 2 detectors with new devices. If a failure occurs on any of the detectors removed, remove and test additional detectors to determine either a general problem involving faulty detectors or a localized problem involving 1 or 2 defective detectors.
		(d) Restorable line type, pneumatic tube only	X	Annually	Perform heat tests (where test chambers are in circuit), with a listed and labeled heat source or in accordance with the

-	Component	Initial Acceptance	Periodic Frequency	Method
				manufacturer's published instructions of the detector or conduct a test with pressure pump.
-	(e) Single- and multiple-station heat alarms	X	Annually	Conduct functional tests according to manufacturer’s published instructions. Do not test nonrestorable heat detectors with heat.
-	(5) Manual fire alarm boxes	X	Annually	Operate manual fire alarm boxes per the manufacturer’s published instructions. Test both key-operated presignal and general alarm manual fire alarm boxes.
-	(6) Radiant energy fire detectors	X	Semiannually	Test flame detectors and spark/ember detectors in accordance with the manufacturer’s published instructions to determine that each detector is operative.
			-	-
			-	-
			-	-
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
-	(7) Smoke detectors — functional test	-	-	-
-	(a) In other than one- and two-family dwellings, system detectors	X	Annually	[k]Test smoke detectors in place to ensure smoke entry into the sensing chamber and an alarm response. Use smoke or a listed and labeled product acceptable to the manufacturer or in accordance with their published instructions. Other methods listed in the manufacturer's published instructions that ensure smoke entry from the protected area, through the vents, into

-	Component	Initial Acceptance	Periodic Frequency	Method
				the sensing chamber can be used.
-	(b) Single- and multiple-station smoke alarms connected to protected premises systems	X	Annually	Perform a functional test on all single- and multiple-station smoke alarms connected to a protected premises fire alarm system by putting the smoke alarm into an alarm condition.
-	(c) System smoke detectors used in one- and two-family dwellings	X	Annually	Conduct functional tests according to manufacturer's published instructions.
-	(d) Air sampling	X	Annually	Test with smoke or a listed and labeled product acceptable to the manufacturer or in accordance with their published instructions. In the absence of an automatic, listed airflow supervision feature, test from the end sampling port or point on each pipe run and verify airflow through all other ports or points.
-	(e) Duct type	X	Annually	In addition to the testing required in Table 14.4.3.2(17)(7)(a) and Table 14.4.3.2(17)(8), test duct smoke detectors that use sampling tubes to ensure that they will properly sample the airstream in the duct using a method acceptable to the manufacturer or in accordance with their published instructions.
-	(f) Projected beam type	X	Annually	Test the detector by introducing smoke, other aerosol, or an optical filter into the beam path.
-	(g) Smoke detector with built-in thermal element	X	Annually	Operate both portions of the detector independently as described for the

-	Component	Initial Acceptance	Periodic Frequency	Method
				respective devices.
-	(h) Smoke detectors with control output functions	X	Annually	Verify that the control capability remains operable even if all of the initiating devices connected to the same initiating device circuit or signaling line circuit are in an alarm state.
-	(8) Smoke detectors (single sensor) — sensitivity testing	-	-	-
-	In other than one- and two-family dwellings, system detectors	N/A	See 14.4.4.3	[I]Perform any of the following tests to ensure that each smoke detector is within its listed and marked sensitivity range:
			-	-
			-	-
			-	-
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(9) Carbon monoxide detectors/carbon monoxide alarms connected to protected premises systems	-	-	-
-	(a) CO entry test	X	Annually	Test the devices in place to ensure CO entry to the sensing chamber by introduction through the vents, to the sensing chamber of listed and labeled product acceptable to the manufacturer or in accordance with manufacturer's published instructions
-	(b) Air sampling	X	Annually	Per test methods documented in the manufacturer's published instructions, verify detector alarm response through the end sampling port on each pipe run; verify airflow through all other ports as well.
-	(c) Duct type	X	Annually	Test or inspect air duct detectors to ensure that the device will sample the airstream in accordance with the manufacturer's published instructions.
-	(d) CO detector with control output functions	X	Annually	Within each protected space, verify that the control capability remains operable even if all of the initiating devices connected to the same initiating device circuit or signaling line circuit are in an alarm state.
-	(10) Initiating devices, supervisory	-	-	-
-	(a) Control valve switch	X	Semiannual	Operate valve and verify signal receipt to be within the first two revolutions of the

-	Component	Initial Acceptance	Periodic Frequency	Method
				handwheel or within one-fifth of the travel distance, or per the manufacturer's published instructions. Continue to cycle outside stem and yoke valves and verify switch does not reset during full travel of the valve stem.
-	(b) High- or low-air pressure switch	X	Annually	Operate switch and verify receipt of signal is obtained where the required pressure is increased or decreased a maximum 10 psi (70 kPa) from the required pressure level or in accordance with manufacturer's published instructions.
-	(c) Steam pressure	X	Annually	Operate switch and verify receipt of signal is obtained before pressure decreases to 110 percent of the minimum operating pressure of the steam-operated equipment.
-	(d) Pressure supervisory devices for other sources	X	Annually	Operate switch and verify receipt of signal is obtained where the required pressure is increased or decreased from the normal operating pressure by an amount specified in approved design documents.
-	(e) Room temperature switch	X	Annually	Operate switch and verify receipt of signal to indicate the decrease in room temperature to 40°F (4.4°C) and its restoration to above 40°F (4.4°C).
-	(f) Water level switch	X	Annually	Operate switch and verify receipt of signal indicating the water level raised or lowered a maximum

-	Component	Initial Acceptance	Periodic Frequency	Method
				3 in. (70 mm) from the required level within a pressure tank, or a maximum 12 in. (300 mm) from the required level of a nonpressure tank. Also verify its restoral to required level.
-	(g) Water temperature switch	X	Annually	Operate switch and verify receipt of signal to indicate the decrease in water temperature to 40°F (4.4°C) and its restoration to above 40°F (4.4°C).
-	(11) Mechanical, electrosonic, or pressure-type waterflow device	X	Semiannually	Water shall be flowed through an inspector's test connection indicating the flow of water equal to that from a single sprinkler of the smallest orifice size installed in the system or other listed and approved waterflow switch test methods for wet-pipe systems, or an alarm test bypass connection for dry-pipe, pre-action, or deluge systems in accordance with NFPA 25.
-	(12) Multi-sensor fire detector or multi-criteria fire detector or combination fire detector	X	Annually	1. Test each detector in accordance with the manufacturer’s published instructions. Test each of the sensors present within the detector (e.g., smoke/heat/CO, etc.) independently for the specific detection principle, regardless of the configuration status at the time of testing, or individual sensors together if the technology allows individual sensor responses to be verified, or where sensors cannot be tested individually,

		Component	Initial Acceptance	Periodic Frequency	Method
					test the primary sensor.[m]
18.	Special hazard equipment				
		(1) Abort switch (dead-man type)	X	Annually	Operate abort switch and verify correct sequence and operation.

-		Component	Initial Acceptance	Periodic Frequency	Method
-		(2) Abort switch (recycle type)	X	Annually	Operate abort switch and verify development of correct matrix with each sensor operated.
-		(3) Abort switch (special type)	X	Annually	Operate abort switch and verify correct sequence and operation in accordance with authority having jurisdiction. Observe sequencing as specified on as-built drawings or in system owner's manual.
-		(4) Cross-zone detection circuit	X	Annually	Operate one sensor or detector on each zone. Verify occurrence of correct sequence with operation of first zone and then with operation of second zone.
-		(5) Matrix-type circuit	X	Annually	Operate all sensors in system. Verify development of correct matrix with each sensor operated.
-		(6) Release solenoid circuit[n]	X	Annually	Verify operation of solenoid.
-		(7) Squibb release circuit	X	Annually	Use AGI flashbulb or other test light approved by the manufacturer. Verify operation of flashbulb or light.
-		(8) Verified, sequential, or counting zone circuit	X	Annually	Operate required sensors at a minimum of four locations in circuit. Verify correct sequence with both the first and second detector in alarm.
-		(9) All above devices or circuits or combinations thereof	X	Annually	Verify supervision of circuits by creating an open circuit.
19.	Combination systems	-	-	-	

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(1) Fire extinguisher electronic monitoring device/system	X	Annually	Test communication between the device connecting the fire extinguisher electronic monitoring device/system and the fire alarm control unit to ensure proper signals are received at the fire alarm control unit and remote annunciator(s) if applicable.
-	(2) Carbon monoxide device/system	X	Annually	Test communication between the device connecting the carbon monoxide device/system and the fire alarm control unit to ensure proper signals are received at the fire alarm control unit and remote annunciator(s) if applicable.
20.	Interface equipment[o]	X	See 14.4.4.4	Test interface equipment connections by operating or simulating the equipment being supervised. Verify signals required to be transmitted are received at the control unit. Test frequency for interface equipment is the same as the frequency required by the applicable NFPA standard(s) for the equipment being supervised.
21.	Guard's tour equipment	X	Annually	Test the device in accordance with the manufacturer's published instructions.

-	Component	Initial Acceptance	Periodic Frequency	Method	
22. Alarm notification appliances	-	-	-		
-	(1) Audible[p]	X	N/A	For initial and reacceptance testing, measure sound pressure levels for alert tone signals and evacuation signal tones with a sound level meter meeting ANSI/ASAS1.4/Part 1, *Electroacoustics — Sound Level Meters — Part 1: Specifications,* Type 2 requirements. Measure sound pressure levels to determine if they are in compliance with Chapter 18 and the required performance, as documented per 7.3.4. Set the sound level meter in accordance with ANSI/ASA S3.41, *Audible Emergency Evacuation (E2) and Evacuation Signals with Relocation Instructions (ESRI),* using the time-weighted characteristic F (FAST).	
	-	-	N/A	Annually	[q]For p testing the op of the notifica applia
-	(2) Audible textual notification appliances (loudspeakers and other appliances to convey voice messages)	X	N/A	For initial and reacceptance testing, measure sound pressure levels for signals with a sound level meter meeting ANSI/ASAS1.4/Part 1, *Electroacoustics — Sound Level Meters — Part 1: Specifications,* Type 2 requirements. Measure sound	

-	Component	Initial Acceptance	Periodic Frequency	Method	
				pressure levels throughout the protected area to determine if they are in compliance with Chapter 18 and the required performance, as documented per 7.3.4. Set the sound level meter in accordance with ANSI/ASA S3.41, *Audible Emergency Evacuation (E2) and Evacuation Signals with Relocation Instructions (ESRI),* using the time-weighted characteristic F (FAST).	
			-	-	
	-	-	N/A	Annually	[q]For p testing the op of the notifica applia
-	(3) Visual	X	N/A	Perform initial and reacceptance testing in accordance with the manufacturer's published instructions. Verify appliance locations to be per approved layout and confirm that no floor plan changes affect the approved layout. Verify the candela rating or method of candela control marking on each visual appliance and rating when reported by the FACU agrees with the approved drawings. Confirm that each appliance flashes.	

		Component	Initial Acceptance	Periodic Frequency	Method	
	-	-	-	N/A	Annually	For pe testing that ea applia flashes
23.	Exit marking audible notification appliance	X	Annually	Perform tests in accordance with manufacturer's published instructions.		
24.	Emergency control functions[r]	X	Annually	For initial, reacceptance, and periodic testing, verify emergency control function interface device activation. Where an emergency control function interface device is disabled or disconnected during initiating device testing, verify that the disabled or disconnected emergency control function interface device has been properly restored, including electromagnetic devices used for door releasing services as part of a fire alarm system.		
25.	Two-way emergency communications systems	X	Annually	Use the manufacturer’s published instructions and the as-built drawings provided by the system supplier to verify correct operation after the initial testing phase has been		

-	Component	Initial Acceptance	Periodic Frequency	Method
			performed by the supplier or by the supplier's designated representative.	
			-	-
			-	-
			-	-
			-	-
			-	-
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
26. Special procedures	-	-	-	
-	(1) Alarm verification	X	Annually	Verify time delay and alarm response for smoke detector circuits identified as having alarm verification.
-	(2) Multiplex systems	X	Annually	Verify communications between sending and receiving units under both primary and secondary power.
			-	-
			-	-
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
27.	Supervising station alarm systems — receiving equipment	-	-	-
-	(1) All equipment	X	Monthly	Perform tests on all system functions and features in accordance with the equipment manufacturer's published instructions for correct operation in conformance with the applicable sections of Chapter 26.
			-	-
			-	-
-	(2) Digital alarm communicator receiver (DACR)	X	Monthly	Disconnect each transmission means in turn from the DACR, and verify audible and visual annunciation of a trouble signal in the supervising station.
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(3) Digital alarm radio receiver (DARR)	X	Monthly	Cause the following conditions of all DARRs on all subsidiary and repeater station receiving equipment. Verify receipt at the supervising station of correct signals for each of the following conditions:
			-	-
			-	-
			-	-
			-	-
			-	-
-	(4) McCulloh systems	X	Monthly	Test and record the current on each circuit at each supervising and subsidiary station under the following conditions:
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
			-	-
			-	-
			-	-
			-	-
-	(5) Radio alarm supervising station receiver (RASSR) and radio alarm repeater station receiver (RARSR)	X	Monthly	Cause each of the following conditions at each of the supervising or subsidiary stations and all repeater station radio transmitting and receiving equipment; verify receipt of correct signals at the supervising station:
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
-	(6) Private microwave radio systems	X	Monthly	Cause each of the following conditions at each of the supervising or subsidiary stations and all repeater station radio transmitting and receiving equipment; verify receipt of correct signals at the supervising station:
			-	-
			-	-
			-	-
			-	-
-	(7) Performance-based technologies	X	Monthly	Perform tests to ensure the monitoring of integrity of the transmission technology and technology path. Where a single communications path is used, disconnect the communication path. Verify that failure of the path is annunciated at the supervising station within 60 minutes of the failure (within 5 minutes for communication equipment installed prior to adoption of the 2013 edition of *NFPA 72*). Restore the communication path. Where multiple

	-	Component	Initial Acceptance	Periodic Frequency	Method
					communication paths are used, disconnect both communication paths and confirm that failure of the path is annunciated at the supervising station within not more than 6 hours of the failure (within 24 hours for communication equipment installed prior to adoption of the 2013 edition of *NFPA 72*). Restore both communication paths.
28.	Public emergency alarm reporting system transmission equipment	-	-	-	
	-	(1) Publicly accessible alarm box	X	Semiannually	Actuate publicly accessible initiating device(s) and verify receipt of not less than three complete rounds of signal impulses. Perform this test under normal circuit conditions. If the device is equipped for open circuit operation (ground return), test it in this condition as one of the semiannual tests.
	-	(2) Auxiliary box	X	Annually	Test each initiating circuit of the auxiliary box by actuation of a protected premises initiating device connected to that circuit. Verify receipt of not less than three complete rounds of signal impulses.
	-	(3) Master box	-	-	-
	-	(a) Manual operation	X	Semiannually	Perform the tests prescribed for 28(1).
	-	(b) Auxiliary operation	X	Annually	Perform the tests prescribed for 28(2).

-	Component	Initial Acceptance	Periodic Frequency	Method
29.	Low-power radio (wireless systems)	X	N/A	The following procedures describe additional acceptance and reacceptance test methods to verify wireless protection system operation:

-	Component	Initial Acceptance	Periodic Frequency	Method
-			-	-
-			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
30. Mass notification systems	-	-	-	
-	(1) Functions	X	Annually	At a minimum, test control unit to verify correct receipt of alarm, supervisory, and trouble signals (inputs); operation of evacuation signals and auxiliary functions (outputs); circuit supervision, including detection of open circuits and ground faults; and power supply supervision for

-	Component	Initial Acceptance	Periodic Frequency	Method
				detection of loss of ac power and disconnection of secondary batteries.
-	(2) Fuses	X	Annually	Verify the rating and supervision.
-	(3) Interfaced equipment	X	Annually	Verify integrity of single or multiple circuits providing interface between two or more control units. Test interfaced equipment connections by operating or simulating operation of the equipment being supervised. Verify signals required to be transmitted at the control unit.
-	(4) Lamps and LEDs	X	Annually	Illuminate lamps and LEDs.
-	(5) Primary (main) power supply	X	Annually	Disconnect all secondary (standby) power and test under maximum load, including all alarm appliances requiring simultaneous operation. Reconnect all secondary (standby) power at end of test. For redundant power supplies, test each separately.
-	(6) Audible textual notification appliances (loudspeakers and other appliances to convey voice messages)	X	Annually	Measure sound pressure level with a sound level meter meeting ANSI/ASAS1.4/Part 1, *Electroacoustics — Sound Level Meters — Part 1: Specifications,* Type 2 requirements. Measure and record levels throughout protected area. Set the sound level meter in accordance with ANSI/ASA S3.41, *Audible Emergency Evacuation (E2) and Evacuation Signals*

	Component	Initial Acceptance	Periodic Frequency	Method
				with Relocation Instructions (ESRI), using the time-weighted characteristic F (FAST). Record the maximum output when the audible emergency evacuation signal is on.
	(7) Visual	X	Annually	Perform test in accordance with manufacturer's published instructions. Verify appliance locations to be per approved layout and confirm that no floor plan changes affect the approved layout. Verify the candela rating or method of candela control marking on each visual appliance and rating when reported by the FACU agrees with the approved drawings. Confirm that each appliance flashes.
	(8) Control unit functions and no diagnostic failures are indicated	X	Annually	Review event log file and verify that the correct events were logged. Review system diagnostic log file; correct deficiencies noted in file. Delete unneeded log files. Delete unneeded error files. Verify that sufficient free disk space is available. Verify unobstructed flow of cooling air is available. Change/clean filters, cooling fans, and intake vents.

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(9) Control unit reset	X	Annually	Power down the central control unit computer and restart it.
-	(10) Control unit security	X	Annually	If remote control software is loaded onto the system, verify that it is disabled to prevent unauthorized system access.
-	(11) Audible/visual functional test	X	Annually	Send out an alert to a diverse set of predesignated receiving devices and confirm receipt. Include at least one of each type of receiving device.
-	(12) Software backup	X	Annually	Make full system software backup. Rotate backups based on accepted practice at site.
-	(13) Secondary power test	X	Annually	Disconnect ac power. Verify the ac power failure alarm status on central control unit. With ac power disconnected, verify battery voltage under load.
-	(14) Wireless signals	X	Annually	Check forward/reflected radio power is within specifications.
-	(15) Antenna	X	Annually	Check forward/reflected radio power is within specifications. Verify solid electrical connections with no observable corrosion.
-	(16) Transceivers	X	Annually	Verify proper operation and mounting is not compromised.

[a]Some transmission equipment (such as, but not limited to, cable modems, fiber-optic interface nodes, and VoIP interfaces) are typically powered by the building's electrical system using a secondary (standby) power supply that does not meet the requirements of this Code. This is intended to ensure that the testing authority verifies full secondary (standby) power as required by Chapter 10. Additionally, refer to Table 14.4.3.2, items 7 through 9, for secondary (standby) power supply testing.

[b]The automatic transmission of the check-in (handshake) signal can take up to 60 minutes to occur.

[c]See Table 14.4.3.2, Item 4(1) for the testing of transmission equipment.

[d]The battery tests in Table 14.4.3.2, Item 9, are based on VRLA batteries and it is the intent that the tests specified in (1) through (4) be performed in order. FACU automated load testing of VRLA batteries in accordance with Table 14.4.3.2, Item 9(5), with record of ambient temperature is an acceptable alternative to prescriptive manual methods using test equipment. For other secondary battery types, refer to the battery manufacturer's published instructions or IEEE 450, *Recommended Practice for Maintenance, Testing, and Replacement of Vented Lead-Acid Batteries for Stationary Applications*, for vented lead-acid batteries, and IEEE 1106, *Recommended Practice for Installation, Maintenance, Testing, and Replacement of Vented Nickel-Cadmium Batteries for Stationary Applications*, for nickel-cadmium batteries.

[e]If the charger is adjustable, adjust the output voltage to 2.265 volts per cell ±0.015 volts at 77°F (25°C) or as specified by the alarm equipment manufacturer.

[f]See A.14.4.3.2 Item 9(4). A load test per Item 9(5) is permitted in lieu of an ohmic test.

[g]See A.14.4.3.2 Item 9(5).

[h]The voltmeter sensitivity has been changed from 1000 ohms per volt to 100 ohms per volt so that the false ground readings (caused by induced voltages) are minimized.

[i]Initiating devices such as smoke detectors used for elevator recall, closing dampers, or releasing doors held in the open position that are permitted by the Code *(see9.6.3 of NFPA 101)* to initiate supervisory signals at the fire alarm control unit (FACU) should be tested at the same frequency (annual) as those devices when they are generating an alarm signal. They are not supervisory devices, but they initiate a supervisory signal at the FACU.

[j]Fusible thermal link detectors are commonly used to close fire doors and fire dampers electrically connected to the fire alarm control unit. They are actuated by the presence of external heat, which causes a solder element in the link to fuse, or by an electric thermal device, which, when energized, generates heat within the body of the link, causing the link to fuse and separate.

[k]Note, it is customary for the manufacturer of the smoke detector to test a particular product from an aerosol provider to determine acceptability for use in smoke entry testing of their smoke detector/smoke alarm. Magnets are not acceptable for smoke entry tests.

[l] There are some detectors that use magnets as a manufacturer's calibrated sensitivity test instrument.

[m]For example, it might not be possible to individually test the heat sensor in a thermally enhanced smoke detector.

[n]Manufacturer's published instructions should be consulted to ensure a proper operational test. No suppression gas or agent is expected to be discharged during the test of the solenoid. *See Test Plan of 14.2.10*.

[o]A monitor module installed on an interface device is not considered a supervisory device and therefore not subject to the quarterly testing frequency requirement. Test frequencies for interface devices should be in accordance with the applicable standard. For example, fire pump controller alarms such as phase reversal are required to be tested annually. If a monitor module is installed to identify phase reversal on the fire alarm control unit, it is not necessary to test for phase reversal four times a year.

[p]Chapter 18 would require 15 dB over average ambient sound for public mode spaces. Sometimes the ambient sound levels are different from what the design was based upon. Private operating mode would require 10 dB over average ambient at the location of the device.

[q]Where building, system, or occupancy changes have been observed, the owner should be

notified of the changes. New devices might need to be installed and tested per the initial acceptance testing criteria.

[r]See A.14.4.3.2 and Table 14.4.3.2, Item 24.

Statement of Problem and Substantiation for Public Input

The parenthetical description makes it clear that item 8 in the table only applies to single sensor smoke detectors. Item 12 is used for multi-sensor or multi-criteria detectors. As it is one could assume that item 8 also applies to multi-sensors/multi-criteria.

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Committee Statement

Resolution: Item 12 for multi-sensor detectors omits sensitivity testing requirements from the list of test methods.

Public Input No. 247-NFPA 72-2022 [Section No. 14.4.3.2]

14.4.3.2*

Systems and associated equipment shall be tested according to Table 14.4.3.2.

Table 14.4.3.2 Testing

	Component	Initial Acceptance	Periodic Frequency	Method
1. All equipment	X			See Table 14.3.1.
2. Control unit				
	(1) Functions	X	Annually	Verify correct receipt of alarm, supervisory, and trouble signals (inputs); operation of evacuation signals and auxiliary functions (outputs); circuit supervision, including detection of open circuits and ground faults; and power supply supervision for detection of loss of ac power and disconnection of secondary batteries.
	(2) Fuses	X	Annually	Verify rating and supervision.
	(3) Interfaced equipment	X	Annually	Verify integrity of single or multiple circuits providing interface between two or more control units. Test interfaced equipment connections by operating or simulating operation of the equipment being supervised. Verify signals required to be transmitted at the control unit.
	(4) Lamps and LEDs	X	Annually	Illuminate lamps and LEDs.
	(5) Primary (main) power supply	X	Annually	Disconnect all secondary (standby) power and test under maximum load, including all alarm appliances requiring simultaneous operation. Reconnect all secondary (standby) power at end of test. Test redundant power supplies separately.

-	Component	Initial Acceptance	Periodic Frequency	Method
3.	Alarm control unit trouble signals	-	-	-
-	(1) Audible and visual	X	Annually	Verify operation of control unit trouble signals. Verify ring-back feature for systems using a trouble-silencing switch that requires resetting.
-	(2) Disconnect switches	X	Annually	If control unit has disconnect or isolating switches, verify performance of intended function of each switch. Verify receipt of trouble signal when a supervised function is disconnected.
-	(3) Ground-fault monitoring circuit	X	Annually	If the system has a ground detection feature, verify the occurrence of ground-fault indication whenever any installation conductor is grounded.
-	(4) Transmission of signals to off-premises location	X	Annually	Actuate an initiating device and verify receipt of alarm signal at the off-premises location.
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
4. Supervising station alarm systems — transmission equipment	-	-	-	
-	(1) All equipment	X	Annually	[a]Test all system functions and features in accordance with the equipment manufacturer's published instructions for correct operation in conformance with the applicable sections of Chapter 26.
			-	-
			-	-
-	(2) Digital alarm communicator transmitter (DACT)	X	Annually	Except for DACTs installed prior to adoption of the 2013 edition of NFPA 72 that are connected to a telephone line

-	Component	Initial Acceptance	Periodic Frequency	Method
				(number) that is also supervised for adverse conditions by a derived local channel, ensure connection of the DACT to two separate means of transmission.
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(3) Digital alarm radio transmitter (DART)	X	Annually	Disconnect the primary telephone line. Verify transmission of a trouble signal to the supervising station by the DART occurs within 4 minutes.
-	(4) McCulloh transmitter	X	Annually	Actuate initiating device. Verify production of not less than three complete rounds of not less than three signal impulses each by the McCulloh transmitter.

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			(2) Ground	
			-	-
			-	-
			-	-
			-	-
			(2) Ground	
			-	-
-	(5) Radio alarm transmitter (RAT)	X	Annually	Cause a fault between elements of the transmitting equipment. Verify indication of the fault at the protected premises, or transmission of trouble signal to the supervising station.
-	(6) Performance-based technologies	X	Annually	Perform tests to ensure the monitoring of integrity of the transmission technology and technology path. Where shared communications equipment is used as permitted by 26.6.3.12, provided secondary (standby)

-	Component	Initial Acceptance	Periodic Frequency	Method
				power sources shall be tested in accordance with Table 14.4.3.2, item 7, 8, or 9, as applicable.

-	Component	Initial Acceptance	Periodic Frequency	Method
5.	Emergency communications equipment	-	-	-
-	(1) Amplifier/tone generators	X	Annually	Verify correct switching and operation of backup equipment.
-	(2) Call-in signal silence	X	Annually	Operate/function and verify receipt of correct visual and audible signals at control unit.
-	(3) Off-hook indicator (ring down)	X	Annually	Install phone set or remove phone from hook and verify receipt of signal at control unit.
-	(4) Phone jacks	X	Annually	Visually inspect phone jack and initiate communications path through jack.
-	(5) Phone set	X	Annually	Actuate each phone set and verify correct operation.
-	(6) System performance	X	Annually	Operate the system with a minimum of any five handsets simultaneously. Verify voice quality and clarity.
6.	Engine-driven generator	X	Monthly	If an engine-driven generator dedicated to the system is used as a required power source, verify operation of the generator and transfer switch in accordance with NFPA 110 by the building owner.
7.	Emergency power supply system/stored-emergency power supply system (EPSS/SEPSS)	X	Annually	If an EPSS/SEPSS dedicated to the system is used as a required power source, verify by the building owner operation of the

-	Component	Initial Acceptance	Periodic Frequency	Method	
			EPSS/SEPSS in accordance with NFPA 111.		
8.	Secondary (standby) power supply[c]	X	Annually	Disconnect all primary (main) power supplies and verify the occurrence of required trouble indication for loss of primary power. Measure or verify the system's standby and alarm current demand using the equipment manufacturer's data and verify the battery's rated capacity exceeds the system's power demand, including the safety margin. Operate general alarm systems a minimum of 5 minutes and emergency voice communications systems for a minimum of 15 minutes. Reconnect primary (main) power supply at end of test.	
9.	VRLA battery and charger[d]	-	-		Prior t conduc any ba testing by the conduc test, th system softwa stored volatile memo protec loss.

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(1) Temperature test	X	Semiannually	Upon initially opening the cabinet door, measure the internal ambient temperature of the enclosure. Measure the temperature of each battery cell/unit at the negative terminal with an infrared thermometer. Replace any battery cell/unit if its temperature is greater than 18°F (10°C) above the measured internal ambient temperature of the enclosure.
-	(2) Charger test[e]	X	Semiannually	With the battery fully charged and connected to the charger, measure the voltage across the battery with a voltmeter. Verify the voltage is within the battery/alarm equipment manufacturer's recommendations. If the voltage is outside of the specified limits, either adjust the charger to within limits or replace the charger.
-	(3) Cell/Unit voltage test	X	Semiannually	With the battery fully charged and connected to the charger, measure the voltage of each cell/unit with a voltmeter. Replace the battery when any cell/unit measures a voltage less than 13.26 volts.
-	(4) Ohmic test[f]	X	N/A	When the battery is installed, establish a baseline ohmic value for each battery cell/unit or where available use baseline ohmic values provided by the battery or test equipment

-	Component	Initial Acceptance	Periodic Frequency	Method	
				manufacturer. In either case record the base line ohmic value on each battery cell/unit.	
		-	-	-	Semia
-	(5) Replacement/Load test[g]	-		3 years	Replac battery condu test of battery capaci test th based

-	Component	Initial Acceptance	Periodic Frequency	Method	
					manuf specifi for a d rate of or mor applyi curren indicat the se hourly discha contin until th termin voltag decrea the en voltag specifi the manuf Recor test du and ca the ba capaci includi adjust ambie tempe Repla battery capaci less th equal or at th sched interva battery capaci less th
10.	Public emergency alarm reporting system — wired system	X	Daily	Manual tests of the power supply for public reporting circuits shall be made and recorded at least once during each 24-hour period. Such tests shall include the following: - -	

-	Component	Initial Acceptance	Periodic Frequency	Method

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
11.	Remote annunciators	X	Annually	Verify the correct operation and identification of annunciators. If provided, verify the correct operation of annunciator under a fault condition.
12.	Reserved	-	-	-
13.	Reserved	-	-	-
14.	Wireless communications	X	Annually	Test per the manufacturer's published instructions.
15.	Conductors — metallic	-	-	-
-	(1) Stray voltage	X	N/A	Test all installation conductors with a volt/ohmmeter to verify that there are no stray (unwanted) voltages between installation conductors or between installation conductors and ground. Verify the maximum allowable stray voltage does not exceed 1 volt ac/dc, unless a different threshold is specified in the manufacturer's published instructions for the installed equipment.
-	(2) Ground faults	X	N/A	Test all installation conductors, other than those intentionally and permanently grounded, for isolation from ground per the installed equipment manufacturer's published instructions.
-	(3) Short-circuit faults	X	N/A	Test all installation conductors, other than those intentionally connected together, for conductor-to-

-	Component	Initial Acceptance	Periodic Frequency	Method	
				conductor isolation per the manufacturer's published instructions for the installed equipment. Also test these same circuits conductor-to-ground.	
-	(4) Loop resistance	X	N/A	With each initiating and indicating circuit installation conductor pair short-circuited at the far end, measure and record the resistance of each circuit. Verify that the loop resistance does not exceed the limits specified in the manufacturer's published instructions for the installed equipment.	
-	(5) Circuit integrity	X	N/A	For initial and reacceptance testing, confirm the introduction of a fault in any circuit monitored for integrity results in a trouble indication at the fire alarm control unit. Open one connection at not less than 10 percent of the initiating devices, notification appliances and controlled devices on every initiating device circuit, notification appliance circuit, and signaling line circuit. Confirm all circuits perform as indicated in Sections 23.5, 23.6, and 23.7.	
	-	-	N/A	Annually	For pe testing each i device notifica applia circuit, signali circuit correc

-	Component	Initial Acceptance	Periodic Frequency	Method	
					indicat the co unit. C all circ perfor indicat Sectio 23.6, a 23.7.
16. Nonmetallic pathways	-	-	-		
-	(1) Optical fiber cables	X	N/A	Test the transmission characteristics of optical fibers by the use of an optical power meter or by an optical time domain reflectometer used to measure the relative power loss of the line. Test result data must meet or exceed ANSI/TIA 568.3, *Optical Fiber Cabling and Components Standard*, related to fiber-optic lines and connection/splice losses and the control unit manufacturer's published specifications.	
-	(2) Circuit integrity	X	N/A	For initial and reacceptance testing, confirm the introduction of a fault in any circuit monitored for integrity results in a trouble indication at the fire alarm control unit. Open one connection at not less than 10 percent of the initiating devices, notification appliances, and controlled devices on every initiating device circuit, notification appliance circuit, and signaling line circuit. Confirm all circuits perform as indicated in Sections 23.5, 23.6, and 23.7.	

	Component	Initial Acceptance	Periodic Frequency	Method	
	-	-	N/A	Annually	For pe testing each i device notifica applia circuit, signali circuit correc indicat the co unit. C all circ perfor indicat Sectio 23.6, a 23.7.
17.	Initiating devices[i]	-	-	-	
-	(1) Electromechanical releasing device	-	-	-	
-	(a) Nonrestorable-type link	X	Annually	Verify correct operation by removal of the fusible link and operation of the associated device.	
-	(b) Restorable-type link[j]	X	Annually	Verify correct operation by removal of the fusible link and operation of the associated device.	
-	(2) Fire extinguishing system(s) or suppression system(s) alarm switch	X	Annually	Operate the switch mechanically or electrically and verify receipt of signal by the fire alarm control unit.	
-	(3) Fire–gas and other detectors	X	Annually	Test fire–gas detectors and other fire detectors as prescribed by the manufacturer and as necessary for the application.	
-	(4) Heat detectors	-	-	-	
-	(a) Fixed-temperature, rate-of-rise, rate of compensation, restorable line, spot type	X	Annually (see 14.4.4.5)	Perform heat test with a listed and labeled heat source or in accordance with the manufacturer's published instructions.	

		Component	Initial Acceptance	Periodic Frequency	Method
		(excluding pneumatic tube type)			Assure that the test method for the installed equipment does not damage the nonrestorable fixed-temperature element of a combination rate-of-rise/fixed-temperature element detector.
		(b) Fixed-temperature, nonrestorable line type	X	Annually	Do not perform heat test. Test functionality mechanically and electrically. Measure and record loop resistance. Investigate changes from acceptance test.
		(c) Fixed-temperature, nonrestorable spot type	X	See Method	After 15 years from initial installation, replace all devices or have 2 detectors per 100 laboratory tested. Replace the 2 detectors with new devices. If a failure occurs on any of the detectors removed, remove and test additional detectors to determine either a general problem involving faulty detectors or a localized problem involving 1 or 2 defective detectors.
		(d) Restorable line type, pneumatic tube only	X	Annually	Perform heat tests (where test chambers are in circuit), with a listed and labeled heat source or in accordance with the

-	Component	Initial Acceptance	Periodic Frequency	Method
				manufacturer's published instructions of the detector or conduct a test with pressure pump.
-	(e) Single- and multiple-station heat alarms	X	Annually	Conduct functional tests according to manufacturer’s published instructions. Do not test nonrestorable heat detectors with heat.
-	(5) Manual fire alarm boxes	X	Annually	Operate manual fire alarm boxes per the manufacturer’s published instructions. Test both key-operated presignal and general alarm manual fire alarm boxes.
-	(6) Radiant energy fire detectors	X	Semiannually	Test flame detectors and spark/ember detectors in accordance with the manufacturer’s published instructions to determine that each detector is operative.
			-	-
			-	-
			-	-
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
-	(7) Smoke detectors — functional test	-	-	-
-	(a) In other than one- and two-family dwellings, system detectors	X	Annually	[k]Test smoke detectors in place to ensure smoke entry into the sensing chamber and an alarm response. Use smoke or a listed and labeled product acceptable to the manufacturer or in accordance with their published instructions. Other methods listed in the manufacturer's published instructions that ensure smoke entry from the protected area, through the vents, into

-	Component	Initial Acceptance	Periodic Frequency	Method
				the sensing chamber can be used.
-	(b) Single- and multiple-station smoke alarms connected to protected premises systems	X	Annually	Perform a functional test on all single- and multiple-station smoke alarms connected to a protected premises fire alarm system by putting the smoke alarm into an alarm condition.
-	(c) System smoke detectors used in one- and two-family dwellings	X	Annually	Conduct functional tests according to manufacturer's published instructions.
-	(d) Air sampling	X	Annually	Test with smoke or a listed and labeled product acceptable to the manufacturer or in accordance with their published instructions. In the absence of an automatic, listed airflow supervision feature, test from the end sampling port or point on each pipe run in compliance with 17.7.4.6.2.1 and verify airflow through all other ports or points.
-	(e) Duct type	X	Annually	In addition to the testing required in Table 14.4.3.2(17)(7)(a) and Table 14.4.3.2(17)(8), test duct smoke detectors that use sampling tubes to ensure that they will properly sample the airstream in the duct using a method acceptable to the manufacturer or in accordance with their published instructions.
-	(f) Projected beam type	X	Annually	Test the detector by introducing smoke, other aerosol, or an optical filter into the beam path.

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(g) Smoke detector with built-in thermal element	X	Annually	Operate both portions of the detector independently as described for the respective devices.
-	(h) Smoke detectors with control output functions	X	Annually	Verify that the control capability remains operable even if all of the initiating devices connected to the same initiating device circuit or signaling line circuit are in an alarm state.
-	(8) Smoke detectors — sensitivity testing	-	-	-
-	In other than one- and two-family dwellings, system detectors	N/A	See 14.4.4.3	lPerform any of the following tests to ensure that each smoke detector is within its listed and marked sensitivity range:
			-	-
			-	-
			-	-
			-	-

	Component	Initial Acceptance	Periodic Frequency	Method
	(9) Carbon monoxide detectors/carbon monoxide alarms connected to protected premises systems			
	(a) CO entry test	X	Annually	Test the devices in place to ensure CO entry to the sensing chamber by introduction through the vents, to the sensing chamber of listed and labeled product acceptable to the manufacturer or in accordance with manufacturer's published instructions
	(b) Air sampling	X	Annually	Per test methods documented in the manufacturer's published instructions, verify detector alarm response through the end sampling port on each pipe run; verify airflow through all other ports as well.
	(c) Duct type	X	Annually	Test or inspect air duct detectors to ensure that the device will sample the airstream in accordance with the manufacturer's published instructions.
	(d) CO detector with control output functions	X	Annually	Within each protected space, verify that the control capability remains operable even if all of the initiating devices connected to the same initiating device circuit or signaling line circuit are in an alarm state.

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(10) Initiating devices, supervisory	-	-	-
-	(a) Control valve switch	X	Semiannual	Operate valve and verify signal receipt to be within the first two revolutions of the handwheel or within one-fifth of the travel distance, or per the manufacturer's published instructions. Continue to cycle outside stem and yoke valves and verify switch does not reset during full travel of the valve stem.
-	(b) High- or low-air pressure switch	X	Annually	Operate switch and verify receipt of signal is obtained where the required pressure is increased or decreased a maximum 10 psi (70 kPa) from the required pressure level or in accordance with manufacturer's published instructions.
-	(c) Steam pressure	X	Annually	Operate switch and verify receipt of signal is obtained before pressure decreases to 110 percent of the minimum operating pressure of the steam-operated equipment.
-	(d) Pressure supervisory devices for other sources	X	Annually	Operate switch and verify receipt of signal is obtained where the required pressure is increased or decreased from the normal operating pressure by an amount specified in approved design documents.
-	(e) Room temperature switch	X	Annually	Operate switch and verify receipt of signal to indicate the decrease in room temperature to 40°F (4.4°C) and its

-	Component	Initial Acceptance	Periodic Frequency	Method
				restoration to above 40°F (4.4°C).
-	(f) Water level switch	X	Annually	Operate switch and verify receipt of signal indicating the water level raised or lowered a maximum 3 in. (70 mm) from the required level within a pressure tank, or a maximum 12 in. (300 mm) from the required level of a nonpressure tank. Also verify its restoral to required level.
-	(g) Water temperature switch	X	Annually	Operate switch and verify receipt of signal to indicate the decrease in water temperature to 40°F (4.4°C) and its restoration to above 40°F (4.4°C).
-	(11) Mechanical, electrosonic, or pressure-type waterflow device	X	Semiannually	Water shall be flowed through an inspector's test connection indicating the flow of water equal to that from a single sprinkler of the smallest orifice size installed in the system or other listed and approved waterflow switch test methods for wet-pipe systems, or an alarm test bypass connection for dry-pipe, pre-action, or deluge systems in accordance with NFPA 25.
-	(12) Multi-sensor fire detector or multi-criteria fire detector or combination fire detector	X	Annually	1. Test each detector in accordance with the manufacturer’s published instructions. Test each of the sensors present within the detector (e.g., smoke/heat/CO, etc.) independently for the specific detection principle, regardless of the configuration status at the time of

-	Component	Initial Acceptance	Periodic Frequency	Method
				testing, or individual sensors together if the technology allows individual sensor responses to be verified, or where sensors cannot be tested individually, test the primary sensor.[m]
-		-	-	-
-		-	-	
			-	-
-		-	-	
-		-	-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
-		-	-	
18.	Special hazard equipment	-	- -	
-	(1) Abort switch (dead-man type)	X	Annually	Operate abort switch and verify correct sequence and operation.
-	(2) Abort switch (recycle type)	X	Annually	Operate abort switch and verify development of correct matrix with each sensor operated.
-	(3) Abort switch (special type)	X	Annually	Operate abort switch and verify correct sequence and operation in accordance with authority having jurisdiction. Observe sequencing as specified on as-built drawings or in system owner's manual.
-	(4) Cross-zone detection circuit	X	Annually	Operate one sensor or detector on each zone. Verify occurrence of correct sequence with operation of first zone and then with operation of second zone.
-	(5) Matrix-type circuit	X	Annually	Operate all sensors in system. Verify development of correct matrix with each sensor operated.
-	(6) Release solenoid circuit[n]	X	Annually	Verify operation of solenoid.
-	(7) Squibb release circuit	X	Annually	Use AGI flashbulb or other test light approved by the manufacturer. Verify operation of flashbulb or light.
-	(8) Verified, sequential, or counting zone circuit	X	Annually	Operate required sensors at a minimum of four locations in circuit. Verify correct sequence with both

	-	Component	Initial Acceptance	Periodic Frequency	Method
					the first and second detector in alarm.
	-	(9) All above devices or circuits or combinations thereof	X	Annually	Verify supervision of circuits by creating an open circuit.
19.	Combination systems	-	-	-	
	-	(1) Fire extinguisher electronic monitoring device/system	X	Annually	Test communication between the device connecting the fire extinguisher electronic monitoring device/system and the fire alarm control unit to ensure proper signals are received at the fire alarm control unit and remote annunciator(s) if applicable.
	-	(2) Carbon monoxide device/system	X	Annually	Test communication between the device connecting the carbon monoxide device/system and the fire alarm control unit to ensure proper signals are received at the fire alarm control unit and remote annunciator(s) if applicable.
20.	Interface equipment[o]	X	See 14.4.4.4		Test interface equipment connections by operating or simulating the equipment being supervised. Verify signals required to be transmitted are received at the control unit. Test frequency for interface equipment is the same as the frequency required by the applicable NFPA standard(s) for the equipment

-	Component	Initial Acceptance	Periodic Frequency	Method	
			being supervised.		
21.	Guard’s tour equipment	X	Annually	Test the device in accordance with the manufacturer’s published instructions.	
22.	Alarm notification appliances	-	-	-	
-	(1) Audible[p]	X	N/A	For initial and reacceptance testing, measure sound pressure levels for alert tone signals and evacuation signal tones with a sound level meter meeting ANSI/ASAS1.4/Part 1, *Electroacoustics — Sound Level Meters — Part 1: Specifications,* Type 2 requirements. Measure sound pressure levels to determine if they are in compliance with Chapter 18 and the required performance, as documented per 7.3.4. Set the sound level meter in accordance with ANSI/ASA S3.41, *Audible Emergency Evacuation (E2) and Evacuation Signals with Relocation Instructions (ESRI),* using the time-weighted characteristic F (FAST).	
	-	-	N/A	Annually	[q]For p testing the op of the notifica applia
-	(2) Audible textual notification appliances (loudspeakers and other appliances	X	N/A	For initial and reacceptance testing, measure sound pressure levels for signals with a sound	

	Component	Initial Acceptance	Periodic Frequency	Method	
				level meter meeting ANSI/ASAS1.4/Part 1, *Electroacoustics — Sound Level Meters — Part 1: Specifications,* Type 2 requirements. Measure sound pressure levels throughout the protected area to determine if they are in compliance with Chapter 18 and the required performance, as documented per 7.3.4. Set the sound level meter in accordance with ANSI/ASA S3.41, *Audible Emergency Evacuation (E2) and Evacuation Signals with Relocation Instructions (ESRI),* using the time-weighted characteristic F (FAST).	
	to convey voice messages)				
			N/A	Annually	[q]For p testing the op of the notifica applia
	(3) Visual	X	N/A	Perform initial and reacceptance testing in accordance with the manufacturer's published instructions. Verify appliance locations to be per approved layout and confirm that no floor plan changes affect the approved layout. Verify the candela rating or method of candela control marking on each	

		Component	Initial Acceptance	Periodic Frequency	Method	
					visual appliance and rating when reported by the FACU agrees with the approved drawings. Confirm that each appliance flashes.	
	-	-	-	N/A	Annually	For pe testing that ea applia flashes
23.	Exit marking audible notification appliance	X	Annually	Perform tests in accordance with manufacturer's published instructions.		
24.	Emergency control functions[r]	X	Annually	For initial, reacceptance, and periodic testing, verify emergency control function interface device activation. Where an emergency control function interface device is disabled or disconnected during initiating device testing, verify that the disabled or disconnected emergency control function interface device has been properly restored, including electromagnetic devices used for door releasing services as part of a fire alarm system.		
25.	Two-way emergency communications systems	X	Annually	Use the manufacturer's published instructions and the as-built		

-	Component	Initial Acceptance	Periodic Frequency	Method
			drawings provided by the system supplier to verify correct operation after the initial testing phase has been performed by the supplier or by the supplier's designated representative.	
			-	-
			-	-
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
26. Special procedures	-	-	-	
-	(1) Alarm verification	X	Annually	Verify time delay and alarm response for smoke detector circuits identified as having alarm verification.
-	(2) Multiplex systems	X	Annually	Verify communications between sending and receiving units under both primary and secondary power.
			-	-
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
27.	Supervising station alarm systems — receiving equipment			
-	(1) All equipment	X	Monthly	Perform tests on all system functions and features in accordance with the equipment manufacturer's published instructions for correct operation in conformance with the applicable sections of Chapter 26.
-	(2) Digital alarm communicator receiver (DACR)	X	Monthly	Disconnect each transmission means in turn from the DACR, and verify audible and visual annunciation of a trouble signal in the

-	Component	Initial Acceptance	Periodic Frequency	Method
				supervising station.
			-	-
-	(3) Digital alarm radio receiver (DARR)	X	Monthly	Cause the following conditions of all DARRs on all subsidiary and repeater station receiving equipment. Verify receipt at the supervising station of correct signals for each of the following conditions:
			-	-
			-	-
			-	-
			-	-
			-	-
-	(4) McCulloh systems	X	Monthly	Test and record the current on each circuit at each supervising and subsidiary station under the following conditions:

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
			-	-
			-	-
			-	-
			-	-
			-	-
			-	-
-	(5) Radio alarm supervising station receiver (RASSR) and radio alarm repeater station	X	Monthly	Cause each of the following conditions at each of the supervising or subsidiary stations

-	Component	Initial Acceptance	Periodic Frequency	Method
	receiver (RARSR)			and all repeater station radio transmitting and receiving equipment; verify receipt of correct signals at the supervising station:
			-	-
			-	-
			-	-
-	(6) Private microwave radio systems	X	Monthly	Cause each of the following conditions at each of the supervising or subsidiary stations and all repeater station radio transmitting and receiving equipment; verify receipt of correct signals at the supervising station:
			-	-
			-	-
			-	-
			-	-
-	(7) Performance-based technologies	X	Monthly	Perform tests to ensure the monitoring of integrity of the transmission technology and technology path. Where a single communications path is used, disconnect the communication path. Verify that failure of the path is annunciated at the supervising station

-	Component	Initial Acceptance	Periodic Frequency	Method
				within 60 minutes of the failure (within 5 minutes for communication equipment installed prior to adoption of the 2013 edition of *NFPA 72*). Restore the communication path. Where multiple communication paths are used, disconnect both communication paths and confirm that failure of the path is annunciated at the supervising station within not more than 6 hours of the failure (within 24 hours for communication equipment installed prior to adoption of the 2013 edition of *NFPA 72*). Restore both communication paths.
28.	Public emergency alarm reporting system transmission equipment	-	-	-	
-		(1) Publicly accessible alarm box	X	Semiannually	Actuate publicly accessible initiating device(s) and verify receipt of not less than three complete rounds of signal impulses. Perform this test under normal circuit conditions. If the device is equipped for open circuit operation (ground return), test it in this condition as one of the semiannual tests.
-		(2) Auxiliary box	X	Annually	Test each initiating circuit of the auxiliary box by actuation of a protected premises initiating device connected to that circuit. Verify receipt of not less than three

-	Component	Initial Acceptance	Periodic Frequency	Method
				complete rounds of signal impulses.
-	(3) Master box	-	-	-
-	(a) Manual operation	X	Semiannually	Perform the tests prescribed for 28(1).
-	(b) Auxiliary operation	X	Annually	Perform the tests prescribed for 28(2).
29.	Low-power radio (wireless systems)	X	N/A	The following procedures describe additional acceptance and reacceptance test methods to verify wireless protection system operation:
			-	-
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
30.	Mass notification systems	-	-	-
-	(1) Functions	X	Annually	At a minimum, test control unit to verify correct receipt of alarm, supervisory, and trouble signals

-	Component	Initial Acceptance	Periodic Frequency	Method
				(inputs); operation of evacuation signals and auxiliary functions (outputs); circuit supervision, including detection of open circuits and ground faults; and power supply supervision for detection of loss of ac power and disconnection of secondary batteries.
-	(2) Fuses	X	Annually	Verify the rating and supervision.
-	(3) Interfaced equipment	X	Annually	Verify integrity of single or multiple circuits providing interface between two or more control units. Test interfaced equipment connections by operating or simulating operation of the equipment being supervised. Verify signals required to be transmitted at the control unit.
-	(4) Lamps and LEDs	X	Annually	Illuminate lamps and LEDs.
-	(5) Primary (main) power supply	X	Annually	Disconnect all secondary (standby) power and test under maximum load, including all alarm appliances requiring simultaneous operation. Reconnect all secondary (standby) power at end of test. For redundant power supplies, test each separately.
-	(6) Audible textual notification appliances (loudspeakers and other appliances to convey voice messages)	X	Annually	Measure sound pressure level with a sound level meter meeting ANSI/ASAS1.4/Part 1, *Electroacoustics — Sound Level Meters — Part 1: Specifications,* Type 2 requirements.

-	Component	Initial Acceptance	Periodic Frequency	Method
				Measure and record levels throughout protected area. Set the sound level meter in accordance with ANSI/ASA S3.41, *Audible Emergency Evacuation (E2) and Evacuation Signals with Relocation Instructions (ESRI),* using the time-weighted characteristic F (FAST). Record the maximum output when the audible emergency evacuation signal is on.
-			-	-
-	(7) Visual	X	Annually	Perform test in accordance with manufacturer's published instructions. Verify appliance locations to be per approved layout and confirm that no floor plan changes affect the approved layout. Verify the candela rating or method of candela control marking on each visual appliance and rating when reported by the FACU agrees with the approved drawings. Confirm that each appliance flashes.
-	(8) Control unit functions and no diagnostic failures are indicated	X	Annually	Review event log file and verify that the correct events were logged. Review system diagnostic log file; correct deficiencies noted in file. Delete unneeded log files. Delete unneeded error files.

-	Component	Initial Acceptance	Periodic Frequency	Method
				Verify that sufficient free disk space is available. Verify unobstructed flow of cooling air is available. Change/clean filters, cooling fans, and intake vents.
-	(9) Control unit reset	X	Annually	Power down the central control unit computer and restart it.
-	(10) Control unit security	X	Annually	If remote control software is loaded onto the system, verify that it is disabled to prevent unauthorized system access.
-	(11) Audible/visual functional test	X	Annually	Send out an alert to a diverse set of predesignated receiving devices and confirm receipt. Include at least one of each type of receiving device.
-	(12) Software backup	X	Annually	Make full system software backup. Rotate backups based on accepted practice at site.
-	(13) Secondary power test	X	Annually	Disconnect ac power. Verify the ac power failure alarm status on central control unit. With ac power disconnected, verify battery voltage under load.
-	(14) Wireless signals	X	Annually	Check forward/reflected radio power is within specifications.
-	(15) Antenna	X	Annually	Check forward/reflected radio power is within specifications. Verify solid electrical connections with no observable corrosion.
-	(16) Transceivers	X	Annually	Verify proper operation and mounting is not

-	Component	Initial Acceptance	Periodic Frequency	Method
				compromised.

[a]Some transmission equipment (such as, but not limited to, cable modems, fiber-optic interface nodes, and VoIP interfaces) are typically powered by the building's electrical system using a secondary (standby) power supply that does not meet the requirements of this Code. This is intended to ensure that the testing authority verifies full secondary (standby) power as required by Chapter 10. Additionally, refer to Table 14.4.3.2, items 7 through 9, for secondary (standby) power supply testing.

[b]The automatic transmission of the check-in (handshake) signal can take up to 60 minutes to occur.

[c]See Table 14.4.3.2, Item 4(1) for the testing of transmission equipment.

[d]The battery tests in Table 14.4.3.2, Item 9, are based on VRLA batteries and it is the intent that the tests specified in (1) through (4) be performed in order. FACU automated load testing of VRLA batteries in accordance with Table 14.4.3.2, Item 9(5), with record of ambient temperature is an acceptable alternative to prescriptive manual methods using test equipment. For other secondary battery types, refer to the battery manufacturer's published instructions or IEEE 450, *Recommended Practice for Maintenance, Testing, and Replacement of Vented Lead-Acid Batteries for Stationary Applications*, for vented lead-acid batteries, and IEEE 1106, *Recommended Practice for Installation, Maintenance, Testing, and Replacement of Vented Nickel-Cadmium Batteries for Stationary Applications*, for nickel-cadmium batteries.

[e]If the charger is adjustable, adjust the output voltage to 2.265 volts per cell ±0.015 volts at 77°F (25°C) or as specified by the alarm equipment manufacturer.

[f]See A.14.4.3.2 Item 9(4). A load test per Item 9(5) is permitted in lieu of an ohmic test.

[g]See A.14.4.3.2 Item 9(5).

[h]The voltmeter sensitivity has been changed from 1000 ohms per volt to 100 ohms per volt so that the false ground readings (caused by induced voltages) are minimized.

[i]Initiating devices such as smoke detectors used for elevator recall, closing dampers, or releasing doors held in the open position that are permitted by the Code *(see9.6.3 of NFPA 101)* to initiate supervisory signals at the fire alarm control unit (FACU) should be tested at the same frequency (annual) as those devices when they are generating an alarm signal. They are not supervisory devices, but they initiate a supervisory signal at the FACU.

[j]Fusible thermal link detectors are commonly used to close fire doors and fire dampers electrically connected to the fire alarm control unit. They are actuated by the presence of external heat, which causes a solder element in the link to fuse, or by an electric thermal device, which, when energized, generates heat within the body of the link, causing the link to fuse and separate.

[k]Note, it is customary for the manufacturer of the smoke detector to test a particular product from an aerosol provider to determine acceptability for use in smoke entry testing of their smoke detector/smoke alarm. Magnets are not acceptable for smoke entry tests.

[l] There are some detectors that use magnets as a manufacturer's calibrated sensitivity test instrument.

[m]For example, it might not be possible to individually test the heat sensor in a thermally enhanced smoke detector.

[n]Manufacturer's published instructions should be consulted to ensure a proper operational test. No suppression gas or agent is expected to be discharged during the test of the solenoid. *See Test Plan of 14.2.10*.

[o]A monitor module installed on an interface device is not considered a supervisory device and

therefore not subject to the quarterly testing frequency requirement. Test frequencies for interface devices should be in accordance with the applicable standard. For example, fire pump controller alarms such as phase reversal are required to be tested annually. If a monitor module is installed to identify phase reversal on the fire alarm control unit, it is not necessary to test for phase reversal four times a year.

[p]Chapter 18 would require 15 dB over average ambient sound for public mode spaces. Sometimes the ambient sound levels are different from what the design was based upon. Private operating mode would require 10 dB over average ambient at the location of the device.

[q]Where building, system, or occupancy changes have been observed, the owner should be notified of the changes. New devices might need to be installed and tested per the initial acceptance testing criteria.

[r]See A.14.4.3.2 and Table 14.4.3.2, Item 24.

Statement of Problem and Substantiation for Public Input

The proposed change to this table is for the test method for air sampling detectors, referencing the transport time maximum limit in Chapter 17. This reference will assist testing personnel by providing them with a quick link to testing parameters that they need to be aware of, especially as this information is not in Chapter 14.

Submitter Information Verification

Submitter Full Name: Joe Scibetta
Organization: BuildingReports
Street Address:
City:
State:
Zip:
Submittal Date: Tue Apr 26 11:20:53 EDT 2022
Committee: SIG-TMS

Committee Statement

Resolution: It is not clear how air sample transport time would be measured. There are different standards for the measurement of transport times.

Public Input No. 281-NFPA 72-2022 [Section No. 14.4.3.2]

14.4.3.2*

Systems and associated equipment shall be tested according to Table 14.4.3.2.

Table 14.4.3.2 Testing

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At the top of the table on pages 93 - 101, add the word "Testing" in front of "Continued. The top header of each page after the first page of the table should read - "Table 14.4.3.2 Testing Continued".

	Component	Initial Acceptance	Periodic Frequency	Method	
1.	All equipment	X	-		See Table 14.3.1.
2.	Control unit	-	-	-	
	-	(1) Functions	X	Annually	Verify correct receipt of alarm, supervisory, and trouble signals (inputs); operation of evacuation signals and auxiliary functions (outputs); circuit supervision, including detection of open circuits and ground faults; and power supply supervision for detection of loss of ac power and disconnection of secondary batteries.
	-	(2) Fuses	X	Annually	Verify rating and supervision.
	-	(3) Interfaced equipment	X	Annually	Verify integrity of single or multiple circuits providing interface between two or more control units. Test interfaced equipment connections by operating or simulating operation of the equipment being supervised. Verify signals required to be transmitted at the control unit.
	-	(4) Lamps and LEDs	X	Annually	Illuminate lamps and LEDs.
	-	(5) Primary (main) power supply	X	Annually	Disconnect all secondary (standby) power and test under maximum load, including all alarm appliances requiring simultaneous operation. Reconnect all secondary (standby) power at end of test. Test

	Component	Initial Acceptance	Periodic Frequency		Method	
						redundant power supplies separately.
3.	Alarm control unit trouble signals	-	-	-		
	-	(1) Audible and visual		X	Annually	Verify operation of control unit trouble signals. Verify ring-back feature for systems using a trouble-silencing switch that requires resetting.
	-	(2) Disconnect switches		X	Annually	If control unit has disconnect or isolating switches, verify performance of intended function of each switch. Verify receipt of trouble signal when a supervised function is disconnected.
	-	(3) Ground-fault monitoring circuit		X	Annually	If the system has a ground detection feature, verify the occurrence of ground-fault indication whenever any installation conductor is grounded.
	-	(4) Transmission of signals to off-premises location		X	Annually	Actuate an initiating device and verify receipt of alarm signal at the off-premises location.
				-		- -
				-		- -

	Component	Initial Acceptance	Periodic Frequency	Method	
4.	Supervising station alarm systems — transmission equipment	-	-	-	
	-	(1) All equipment	X	Annually	[a]Test all system functions and features in accordance with the equipment manufacturer's published instructions for correct operation in conformance with the applicable sections of Chapter 26.
				-	-
				-	-

Component	Initial Acceptance	Periodic Frequency	Method	
-	(2) Digital alarm communicator transmitter (DACT)	X	Annually	Except for DACTs installed prior to adoption of the 2013 edition of NFPA 72 that are connected to a telephone line (number) that is also supervised for adverse conditions by a derived local channel, ensure connection of the DACT to two separate means of transmission.

Component	Initial Acceptance	Periodic Frequency	Method

Component	Initial Acceptance	Periodic Frequency	Method	
	(3) Digital alarm radio transmitter (DART)	X	Annually	Disconnect the primary telephone line. Verify transmission of a trouble signal to the supervising station by the DART occurs within 4 minutes.
	(4) McCulloh transmitter	X	Annually	Actuate initiating device. Verify production of not less than three complete rounds of not less than three signal impulses each by the McCulloh transmitter.

Component	Initial Acceptance	Periodic Frequency	Method	
			(2) Ground	
			(2) Ground	
-	(5) Radio alarm transmitter (RAT)	X	Annually	Cause a fault between elements of the transmitting equipment. Verify indication of the fault at the protected premises, or transmission of trouble signal to the supervising station.
-	(6) Performance-based technologies	X	Annually	Perform tests to ensure the monitoring of integrity of the transmission technology and technology path.

Component	Initial Acceptance	Periodic Frequency	Method	
				Where shared communications equipment is used as permitted by 26.6.3.12, provided secondary (standby) power sources shall be tested in accordance with Table 14.4.3.2, item 7, 8, or 9, as applicable.

	Component	Initial Acceptance	Periodic Frequency	Method	
5.	Emergency communications equipment	-	-	-	
	-	(1) Amplifier/tone generators	X	Annually	Verify correct switching and operation of backup equipment.
	-	(2) Call-in signal silence	X	Annually	Operate/function and verify receipt of correct visual and audible signals at control unit.
	-	(3) Off-hook indicator (ring down)	X	Annually	Install phone set or remove phone from hook and verify receipt of signal at control unit.
	-	(4) Phone jacks	X	Annually	Visually inspect phone jack and initiate communications path through jack.
	-	(5) Phone set	X	Annually	Actuate each phone set and verify correct operation.
	-	(6) System performance	X	Annually	Operate the system with a minimum of any five handsets simultaneously. Verify voice quality and clarity.
6.	Engine-driven generator	X	Monthly	If an engine-driven generator dedicated to the system is used as a required power source, verify operation of the generator and transfer switch in accordance with NFPA 110 by the building owner.	
7.	Emergency power supply system/stored-emergency power supply	X	Annually	If an EPSS/SEPSS dedicated to the system is used as a required	

	Component	Initial Acceptance	Periodic Frequency	Method	
	system (EPSS/SEPSS)			power source, verify by the building owner operation of the EPSS/SEPSS in accordance with NFPA 111.	
8.	Secondary (standby) power supply[c]	X	Annually	Disconnect all primary (main) power supplies and verify the occurrence of required trouble indication for loss of primary power. Measure or verify the system's standby and alarm current demand using the equipment manufacturer's data and verify the battery's rated capacity exceeds the system's power demand, including the safety margin. Operate general alarm systems a minimum of 5 minutes and emergency voice communications systems for a minimum of 15 minutes. Reconnect primary (main) power supply at end of test.	
9.	VRLA battery and charger[d]	-	-		Prior to conduct any bat testing, by the p conduct test, tha system softwar stored i volatile

Component	Initial Acceptance	Periodic Frequency	Method	
				memory protecte loss.
-	(1) Temperature test	X	Semiannually	Upon initially opening the cabinet door, measure the internal ambient temperature of the enclosure. Measure the temperature of each battery cell/unit at the negative terminal with an infrared thermometer. Replace any battery cell/unit if its temperature is greater than 18°F (10°C) above the measured internal ambient temperature of the enclosure.
-	(2) Charger test[e]	X	Semiannually	With the battery fully charged and connected to the charger, measure the voltage across the battery with a voltmeter. Verify the voltage is within the battery/alarm equipment manufacturer's recommendations. If the voltage is outside of the specified limits, either adjust the charger to within limits or replace the charger.
-	(3) Cell/Unit voltage test	X	Semiannually	With the battery fully charged and connected to the charger, measure the voltage of each cell/unit with a voltmeter. Replace the battery when any cell/unit measures a voltage less than 13.26 volts.
-	(4) Ohmic test[f]	X	N/A	When the battery is installed, establish a baseline ohmic value for each battery cell/unit or where available use baseline

Component	Initial Acceptance	Periodic Frequency	Method	
				ohmic values provided by the battery or test equipment manufacturer. In either case record the base line ohmic value on each battery cell/unit.
		-	-	- Semiar
-	(5) Replacement/Load test[g]	-	3 years	Replace battery conduct test of t

	Component	Initial Acceptance	Periodic Frequency	Method	
					battery capacity test the based o manufa specific for a dis rate of 3 or more applyin current indicate the sele hourly dischar continu until the termina voltage decreas the end voltage specifie the manufa Record test dur and cal the batt capacity includin adjustm ambien tempera Replace battery capacity less tha equal to or at the schedul interval battery capacity less tha
10.	Public emergency alarm reporting system — wired system	X	Daily	Manual tests of the power supply for public reporting circuits shall be made and recorded at least once during each 24-hour period. Such tests shall include the	

Component	Initial Acceptance	Periodic Frequency	Method
			following:

Component	Initial Acceptance	Periodic Frequency	Method

	Component	Initial Acceptance	Periodic Frequency	Method	
11.	Remote annunciators	X	Annually	Verify the correct operation and identification of annunciators. If provided, verify the correct operation of annunciator under a fault condition.	
12.	Reserved	-	-	-	
13.	Reserved	-	-	-	
14.	Wireless communications	X	Annually	Test per the manufacturer's published instructions.	
15.	Conductors — metallic	-	-	-	
	-	(1) Stray voltage	X	N/A	Test all installation conductors with a volt/ohmmeter to verify that there are no stray (unwanted) voltages between installation conductors or between installation conductors and ground. Verify the maximum allowable stray voltage does not exceed 1 volt ac/dc, unless a different threshold is specified in the manufacturer's published instructions for the installed equipment.
	-	(2) Ground faults	X	N/A	Test all installation conductors, other than those intentionally and permanently grounded, for isolation from ground per the installed equipment manufacturer's published instructions.

Component	Initial Acceptance	Periodic Frequency	Method		
-	(3) Short-circuit faults	X	N/A	Test all installation conductors, other than those intentionally connected together, for conductor-to-conductor isolation per the manufacturer's published instructions for the installed equipment. Also test these same circuits conductor-to-ground.	
-	(4) Loop resistance	X	N/A	With each initiating and indicating circuit installation conductor pair short-circuited at the far end, measure and record the resistance of each circuit. Verify that the loop resistance does not exceed the limits specified in the manufacturer's published instructions for the installed equipment.	
-	(5) Circuit integrity	X	N/A	For initial and reacceptance testing, confirm the introduction of a fault in any circuit monitored for integrity results in a trouble indication at the fire alarm control unit. Open one connection at not less than 10 percent of the initiating devices, notification appliances and controlled devices on every initiating device circuit, notification appliance circuit, and signaling line circuit. Confirm all circuits perform as indicated in Sections 23.5, 23.6, and 23.7.	
	-	-	N/A	Annually	For peri testing, each ini device c

Component	Initial Acceptance	Periodic Frequency	Method		
					notificat applian circuit, a signalin circuit fo correct indicatio the con unit. Co all circu perform indicate Section 23.6, ar 23.7.
16. Nonmetallic pathways	-	-	-		
-	(1) Optical fiber cables	X	N/A	Test the transmission characteristics of optical fibers by the use of an optical power meter or by an optical time domain reflectometer used to measure the relative power loss of the line. Test result data must meet or exceed ANSI/TIA 568.3, *Optical Fiber Cabling and Components Standard*, related to fiber-optic lines and connection/splice losses and the control unit manufacturer's published specifications.	
-	(2) Circuit integrity	X	N/A	For initial and reacceptance testing, confirm the introduction of a fault in any circuit monitored for integrity results in a trouble indication at the fire alarm control unit. Open one connection at not less than 10 percent of the initiating devices, notification appliances, and controlled devices on every initiating device circuit, notification appliance circuit, and	

Component	Initial Acceptance	Periodic Frequency	Method		
				signaling line circuit. Confirm all circuits perform as indicated in Sections 23.5, 23.6, and 23.7.	
	-	-	N/A	Annually	For peri testing, each ini device notificat applian circuit, signalin circuit f correct indicati the con unit. Co all circu perform indicate Section 23.6, ar 23.7.
17. Initiating devices[i]	-	-	-		
-	(1) Electromechanical releasing device	-	-	-	
-	(a) Nonrestorable-type link	X	Annually	Verify correct operation by removal of the fusible link and operation of the associated device.	
-	(b) Restorable-type link[j]	X	Annually	Verify correct operation by removal of the fusible link and operation of the associated device.	
-	(2) Fire extinguishing system(s) or suppression system(s) alarm switch	X	Annually	Operate the switch mechanically or electrically and verify receipt of signal by the fire alarm control unit.	
-	(3) Fire–gas and other detectors	X	Annually	Test fire–gas detectors and other fire detectors as prescribed by the manufacturer and as necessary for the application.	
-	(4) Heat detectors	-	-	-	

Component	Initial Acceptance	Periodic Frequency	Method	
-	(a) Fixed-temperature, rate-of-rise, rate of compensation, restorable line, spot type (excluding pneumatic tube type)	X	Annually (see 14.4.4.5)	Perform heat test with a listed and labeled heat source or in accordance with the manufacturer's published instructions. Assure that the test method for the installed equipment does not damage the nonrestorable fixed-temperature element of a combination rate-of-rise/fixed-temperature element detector.
-	(b) Fixed-temperature, nonrestorable line type	X	Annually	Do not perform heat test. Test functionality mechanically and electrically. Measure and record loop resistance. Investigate changes from acceptance test.
-	(c) Fixed-temperature, nonrestorable spot type	X	See Method	After 15 years from initial installation, replace all devices or have 2 detectors per 100 laboratory tested. Replace the 2 detectors with new devices. If a failure occurs on any of the detectors removed, remove and test additional detectors to determine either a general problem involving faulty detectors or a localized problem involving 1 or 2 defective detectors.
			-	-
			-	-
- -	-	-	-	

Component	Initial Acceptance	Periodic Frequency	Method	
-	(d) Restorable line type, pneumatic tube only	X	Annually	Perform heat tests (where test chambers are in circuit), with a listed and labeled heat source or in accordance with the manufacturer's published instructions of the detector or conduct a test with pressure pump.
-	(e) Single- and multiple-station heat alarms	X	Annually	Conduct functional tests according to manufacturer’s published instructions. Do not test nonrestorable heat detectors with heat.
-	(5) Manual fire alarm boxes	X	Annually	Operate manual fire alarm boxes per the manufacturer’s published instructions. Test both key-operated presignal and general alarm manual fire alarm boxes.
-	(6) Radiant energy fire detectors	X	Semiannually	Test flame detectors and spark/ember detectors in accordance with the manufacturer’s published instructions to determine that each detector is operative.
			-	- -
			-	- -
			-	- -
			-	- -

Component	Initial Acceptance	Periodic Frequency	Method	
-	(7) Smoke detectors — functional test	-	-	-
-	(a) In other than one- and two-family dwellings, system detectors	X	Annually	[k]Test smoke detectors in place to ensure smoke entry into the sensing chamber and an alarm response. Use smoke or a listed and labeled product acceptable to the manufacturer or in accordance with their published instructions. Other methods listed

Component	Initial Acceptance	Periodic Frequency	Method	
				in the manufacturer's published instructions that ensure smoke entry from the protected area, through the vents, into the sensing chamber can be used.
-	(b) Single- and multiple-station smoke alarms connected to protected premises systems	X	Annually	Perform a functional test on all single- and multiple-station smoke alarms connected to a protected premises fire alarm system by putting the smoke alarm into an alarm condition.
-	(c) System smoke detectors used in one- and two-family dwellings	X	Annually	Conduct functional tests according to manufacturer’s published instructions.
-	(d) Air sampling	X	Annually	Test with smoke or a listed and labeled product acceptable to the manufacturer or in accordance with their published instructions. In the absence of an automatic, listed airflow supervision feature, test from the end sampling port or point on each pipe run and verify airflow through all other ports or points.
-	(e) Duct type	X	Annually	In addition to the testing required in Table 14.4.3.2(17)(7)(a) and Table 14.4.3.2(17)(8), test duct smoke detectors that use sampling tubes to ensure that they will properly sample the airstream in the duct using a method acceptable to the manufacturer or in accordance with their published instructions.
-	(f) Projected beam type	X	Annually	Test the detector by introducing smoke, other aerosol, or an

Component	Initial Acceptance	Periodic Frequency	Method	
				optical filter into the beam path.
-	(g) Smoke detector with built-in thermal element	X	Annually	Operate both portions of the detector independently as described for the respective devices.
-	(h) Smoke detectors with control output functions	X	Annually	Verify that the control capability remains operable even if all of the initiating devices connected to the same initiating device circuit or signaling line circuit are in an alarm state.
-	(8) Smoke detectors — sensitivity testing	-	-	-
-	In other than one- and two-family dwellings, system detectors	N/A	See 14.4.4.4.3	[I]Perform any of the following tests to ensure that each smoke detector is within its listed and marked sensitivity range:
			-	- -
			-	- -
			-	- -
			-	- -
			-	- -

Component	Initial Acceptance	Periodic Frequency	Method	
-	(9) Carbon monoxide detectors/carbon monoxide alarms connected to protected premises systems	-	-	-
-	(a) CO entry test	X	Annually	Test the devices in place to ensure CO entry to the sensing chamber by introduction through the vents, to the sensing chamber of listed and labeled product acceptable to the manufacturer or in accordance with manufacturer's published instructions
-	(b) Air sampling	X	Annually	Per test methods documented in the manufacturer's published instructions, verify detector alarm response through the end sampling port on each pipe run; verify airflow through all other ports as well.
-	(c) Duct type	X	Annually	Test or inspect air duct detectors to ensure that the device will sample the airstream in accordance with the manufacturer's published instructions.
-	(d) CO detector with control output functions	X	Annually	Within each protected space, verify that the control capability remains operable even if all of the initiating devices connected to the same initiating device circuit or signaling line circuit are in an alarm state.
-	(10) Initiating devices, supervisory	-	-	-

Component	Initial Acceptance	Periodic Frequency	Method	
-	(a) Control valve switch	X	Semiannual	Operate valve and verify signal receipt to be within the first two revolutions of the handwheel or within one-fifth of the travel distance, or per the manufacturer's published instructions. Continue to cycle outside stem and yoke valves and verify switch does not reset during full travel of the valve stem.
-	(b) High- or low-air pressure switch	X	Annually	Operate switch and verify receipt of signal is obtained where the required pressure is increased or decreased a maximum 10 psi (70 kPa) from the required pressure level or in accordance with manufacturer's published instructions.
-	(c) Steam pressure	X	Annually	Operate switch and verify receipt of signal is obtained before pressure decreases to 110 percent of the minimum operating pressure of the steam-operated equipment.
-	(d) Pressure supervisory devices for other sources	X	Annually	Operate switch and verify receipt of signal is obtained where the required pressure is increased or decreased from the normal operating pressure by an amount specified in approved design documents.
-	(e) Room temperature switch	X	Annually	Operate switch and verify receipt of signal to indicate the decrease in room temperature to 40°F (4.4°C) and its restoration to above 40°F (4.4°C).

Component	Initial Acceptance	Periodic Frequency	Method	
-	(f) Water level switch	X	Annually	Operate switch and verify receipt of signal indicating the water level raised or lowered a maximum 3 in. (70 mm) from the required level within a pressure tank, or a maximum 12 in. (300 mm) from the required level of a nonpressure tank. Also verify its restoral to required level.
-	(g) Water temperature switch	X	Annually	Operate switch and verify receipt of signal to indicate the decrease in water temperature to 40°F (4.4°C) and its restoration to above 40°F (4.4°C).
-	(11) Mechanical, electrosonic, or pressure-type waterflow device	X	Semiannually	Water shall be flowed through an inspector's test connection indicating the flow of water equal to that from a single sprinkler of the smallest orifice size installed in the system or other listed and approved waterflow switch test methods for wet-pipe systems, or an alarm test bypass connection for dry-pipe, pre-action, or deluge systems in accordance with NFPA 25.
-	(12) Multi-sensor fire detector or multi-criteria fire detector or combination fire detector	X	Annually	1. Test each detector in accordance with the manufacturer’s published instructions. Test each of the sensors present within the detector (e.g., smoke/heat/CO, etc.) independently for the specific detection principle, regardless of the configuration status at the time of testing, or individual sensors together if the technology allows

Component	Initial Acceptance	Periodic Frequency	Method	
				individual sensor responses to be verified, or where sensors cannot be tested individually, test the primary sensor.[m]
-		-	-	-
-		-	-	
			-	-
-		-	-	
-		-	-	-
-		-	-	

	Component	Initial Acceptance	Periodic Frequency	Method	
18.	Special hazard equipment	-	-	-	
	-	(1) Abort switch (dead-man type)	X	Annually	Operate abort switch and verify correct sequence and operation.
	-	(2) Abort switch (recycle type)	X	Annually	Operate abort switch and verify development of correct matrix with each sensor operated.
	-	(3) Abort switch (special type)	X	Annually	Operate abort switch and verify correct sequence and operation in accordance with authority having jurisdiction. Observe sequencing as specified on as-built drawings or in system owner's manual.
	-	(4) Cross-zone detection circuit	X	Annually	Operate one sensor or detector on each zone. Verify occurrence of correct sequence with operation of first zone and then with operation of second zone.
	-	(5) Matrix-type circuit	X	Annually	Operate all sensors in system. Verify development of correct matrix with each sensor operated.
	-	(6) Release solenoid circuit[n]	X	Annually	Verify operation of solenoid.
	-	(7) Squibb release circuit	X	Annually	Use AGI flashbulb or other test light approved by the manufacturer. Verify operation of flashbulb or light.
	-	(8) Verified, sequential, or counting zone circuit	X	Annually	Operate required sensors at a minimum of four locations in circuit. Verify correct sequence with both the first and second detector in alarm.

	Component	Initial Acceptance	Periodic Frequency	Method	
-		(9) All above devices or circuits or combinations thereof	X	Annually	Verify supervision of circuits by creating an open circuit.
19.	Combination systems	-	-	-	
-		(1) Fire extinguisher electronic monitoring device/system	X	Annually	Test communication between the device connecting the fire extinguisher electronic monitoring device/system and the fire alarm control unit to ensure proper signals are received at the fire alarm control unit and remote annunciator(s) if applicable.
-		(2) Carbon monoxide device/system	X	Annually	Test communication between the device connecting the carbon monoxide device/system and the fire alarm control unit to ensure proper signals are received at the fire alarm control unit and remote annunciator(s) if applicable.
20.	Interface equipment[o]	X	See 14.4.4.4	Test interface equipment connections by operating or simulating the equipment being supervised. Verify signals required to be transmitted are received at the control unit. Test frequency for interface equipment is the same as the frequency required by the applicable NFPA standard(s) for the equipment being supervised.	

	Component	Initial Acceptance	Periodic Frequency	Method		
21.	Guard's tour equipment	X	Annually	Test the device in accordance with the manufacturer's published instructions.		
22.	Alarm notification appliances	-	-	-		
	-	(1) Audible[p]	X	N/A	For initial and reacceptance testing, measure sound pressure levels for alert tone signals and evacuation signal tones with a sound level meter meeting ANSI/ASAS1.4/Part 1, *Electroacoustics — Sound Level Meters — Part 1: Specifications,* Type 2 requirements. Measure sound pressure levels to determine if they are in compliance with Chapter 18 and the required performance, as documented per 7.3.4. Set the sound level meter in accordance with ANSI/ASA S3.41, *Audible Emergency Evacuation (E2) and Evacuation Signals with Relocation Instructions (ESRI),* using the time-weighted characteristic F (FAST).	
		-	-	N/A	Annually	[q]For pe testing, the ope of the notificat applian
	-	(2) Audible textual notification appliances (loudspeakers and other appliances to convey voice messages)	X	N/A	For initial and reacceptance testing, measure sound pressure levels for signals with a sound level meter meeting ANSI/ASAS1.4/Part 1,	

Component	Initial Acceptance	Periodic Frequency	Method		
				Electroacoustics — Sound Level Meters — Part 1: Specifications, Type 2 requirements. Measure sound pressure levels throughout the protected area to determine if they are in compliance with Chapter 18 and the required performance, as documented per 7.3.4. Set the sound level meter in accordance with ANSI/ASA S3.41, *Audible Emergency Evacuation (E2) and Evacuation Signals with Relocation Instructions (ESRI),* using the time-weighted characteristic F (FAST).	
-	-	-	-	-	-
	-	-	N/A	Annually	[q]For pe testing, the ope of the notificat applian
-	(3) Visual	X	N/A	Perform initial and reacceptance testing in accordance with the manufacturer's published instructions. Verify appliance locations to be per approved layout and confirm that no floor plan changes affect the approved layout. Verify the candela rating or method of candela control marking on each visual appliance and rating when reported	

	Component	Initial Acceptance	Periodic Frequency	Method		
					by the FACU agrees with the approved drawings. Confirm that each appliance flashes.	
	-		-	N/A	Annually	For peri testing, that eac applian flashes.
23.	Exit marking audible notification appliance	X	Annually	Perform tests in accordance with manufacturer's published instructions.		
24.	Emergency control functions[r]	X	Annually	For initial, reacceptance, and periodic testing, verify emergency control function interface device activation. Where an emergency control function interface device is disabled or disconnected during initiating device testing, verify that the disabled or disconnected emergency control function interface device has been properly restored, including electromagnetic devices used for door releasing services as part of a fire alarm system.		
25.	Two-way emergency communications systems	X	Annually	Use the manufacturer's published instructions and the as-built drawings provided by the		

Component	Initial Acceptance	Periodic Frequency	Method
			system supplier to verify correct operation after the initial testing phase has been performed by the supplier or by the supplier's designated representative.

	Component	Initial Acceptance	Periodic Frequency	Method	
26.	Special procedures				
		(1) Alarm verification	X	Annually	Verify time delay and alarm response for smoke detector circuits identified as having alarm verification.
		(2) Multiplex systems	X	Annually	Verify communications between sending and receiving units under both primary and secondary power.

Component	Initial Acceptance	Periodic Frequency	Method	
27. Supervising station alarm systems — receiving equipment				
	(1) All equipment	X	Monthly	Perform tests on all system functions and features in accordance with the equipment manufacturer's published instructions for correct operation in conformance with the applicable sections of Chapter 26.
	(2) Digital alarm communicator receiver (DACR)	X	Monthly	Disconnect each transmission means in turn from the DACR, and verify audible and visual annunciation of a trouble signal in the supervising station.

Component	Initial Acceptance	Periodic Frequency	Method	
	(3) Digital alarm radio receiver (DARR)	X	Monthly	Cause the following conditions of all DARRs on all subsidiary and repeater station receiving equipment. Verify receipt at the supervising station of correct signals for each of the following conditions:
	(4) McCulloh systems	X	Monthly	Test and record the current on each circuit at each supervising and subsidiary station under the following conditions:

Component	Initial Acceptance	Periodic Frequency	Method	

Component	Initial Acceptance	Periodic Frequency	Method	
	receiver (RARSR)			and all repeater station radio transmitting and receiving equipment; verify receipt of correct signals at the supervising station:
				- - -
				- - -
				- - -
-	(6) Private microwave radio systems	X	Monthly	Cause each of the following conditions at each of the supervising or subsidiary stations and all repeater station radio transmitting and receiving equipment; verify receipt of correct signals at the supervising station:
				- - -
				- - -
				- - -
				- - -
-	(7) Performance-based technologies	X	Monthly	Perform tests to ensure the monitoring of integrity of the transmission technology and technology path. Where a single communications path is used, disconnect the communication path. Verify that failure of the path is annunciated at the supervising station

	Component	Initial Acceptance	Periodic Frequency	Method	
					within 60 minutes of the failure (within 5 minutes for communication equipment installed prior to adoption of the 2013 edition of *NFPA 72*). Restore the communication path. Where multiple communication paths are used, disconnect both communication paths and confirm that failure of the path is annunciated at the supervising station within not more than 6 hours of the failure (within 24 hours for communication equipment installed prior to adoption of the 2013 edition of *NFPA 72*). Restore both communication paths.
28.	Public emergency alarm reporting system transmission equipment	-	-	-	
	-	(1) Publicly accessible alarm box	X	Semiannually	Actuate publicly accessible initiating device(s) and verify receipt of not less than three complete rounds of signal impulses. Perform this test under normal circuit conditions. If the device is equipped for open circuit operation (ground return), test it in this condition as one of the semiannual tests.
	-	(2) Auxiliary box	X	Annually	Test each initiating circuit of the auxiliary box by actuation of a protected premises initiating device connected to that circuit. Verify receipt of not less than three

Component	Initial Acceptance	Periodic Frequency	Method	
				complete rounds of signal impulses.
-	(3) Master box	-	-	-
-	(a) Manual operation	X	Semiannually	Perform the tests prescribed for 28(1).
-	(b) Auxiliary operation	X	Annually	Perform the tests prescribed for 28(2).
29. Low-power radio (wireless systems)	X	N/A	The following procedures describe additional acceptance and reacceptance test methods to verify wireless protection system operation:	
-			-	-
-			-	-
-			-	-

Component	Initial Acceptance	Periodic Frequency	Method

Component	Initial Acceptance	Periodic Frequency	Method	

Component	Initial Acceptance	Periodic Frequency	Method	
				(inputs); operation of evacuation signals and auxiliary functions (outputs); circuit supervision, including detection of open circuits and ground faults; and power supply supervision for detection of loss of ac power and disconnection of secondary batteries.
-	(2) Fuses	X	Annually	Verify the rating and supervision.
-	(3) Interfaced equipment	X	Annually	Verify integrity of single or multiple circuits providing interface between two or more control units. Test interfaced equipment connections by operating or simulating operation of the equipment being supervised. Verify signals required to be transmitted at the control unit.
-	(4) Lamps and LEDs	X	Annually	Illuminate lamps and LEDs.
-	(5) Primary (main) power supply	X	Annually	Disconnect all secondary (standby) power and test under maximum load, including all alarm appliances requiring simultaneous operation. Reconnect all secondary (standby) power at end of test. For redundant power supplies, test each separately.
-	(6) Audible textual notification appliances (loudspeakers and other appliances to convey voice messages)	X	Annually	Measure sound pressure level with a sound level meter meeting ANSI/ASAS1.4/Part 1, *Electroacoustics — Sound Level Meters — Part 1: Specifications,* Type 2 requirements.

Component	Initial Acceptance	Periodic Frequency	Method	
				Measure and record levels throughout protected area. Set the sound level meter in accordance with ANSI/ASA S3.41, *Audible Emergency Evacuation (E2) and Evacuation Signals with Relocation Instructions (ESRI),* using the time-weighted characteristic F (FAST). Record the maximum output when the audible emergency evacuation signal is on.
-	(7) Visual	X	Annually	Perform test in accordance with manufacturer's published instructions. Verify appliance locations to be per approved layout and confirm that no floor plan changes affect the approved layout. Verify the candela rating or method of candela control marking on each visual appliance and rating when reported by the FACU agrees with the approved drawings. Confirm that each appliance flashes.
-	(8) Control unit functions and no diagnostic failures are indicated	X	Annually	Review event log file and verify that the correct events were logged. Review system diagnostic log file; correct deficiencies noted in file. Delete unneeded log files. Delete unneeded error files.

Component	Initial Acceptance	Periodic Frequency	Method	
				Verify that sufficient free disk space is available. Verify unobstructed flow of cooling air is available. Change/clean filters, cooling fans, and intake vents.
-	(9) Control unit reset	X	Annually	Power down the central control unit computer and restart it.
-	(10) Control unit security	X	Annually	If remote control software is loaded onto the system, verify that it is disabled to prevent unauthorized system access.
-	(11) Audible/visual functional test	X	Annually	Send out an alert to a diverse set of predesignated receiving devices and confirm receipt. Include at least one of each type of receiving device.
-	(12) Software backup	X	Annually	Make full system software backup. Rotate backups based on accepted practice at site.
-	(13) Secondary power test	X	Annually	Disconnect ac power. Verify the ac power failure alarm status on central control unit. With ac power disconnected, verify battery voltage under load.
-	(14) Wireless signals	X	Annually	Check forward/reflected radio power is within specifications.
-	(15) Antenna	X	Annually	Check forward/reflected radio power is within specifications. Verify solid electrical connections with no observable corrosion.
-	(16) Transceivers	X	Annually	Verify proper operation and mounting is not

Component	Initial Acceptance	Periodic Frequency	Method
			compromised.

[a]Some transmission equipment (such as, but not limited to, cable modems, fiber-optic interface nodes, and VoIP interfaces) are typically powered by the building's electrical system using a secondary (standby) power supply that does not meet the requirements of this Code. This is intended to ensure that the testing authority verifies full secondary (standby) power as required by Chapter 10. Additionally, refer to Table 14.4.3.2, items 7 through 9, for secondary (standby) power supply testing.

[b]The automatic transmission of the check-in (handshake) signal can take up to 60 minutes to occur.

[c]See Table 14.4.3.2, Item 4(1) for the testing of transmission equipment.

[d]The battery tests in Table 14.4.3.2, Item 9, are based on VRLA batteries and it is the intent that the tests specified in (1) through (4) be performed in order. FACU automated load testing of VRLA batteries in accordance with Table 14.4.3.2, Item 9(5), with record of ambient temperature is an acceptable alternative to prescriptive manual methods using test equipment. For other secondary battery types, refer to the battery manufacturer's published instructions or IEEE 450, *Recommended Practice for Maintenance, Testing, and Replacement of Vented Lead-Acid Batteries for Stationary Applications*, for vented lead-acid batteries, and IEEE 1106, *Recommended Practice for Installation, Maintenance, Testing, and Replacement of Vented Nickel-Cadmium Batteries for Stationary Applications*, for nickel-cadmium batteries.

[e]If the charger is adjustable, adjust the output voltage to 2.265 volts per cell ±0.015 volts at 77°F (25°C) or as specified by the alarm equipment manufacturer.

[f]See A.14.4.3.2 Item 9(4). A load test per Item 9(5) is permitted in lieu of an ohmic test.

[g]See A.14.4.3.2 Item 9(5).

[h]The voltmeter sensitivity has been changed from 1000 ohms per volt to 100 ohms per volt so that the false ground readings (caused by induced voltages) are minimized.

[i]Initiating devices such as smoke detectors used for elevator recall, closing dampers, or releasing doors held in the open position that are permitted by the Code *(see9.6.3 of NFPA 101)* to initiate supervisory signals at the fire alarm control unit (FACU) should be tested at the same frequency (annual) as those devices when they are generating an alarm signal. They are not supervisory devices, but they initiate a supervisory signal at the FACU.

[j]Fusible thermal link detectors are commonly used to close fire doors and fire dampers electrically connected to the fire alarm control unit. They are actuated by the presence of external heat, which causes a solder element in the link to fuse, or by an electric thermal device, which, when energized, generates heat within the body of the link, causing the link to fuse and separate.

[k]Note, it is customary for the manufacturer of the smoke detector to test a particular product from an aerosol provider to determine acceptability for use in smoke entry testing of their smoke detector/smoke alarm. Magnets are not acceptable for smoke entry tests.

[l] There are some detectors that use magnets as a manufacturer's calibrated sensitivity test instrument.

[m]For example, it might not be possible to individually test the heat sensor in a thermally enhanced smoke detector.

[n]Manufacturer's published instructions should be consulted to ensure a proper operational test. No suppression gas or agent is expected to be discharged during the test of the solenoid. *See Test Plan of 14.2.10*.

[o]A monitor module installed on an interface device is not considered a supervisory device and

therefore not subject to the quarterly testing frequency requirement. Test frequencies for interface devices should be in accordance with the applicable standard. For example, fire pump controller alarms such as phase reversal are required to be tested annually. If a monitor module is installed to identify phase reversal on the fire alarm control unit, it is not necessary to test for phase reversal four times a year.

[p]Chapter 18 would require 15 dB over average ambient sound for public mode spaces. Sometimes the ambient sound levels are different from what the design was based upon. Private operating mode would require 10 dB over average ambient at the location of the device.

[q]Where building, system, or occupancy changes have been observed, the owner should be notified of the changes. New devices might need to be installed and tested per the initial acceptance testing criteria.

[r]See A.14.4.3.2 and Table 14.4.3.2, Item 24.

Statement of Problem and Substantiation for Public Input

Currently on pages 93 - 101 for table 14.4.3.2 the heading reads "Table 14.4.3.2 Continued". I think it would be more clear to the user if the word "Testing" was included before "Continued" so that the user does not confuse Table 14.3.1 with 14.4.3.2.

This is in conjunction with PI 280

PS, Please do not eliminate the tables in Chapter 14!

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Submittal Date: Thu May 12 16:44:12 EDT 2022
Committee: SIG-TMS

Committee Statement

Resolution: Formatting of tables that appear on multiple pages is not within the purview of the technical committee. This suggestion has been passed on to NFPA staff.

Public Input No. 30-NFPA 72-2021 [Section No. 14.4.3.2]

14.4.3.2*

Systems and associated equipment shall be tested according to Table 14.4.3.2.

Table 14.4.3.2 Testing

-	Component	Initial Acceptance	Periodic Frequency	Method
1. All equipment	X	-		See Table 14.3.1.
2. Control unit	-	-	-	
-	(1) Functions	X	Annually	Verify correct receipt of alarm, supervisory, and trouble signals (inputs); operation of evacuation signals and auxiliary functions (outputs); circuit supervision, including detection of open circuits and ground faults; and power supply supervision for detection of loss of ac power and disconnection of secondary batteries.
-	(2) Fuses	X	Annually	Verify rating and supervision.
-	(3) Interfaced equipment	X	Annually	Verify integrity of single or multiple circuits providing interface between two or more control units. Test interfaced equipment connections by operating or simulating operation of the equipment being supervised. Verify signals required to be transmitted at the control unit.
-	(4) Lamps and LEDs	X	Annually	Illuminate lamps and LEDs.
-	(5) Primary (main) power supply	X	Annually	Disconnect all secondary (standby) power and test under maximum load, including all alarm appliances requiring simultaneous operation. Reconnect all secondary (standby) power at end of test. Test redundant power supplies separately.

-	Component	Initial Acceptance	Periodic Frequency	Method
3.	Alarm control unit trouble signals	-	-	-
-	(1) Audible and visual	X	Annually	Verify operation of control unit trouble signals. Verify ring-back feature for systems using a trouble-silencing switch that requires resetting.
-	(2) Disconnect switches	X	Annually	If control unit has disconnect or isolating switches, verify performance of intended function of each switch. Verify receipt of trouble signal when a supervised function is disconnected.
-	(3) Ground-fault monitoring circuit	X	Annually	If the system has a ground detection feature, verify the occurrence of ground-fault indication whenever any installation conductor is grounded.
-	(4) Transmission of signals to off-premises location	X	Annually	Actuate an initiating device and verify receipt of alarm signal at the off-premises location.
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
4. Supervising station alarm systems — transmission equipment	-	-	-	
-	(1) All equipment	X	Annually	[a]Test all system functions and features in accordance with the equipment manufacturer's published instructions for correct operation in conformance with the applicable sections of Chapter 26.
			-	-
			-	-
-	(2) Digital alarm communicator transmitter (DACT)	X	Annually	Except for DACTs installed prior to adoption of the 2013 edition of NFPA 72 that are connected to a telephone line (number) that is also

-	Component	Initial Acceptance	Periodic Frequency	Method
				supervised for adverse conditions by a derived local channel, ensure connection of the DACT to two separate means of transmission.
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(3) Digital alarm radio transmitter (DART)	X	Annually	Disconnect the primary telephone line. Verify transmission of a trouble signal to the supervising station by the DART occurs within 4 minutes.
-	(4) McCulloh transmitter	X	Annually	Actuate initiating device. Verify production of not less than three complete rounds of not less than three signal impulses each by the McCulloh transmitter.

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			(2) Ground	
			-	-
			-	-
			-	-
			-	-
			(2) Ground	
			-	-
-	(5) Radio alarm transmitter (RAT)	X	Annually	Cause a fault between elements of the transmitting equipment. Verify indication of the fault at the protected premises, or transmission of trouble signal to the supervising station.
-	(6) Performance-based technologies	X	Annually	Perform tests to ensure the monitoring of integrity of the transmission technology and technology path. Where shared communications equipment is used as permitted by 26.6.3.12, provided secondary (standby) power sources shall

-	Component	Initial Acceptance	Periodic Frequency	Method
				be tested in accordance with Table 14.4.3.2, item 7, 8, or 9, as applicable.
-		-	-	

-	Component	Initial Acceptance	Periodic Frequency	Method
5. Emergency communications equipment	-	-	-	
-	(1) Amplifier/tone generators	X	Annually	Verify correct switching and operation of backup equipment.
-	(2) Call-in signal silence	X	Annually	Operate/function and verify receipt of correct visual and audible signals at control unit.
-	(3) Off-hook indicator (ring down)	X	Annually	Install phone set or remove phone from hook and verify receipt of signal at control unit.
-	(4) Phone jacks	X	Annually	Visually inspect phone jack and initiate communications path through jack.
-	(5) Phone set	X	Annually	Actuate each phone set and verify correct operation.
-	(6) System performance	X	Annually	Operate the system with a minimum of any five handsets simultaneously. Verify voice quality and clarity.
6. Engine-driven generator	X	Monthly	If an engine-driven generator dedicated to the system is used as a required power source, verify operation of the generator and transfer switch in accordance with NFPA 110 by the building owner.	
7. Emergency power supply system/stored-emergency power supply system (EPSS/SEPSS)	X	Annually	If an EPSS/SEPSS dedicated to the system is used as a required power source, verify by the building owner operation of the	

-	Component	Initial Acceptance	Periodic Frequency	Method	
			EPSS/SEPSS in accordance with NFPA 111.		
8.	Secondary (standby) power supply[c]	X	Annually	Disconnect all primary (main) power supplies and verify the occurrence of required trouble indication for loss of primary power. Measure or verify the system's standby and alarm current demand using the equipment manufacturer's data and verify the battery's rated capacity exceeds the system's power demand, including the safety margin. Operate general alarm systems a minimum of 5 minutes and emergency voice communications systems for a minimum of 15 minutes. Reconnect primary (main) power supply at end of test.	
9.	VRLA battery and charger[d]	-	-		Prio conc any testi by th pers conc the t all s soft store vola men prot from

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(1) Temperature test	X	Semiannually	Upon initially opening the cabinet door, measure the internal ambient temperature of the enclosure. Measure the temperature of each battery cell/unit at the negative terminal with an infrared thermometer. Replace any battery cell/unit if its temperature is greater than 18°F (10°C) above the measured internal ambient temperature of the enclosure.
-	(2) Charger test[e]	X	Semiannually	With the battery fully charged and connected to the charger, measure the voltage across the battery with a voltmeter. Verify the voltage is within the battery/alarm equipment manufacturer's recommendations. If the voltage is outside of the specified limits, either adjust the charger to within limits or replace the charger.
-	(3) Cell/Unit voltage test	X	Semiannually	With the battery fully charged and connected to the charger, measure the voltage of each cell/unit with a voltmeter. Replace the battery when any cell/unit measures a voltage less than 13.26 volts.
-	(4) Ohmic test[f]	X	N/A	When the battery is installed, establish a baseline ohmic value for each battery cell/unit or where available use baseline ohmic values provided by the battery or test equipment

-	Component	Initial Acceptance	Periodic Frequency	Method
				manufacturer. In either case record the base line ohmic value on each battery cell/unit.
	-	-	-	Sem
(5) Replacement/Load test[g]	-		3 years	Replace the battery or conduct a load test of the battery capacity. Load test the battery based on the manufacturer's specifications for a discharge rate of

-	Component	Initial Acceptance	Periodic Frequency	Method
				3 hours or more by applying the current indicated for the selected hourly discharge rate continuously, until the terminal voltage decreases to the end voltage specified by the manufacturer. Record the test duration and calculate the battery capacity including adjustment for ambient temperature. Replace the battery if capacity is less than or equal to 80% or at the next scheduled test interval if battery capacity is less than 85%.
10.	Public emergency alarm reporting system — wired system	X	Daily	Manual tests of the power supply for public reporting circuits shall be made and recorded at least once during each 24-hour period. Such tests shall include the following:

-	Component	Initial Acceptance	Periodic Frequency	Method

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
			-	-
11.	Remote annunciators	X	Annually	Verify the correct operation and identification of annunciators. If provided, verify the correct operation of annunciator under a fault condition.
12.	Reserved	-	-	-
13.	Reserved	-	-	-
14.	Wireless communications	X	Annually	Test per the manufacturer's published

-	Component	Initial Acceptance	Periodic Frequency	Method
				instructions.
15.	Conductors — metallic	-	-	-
-	(1) Stray voltage	X	N/A	Test all installation conductors with a volt/ohmmeter to verify that there are no stray (unwanted) voltages between installation conductors or between installation conductors and ground. Verify the maximum allowable stray voltage does not exceed 1 volt ac/dc, unless a different threshold is specified in the manufacturer's published instructions for the installed equipment.
-	(2) Ground faults	X	N/A	Test all installation conductors, other than those intentionally and permanently grounded, for isolation from ground per the installed equipment manufacturer's published instructions.
-	(3) Short-circuit faults	X	N/A	Test all installation conductors, other than those intentionally connected together, for conductor-to-conductor isolation per the manufacturer's published instructions for the installed equipment. Also test these same circuits conductor-to-ground.
-	(4) Loop resistance	X	N/A	With each initiating and indicating circuit installation conductor pair short-circuited at the far end, measure and record the resistance of each circuit. Verify that the loop resistance does not exceed the limits

	-	Component	Initial Acceptance	Periodic Frequency	Method	
					specified in the manufacturer's published instructions for the installed equipment.	
	-	(5) Circuit integrity	X	N/A	For initial and reacceptance testing, confirm the introduction of a fault in any circuit monitored for integrity results in a trouble indication at the fire alarm control unit. Open one connection at not less than 10 percent of the initiating devices, notification appliances and controlled devices on every initiating device circuit, notification appliance circuit, and signaling line circuit. Confirm all circuits perform as indicated in Sections 23.5, 23.6, and 23.7.	
		-	-	N/A	Annually	For testi each initia devi circu notif appl circu sign circu corr indic the unit. all c perf indic Sect 23.5 and
16.	Nonmetallic pathways	-	-	-		
	-	(1) Optical fiber cables	X	N/A	Test the transmission characteristics of optical fibers by the use of an optical	

-	Component	Initial Acceptance	Periodic Frequency	Method	
				power meter or by an optical time domain reflectometer used to measure the relative power loss of the line. Test result data must meet or exceed ANSI/TIA 568.3, *Optical Fiber Cabling and Components Standard*, related to fiber-optic lines and connection/splice losses and the control unit manufacturer's published specifications.	
-	(2) Circuit integrity	X	N/A	For initial and reacceptance testing, confirm the introduction of a fault in any circuit monitored for integrity results in a trouble indication at the fire alarm control unit. Open one connection at not less than 10 percent of the initiating devices, notification appliances, and controlled devices on every initiating device circuit, notification appliance circuit, and signaling line circuit. Confirm all circuits perform as indicated in Sections 23.5, 23.6, and 23.7.	
	-	-	N/A	Annually	For testi each initia devi circu notif appl circu sign circu corr indic the unit. all c

-	Component	Initial Acceptance	Periodic Frequency	Method	
					perf indic Sect 23.5 and
17. Initiating devices[i]	-	-	-		
-	(1) Electromechanical releasing device	-	-	-	
-	(a) Nonrestorable-type link	X	Annually	Verify correct operation by removal of the fusible link and operation of the associated device.	
-	(b) Restorable-type link[j]	X	Annually	Verify correct operation by removal of the fusible link and operation of the associated device.	
-	(2) Fire extinguishing system(s) or suppression system(s) alarm switch	X	Annually	Operate the switch mechanically or electrically and verify receipt of signal by the fire alarm control unit.	
-	(3) Fire–gas and other detectors	X	Annually	Test fire–gas detectors and other fire detectors as prescribed by the manufacturer and as necessary for the application.	
-	(4) Heat detectors	-	-	-	
-	(a) Fixed-temperature, rate-of-rise, rate of compensation, restorable line, spot type (excluding pneumatic tube type)	X	Annually (see 14.4.4.5)	Perform heat test with a listed and labeled heat source or in accordance with the manufacturer's published instructions. Assure that the test method for the installed equipment does not damage the nonrestorable fixed-temperature element of a combination rate-of-rise/fixed-temperature element detector.	
-	(b) Fixed-temperature, nonrestorable line type	X	Annually	Do not perform heat test. Test functionality mechanically and electrically. Measure	

		Component	Initial Acceptance	Periodic Frequency	Method
					and record loop resistance. Investigate changes from acceptance test.
		(c) Fixed-temperature, nonrestorable spot type	X	See Method	After 15 years from initial installation, replace all devices or have 2 detectors per 100 laboratory tested. Replace the 2 detectors with new devices. If a failure occurs on any of the detectors removed, remove and test additional detectors to determine either a general problem involving faulty detectors or a localized problem involving 1 or 2 defective detectors.
		(d) Restorable line type, pneumatic tube only	X	Annually	Perform heat tests (where test chambers are in circuit), with a listed and labeled heat source or in accordance with the manufacturer's published instructions of the detector or conduct a test with pressure pump.
		(e) Single- and multiple-station heat alarms	X	Annually	Conduct functional tests according to manufacturer’s published instructions. Do not test nonrestorable heat detectors with heat.

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(5) Manual fire alarm boxes	X	Annually	Operate manual fire alarm boxes per the manufacturer's published instructions. Test both key-operated presignal and general alarm manual fire alarm boxes.
-	(6) Radiant energy fire detectors	X	Semiannually	Test flame detectors and spark/ember detectors in accordance with the manufacturer's published instructions to determine that each detector is operative.
			-	-
			-	-
			-	-
			-	-
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(7) Smoke detectors — functional test	-	-	-
-	(a) In other than one- and two-family dwellings, system detectors	X	Annually	[k]Test smoke detectors in place to ensure smoke entry into the sensing chamber and an alarm response. Use smoke or a listed and labeled product acceptable to the manufacturer or in accordance with their published instructions. Other methods listed in the manufacturer's published instructions that ensure smoke entry from the protected area, through the vents, into the sensing chamber can be used.
-	(b) Single- and multiple-station smoke alarms connected to protected premises systems	X	Annually	Perform a functional test on all single- and multiple-station smoke alarms connected to a protected premises fire alarm system by putting the smoke alarm into an alarm condition.

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(c) System smoke detectors used in one- and two-family dwellings	X	Annually	Conduct functional tests according to manufacturer's published instructions.
-	(d) Air sampling	X	Annually	Test with smoke or a listed and labeled product acceptable to the manufacturer or in accordance with their published instructions. In the absence of an automatic, listed airflow supervision feature, test from the end sampling port or point on each pipe run and verify airflow through all other ports or points.
-	(e) Duct type	X	Annually	In addition to the testing required in Table 14.4.3.2(17)(7)(a) and Table 14.4.3.2(17)(8), test duct smoke detectors that use sampling tubes to ensure that they will properly sample the airstream in the duct using a method acceptable to the manufacturer or in accordance with their published instructions.
-	(f) Projected beam type	X	Annually	Test the detector by introducing smoke, other aerosol, or an optical filter into the beam path.
-	(g) Smoke detector with built-in thermal element	X	Annually	Operate both portions of the detector independently as described for the respective devices.
-	(h) Smoke detectors with control output functions	X	Annually	Verify that the control capability remains operable even if all of the initiating devices connected to the same initiating device circuit or signaling line circuit are in an alarm state.

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(8) Smoke detectors — sensitivity testing	-	-	-
-	In other than one- and two-family dwellings, system detectors	N/A	See 14.4.4.3	[l]Perform any of the following tests to ensure that each smoke detector is within its listed and marked sensitivity range:
			-	-
			-	-
			-	-
			-	-
			-	-
-	(9) Carbon monoxide detectors/carbon monoxide alarms connected to protected premises systems	-	-	-
-	(a) CO entry test	X	Annually	Test the devices in place to ensure CO entry to the sensing chamber by introduction through the vents, to the sensing chamber of

-	Component	Initial Acceptance	Periodic Frequency	Method
				listed and labeled product acceptable to the manufacturer or in accordance with manufacturer's published instructions
-	(b) Air sampling	X	Annually	Per test methods documented in the manufacturer's published instructions, verify detector alarm response through the end sampling port on each pipe run; verify airflow through all other ports as well.
-	(c) Duct type	X	Annually	Test or inspect air duct detectors to ensure that the device will sample the airstream in accordance with the manufacturer's published instructions.
-	(d) CO detector with control output functions	X	Annually	Within each protected space, verify that the control capability remains operable even if all of the initiating devices connected to the same initiating device circuit or signaling line circuit are in an alarm state.
-	(10) Initiating devices, supervisory	-	-	-
-	(a) Control valve switch	X	Semiannual	Operate valve and verify signal receipt to be within the first two revolutions of the handwheel or within one-fifth of the travel distance, or per the manufacturer's published instructions. Continue to cycle outside stem and yoke valves and verify switch does not reset during full travel of the valve stem.

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(b) High- or low-air pressure switch	X	Annually	Operate switch and verify receipt of signal is obtained where the required pressure is increased or decreased a maximum 10 psi (70 kPa) from the required pressure level or in accordance with manufacturer's published instructions.
-	(c) Steam pressure	X	Annually	Operate switch and verify receipt of signal is obtained before pressure decreases to 110 percent of the minimum operating pressure of the steam-operated equipment.
-	(d) Pressure supervisory devices for other sources	X	Annually	Operate switch and verify receipt of signal is obtained where the required pressure is increased or decreased from the normal operating pressure by an amount specified in approved design documents.
-	(e) Room temperature switch	X	Annually	Operate switch and verify receipt of signal to indicate the decrease in room temperature to 40°F (4.4°C) and its restoration to above 40°F (4.4°C).
-	(f) Water level switch	X	Annually	Operate switch and verify receipt of signal indicating the water level raised or lowered a maximum 3 in. (70 mm) from the required level within a pressure tank, or a maximum 12 in. (300 mm) from the required level of a nonpressure tank. Also verify its restoral to required level.

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(g) Water temperature switch	X	Annually	Operate switch and verify receipt of signal to indicate the decrease in water temperature to 40°F (4.4°C) and its restoration to above 40°F (4.4°C).
-	(11) Mechanical, electrosonic, or pressure-type waterflow device	X	Semiannually	Water shall be flowed through an inspector's test connection indicating the flow of water equal to that from a single sprinkler of the smallest orifice size installed in the system or other listed and approved waterflow switch test methods for wet-pipe systems, or an alarm test bypass connection for dry-pipe, pre-action, or deluge systems in accordance with NFPA 25.
-	(12) Multi-sensor fire detector or multi-criteria fire detector or combination fire detector	X	Annually	1. Test each detector in accordance with the manufacturer's published instructions. Test each of the sensors present within the detector (e.g., smoke/heat/CO, etc.) independently for the specific detection principle, regardless of the configuration status at the time of testing, or individual sensors together if the technology allows individual sensor responses to be verified, or where sensors cannot be tested individually, test the primary sensor.[m]
-		-	-	-
-		-	-	

-	Component	Initial Acceptance	Periodic Frequency	Method

-		Component	Initial Acceptance	Periodic Frequency	Method
-		(3) Abort switch (special type)	X	Annually	Operate abort switch and verify correct sequence and operation in accordance with authority having jurisdiction. Observe sequencing as specified on as-built drawings or in system owner's manual.
-		(4) Cross-zone detection circuit	X	Annually	Operate one sensor or detector on each zone. Verify occurrence of correct sequence with operation of first zone and then with operation of second zone.
-		(5) Matrix-type circuit	X	Annually	Operate all sensors in system. Verify development of correct matrix with each sensor operated.
-		(6) Release solenoid circuit[n]	X	Annually	Verify operation of solenoid.
-		(7) Squibb release circuit	X	Annually	Use AGI flashbulb or other test light approved by the manufacturer. Verify operation of flashbulb or light.
-		(8) Verified, sequential, or counting zone circuit	X	Annually	Operate required sensors at a minimum of four locations in circuit. Verify correct sequence with both the first and second detector in alarm.
-		(9) All above devices or circuits or combinations thereof	X	Annually	Verify supervision of circuits by creating an open circuit.
19.	Combination systems	-	-	-	
-		(1) Fire extinguisher electronic monitoring device/system	X	Annually	Test communication between the device connecting the fire extinguisher electronic monitoring device/system and the fire alarm control unit to ensure proper

		Component	Initial Acceptance	Periodic Frequency	Method
					signals are received at the fire alarm control unit and remote annunciator(s) if applicable.
	-	(2) Carbon monoxide device/system	X	Annually	Test communication between the device connecting the carbon monoxide device/system and the fire alarm control unit to ensure proper signals are received at the fire alarm control unit and remote annunciator(s) if applicable.
20.	Interface equipment[o]	X	See 14.4.4.4	Test interface equipment connections by operating or simulating the equipment being supervised. Verify signals required to be transmitted are received at the control unit. Test frequency for interface equipment is the same as the frequency required by the applicable NFPA standard(s) for the equipment being supervised.	
21.	Guard's tour equipment	X	Annually	Test the device in accordance with the manufacturer's published instructions.	
22.	Alarm notification appliances	-	-	-	
	-	(1) Audible[p]	X	N/A	For initial and reacceptance testing, measure sound pressure levels for alert tone signals and evacuation signal

-	Component	Initial Acceptance	Periodic Frequency	Method	
				tones with a sound level meter meeting ANSI/ASAS1.4/Part 1, *Electroacoustics — Sound Level Meters — Part 1: Specifications,* Type 2 requirements. Measure sound pressure levels to determine if they are in compliance with Chapter 18 and the required performance, as documented per 7.3.4. Set the sound level meter in accordance with ANSI/ASA S3.41, *Audible Emergency Evacuation (E2) and Evacuation Signals with Relocation Instructions (ESRI),* using the time-weighted characteristic F (FAST).	
	-	-	N/A	Annually	[q]For testi the of th notif appl
-	(2) Audible textual notification appliances (loudspeakers and other appliances to convey voice messages)	X	N/A	For initial and reacceptance testing, measure sound pressure levels for signals with a sound level meter meeting ANSI/ASAS1.4/Part 1, *Electroacoustics — Sound Level Meters — Part 1: Specifications,* Type 2 requirements. Measure sound pressure levels throughout the protected area to determine if they are in compliance with Chapter 18 and the required performance, as documented per 7.3.4. Set the sound level meter in	

-	Component	Initial Acceptance	Periodic Frequency	Method	
				accordance with ANSI/ASA S3.41, *Audible Emergency Evacuation (E2) and Evacuation Signals with Relocation Instructions (ESRI),* using the time-weighted characteristic F (FAST).	
			-	-	
	-	-	N/A	Annually	[q]For testi the of th notif appl
-	(3) Visual	X	N/A	Perform initial and reacceptance testing in accordance with the manufacturer's published instructions. Verify appliance locations to be per approved layout and confirm that no floor plan changes affect the approved layout. Verify the candela rating or method of candela control marking on each visual appliance and rating when reported by the FACU agrees with the approved drawings. Confirm that each appliance flashes.	
	-	-	N/A	Annually	For testi that appl flash
23. Exit marking audible notification appliance	X	Annually	Perform tests in accordance with manufacturer's published instructions.		

-	Component	Initial Acceptance	Periodic Frequency	Method
24.	Emergency control functions[r]	X	Annually	For initial, reacceptance, and periodic testing, verify emergency control function interface device activation. Where an emergency control function interface device is disabled or disconnected during initiating device testing, verify that the disabled or disconnected emergency control function interface device has been properly restored, including electromagnetic devices used for door releasing services as part of a fire alarm system.
25.	Two-way emergency communications systems	X	Annually	Use the manufacturer's published instructions and the as-built drawings provided by the system supplier to verify correct operation after the initial testing phase has been performed by the supplier or by the supplier's designated representative.

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
			-	-
			-	-
			-	-
26.	Special procedures	-	-	-	
-		(1) Alarm verification	X	Annually	Verify time delay and alarm response for smoke detector circuits identified as

-	Component	Initial Acceptance	Periodic Frequency	Method
				having alarm verification.
-	(2) Multiplex systems	X	Annually	Verify communications between sending and receiving units under both primary and secondary power.
			-	-
			-	-
			-	-
			-	-
27.	Supervising station alarm systems — receiving equipment	-	-	-	
-	(1) All equipment	X	Monthly	Perform tests on all system functions and features in accordance with the equipment

-	Component	Initial Acceptance	Periodic Frequency	Method
				manufacturer's published instructions for correct operation in conformance with the applicable sections of Chapter 26.
			-	-
			-	-
-	(2) Digital alarm communicator receiver (DACR)	X	Monthly	Disconnect each transmission means in turn from the DACR, and verify audible and visual annunciation of a trouble signal in the supervising station.
			-	-
-	(3) Digital alarm radio receiver (DARR)	X	Monthly	Cause the following conditions of all DARRs on all

-	Component	Initial Acceptance	Periodic Frequency	Method
				subsidiary and repeater station receiving equipment. Verify receipt at the supervising station of correct signals for each of the following conditions:
			-	-
			-	-
			-	-
			-	-
			-	-
-	(4) McCulloh systems	X	Monthly	Test and record the current on each circuit at each supervising and subsidiary station under the following conditions:
			-	-
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
			-	-
			-	-
			-	-
-	(5) Radio alarm supervising station receiver (RASSR) and radio alarm repeater station receiver (RARSR)	X	Monthly	Cause each of the following conditions at each of the supervising or subsidiary stations and all repeater station radio transmitting and receiving equipment; verify receipt of correct signals at the supervising station:
			-	-
			-	-
			-	-
-	(6) Private microwave radio systems	X	Monthly	Cause each of the following conditions at each of the supervising or

-	Component	Initial Acceptance	Periodic Frequency	Method
				subsidiary stations and all repeater station radio transmitting and receiving equipment; verify receipt of correct signals at the supervising station:
			-	-
			-	-
			-	-
			-	-
-	(7) Performance-based technologies	X	Monthly	Perform tests to ensure the monitoring of integrity of the transmission technology and technology path. Where a single communications path is used, disconnect the communication path. Verify that failure of the path is annunciated at the supervising station within 60 minutes of the failure (within 5 minutes for communication equipment installed prior to adoption of the 2013 edition of *NFPA 72*). Restore the communication path. Where multiple communication paths are used, disconnect both communication paths and confirm that failure of the path is annunciated at the supervising station within not more than 6 hours of the failure (within 24 hours for communication equipment installed

-	Component	Initial Acceptance	Periodic Frequency	Method
				prior to adoption of the 2013 edition of *NFPA 72*). Restore both communication paths.
28.	Public emergency alarm reporting system transmission equipment	-	-	-	
-	(1) Publicly accessible alarm box	X	Semiannually	Actuate publicly accessible initiating device(s) and verify receipt of not less than three complete rounds of signal impulses. Perform this test under normal circuit conditions. If the device is equipped for open circuit operation (ground return), test it in this condition as one of the semiannual tests.
-	(2) Auxiliary box	X	Annually	Test each initiating circuit of the auxiliary box by actuation of a protected premises initiating device connected to that circuit. Verify receipt of not less than three complete rounds of signal impulses.
-	(3) Master box	-	-	-
-	(a) Manual operation	X	Semiannually	Perform the tests prescribed for 28(1).
-	(b) Auxiliary operation	X	Annually	Perform the tests prescribed for 28(2).
29.	Low-power radio (wireless systems)	X	N/A	The following procedures describe additional acceptance and reacceptance test methods to verify wireless protection system operation:
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method

-	Component	Initial Acceptance	Periodic Frequency	Method

		Component	Initial Acceptance	Periodic Frequency	Method
30.	Mass notification systems				
		(1) Functions	X	Annually	At a minimum, test control unit to verify correct receipt of alarm, supervisory, and trouble signals (inputs); operation of evacuation signals and auxiliary functions (outputs); circuit supervision, including detection of open circuits and ground faults; and power supply supervision for detection of loss of ac power and disconnection of secondary batteries.
		(2) Fuses	X	Annually	Verify the rating and supervision.
		(3) Interfaced equipment	X	Annually	Verify integrity of single or multiple circuits providing interface between two or more control units. Test interfaced equipment connections by operating or

-	Component	Initial Acceptance	Periodic Frequency	Method
				simulating operation of the equipment being supervised. Verify signals required to be transmitted at the control unit.
-	(4) Lamps and LEDs	X	Annually	Illuminate lamps and LEDs.
-	(5) Primary (main) power supply	X	Annually	Disconnect all secondary (standby) power and test under maximum load, including all alarm appliances requiring simultaneous operation. Reconnect all secondary (standby) power at end of test. For redundant power supplies, test each separately.
-	(6) Audible textual notification appliances (loudspeakers and other appliances to convey voice messages)	X	Annually	Measure sound pressure level with a sound level meter meeting ANSI/ASAS1.4/Part 1, *Electroacoustics — Sound Level Meters — Part 1: Specifications,* Type 2 requirements. Measure and record levels throughout protected area. Set the sound level meter in accordance with ANSI/ASA S3.41, *Audible Emergency Evacuation (E2) and Evacuation Signals with Relocation Instructions (ESRI),* using the time-weighted characteristic F (FAST). Record the maximum output when the audible emergency evacuation signal is on.
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(7) Visual	X	Annually	Perform test in accordance with manufacturer's published instructions. Verify appliance locations to be per approved layout and confirm that no floor plan changes affect the approved layout. Verify the candela rating or method of candela control marking on each visual appliance and rating when reported by the FACU agrees with the approved drawings. Confirm that each appliance flashes.
-	(8) Control unit functions and no diagnostic failures are indicated	X	Annually	Review event log file and verify that the correct events were logged. Review system diagnostic log file; correct deficiencies noted in file. Delete unneeded log files. Delete unneeded error files. Verify that sufficient free disk space is available. Verify unobstructed flow of cooling air is available. Change/clean filters, cooling fans, and intake vents.
-	(9) Control unit reset	X	Annually	Power down the central control unit computer and restart it.
-	(10) Control unit security	X	Annually	If remote control software is loaded onto the system, verify that it is disabled to prevent unauthorized system access.
-	(11) Audible/visual functional test	X	Annually	Send out an alert to a diverse set of predesignated

-	Component	Initial Acceptance	Periodic Frequency	Method
				receiving devices and confirm receipt. Include at least one of each type of receiving device.
-	(12) Software backup	X	Annually	Make full system software backup. Rotate backups based on accepted practice at site.
-	(13) Secondary power test	X	Annually	Disconnect ac power. Verify the ac power failure alarm status on central control unit. With ac power disconnected, verify battery voltage under load.
-	(14) Wireless signals	X	Annually	Check forward/reflected radio power is within specifications.
-	(15) Antenna	X	Annually	Check forward/reflected radio power is within specifications. Verify solid electrical connections with no observable corrosion.
-	(16) Transceivers	X	Annually	Verify proper operation and mounting is not compromised.

[a]Some transmission equipment (such as, but not limited to, cable modems, fiber-optic interface nodes, and VoIP interfaces) are typically powered by the building's electrical system using a secondary (standby) power supply that does not meet the requirements of this Code. This is intended to ensure that the testing authority verifies full secondary (standby) power as required by Chapter 10. Additionally, refer to Table 14.4.3.2, items 7 through 9, for secondary (standby) power supply testing.

[b]The automatic transmission of the check-in (handshake) signal can take up to 60 minutes to occur.

[c]See Table 14.4.3.2, Item 4(1) for the testing of transmission equipment.

[d]The battery tests in Table 14.4.3.2, Item 9, are based on VRLA batteries and it is the intent that the tests specified in (1) through (4) be performed in order. FACU automated load testing of VRLA batteries in accordance with Table 14.4.3.2, Item 9(5), with record of ambient temperature is an acceptable alternative to prescriptive manual methods using test equipment. For other secondary battery types, refer to the battery manufacturer's published instructions or IEEE 450, *Recommended Practice for Maintenance, Testing, and Replacement of Vented Lead-Acid Batteries for Stationary Applications*, for vented lead-acid batteries, and IEEE 1106, *Recommended Practice for Installation, Maintenance, Testing, and Replacement of Vented Nickel-Cadmium Batteries for Stationary Applications*, for nickel-cadmium batteries.

[e]If the charger is adjustable, adjust the output voltage to 2.265 volts per cell ±0.015 volts at

77°F (25°C) or as specified by the alarm equipment manufacturer.

[f]See A.14.4.3.2 Item 9(4). A load test per Item 9(5) is permitted in lieu of an ohmic test.

[g]See A.14.4.3.2 Item 9(5).

[h]The voltmeter sensitivity has been changed from 1000 ohms per volt to 100 ohms per volt so that the false ground readings (caused by induced voltages) are minimized.

[i]Initiating devices such as smoke detectors used for elevator recall, closing dampers, or releasing doors held in the open position that are permitted by the Code *(see9.6.3 of NFPA 101)* to initiate supervisory signals at the fire alarm control unit (FACU) should be tested at the same frequency (annual) as those devices when they are generating an alarm signal. They are not supervisory devices, but they initiate a supervisory signal at the FACU.

[j]Fusible thermal link detectors are commonly used to close fire doors and fire dampers electrically connected to the fire alarm control unit. They are actuated by the presence of external heat, which causes a solder element in the link to fuse, or by an electric thermal device, which, when energized, generates heat within the body of the link, causing the link to fuse and separate.

[k]Note, it is customary for the manufacturer of the smoke detector to test a particular product from an aerosol provider to determine acceptability for use in smoke entry testing of their smoke detector/smoke alarm. Magnets are not acceptable for smoke entry tests.

[l] There are some detectors that use magnets as a manufacturer's calibrated sensitivity test instrument.

[m]For example, it might not be possible to individually test the heat sensor in a thermally enhanced smoke detector.

[n]Manufacturer's published instructions should be consulted to ensure a proper operational test. No suppression gas or agent is expected to be discharged during the test of the solenoid. *See Test Plan of 14.2.10*.

[o]A monitor module installed on an interface device is not considered a supervisory device and therefore not subject to the quarterly testing frequency requirement. Test frequencies for interface devices should be in accordance with the applicable standard. For example, fire pump controller alarms such as phase reversal are required to be tested annually. If a monitor module is installed to identify phase reversal on the fire alarm control unit, it is not necessary to test for phase reversal four times a year.

[p]Chapter 18 would require 15 dB over average ambient sound for public mode spaces. Sometimes the ambient sound levels are different from what the design was based upon. Private operating mode would require 10 dB over average ambient at the location of the device.

[q]Where building, system, or occupancy changes have been observed, the owner should be notified of the changes. New devices might need to be installed and tested per the initial acceptance testing criteria.

[r]See A.14.4.3.2 and Table 14.4.3.2, Item 24.

Statement of Problem and Substantiation for Public Input

Footnote "f" of Table 14.4.3.2 states that "a load test as per item 9 (5) is permitted in lieu of an ohmic test". This language should be moved into section 9 (4) to clarify that the load test is allowed as the footnotes are often overlooked.

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Committee Statement

Resolution: FR-5349-NFPA 72-2022

Statement: Item 17(7)(A) - The new sentence is moved from footnote K to the table to make it more visible to the user.

Items 8 and 9, note c - Secondary batteries have become more of an issue for fire alarm systems. NFPA 72, during the last cycle, added requirements for batteries to be listed or component recognized. Chargers used today can offer so much more information, verification, testing data, etc. for the batteries connected to the system. This option allows manufacturers to have their FACUs listed to offer these functions and if a listing should be deemed equivalent to the use of battery testers. This is similar to smoke detector sensitivity testing where a FACU can provide that testing is listed for the purpose.

Items 9 (2) and 9(4), note e and note f - A task group was set up to conduct an extensive, detailed review of each table footnote and determined what could be moved into the testing table itself and what should remain as a table footnote. In accordance with the Manual of Style, mandatory language should reside in the table and not in the footnote.

Item 17(4)(c) - The sentence was revised to clarify the functional testing methods.

Item 18 - The testing of abort switches currently refers to the sequence of operation for development of and/or verification of the system sequence of operation for simple abort function. The test requirement is vague and the sequence of operation should have already been determined prior to acceptance testing. This revision clarifies the testing of an abort switch.

Items 4(6), 10, 17(11) - Manual of style does not permit requirements in tables.

Public Input No. 31-NFPA 72-2021 [Section No. 14.4.3.2]

14.4.3.2*

Systems and associated equipment shall be tested according to Table 14.4.3.2.

Table 14.4.3.2 Testing

-	Component	Initial Acceptance	Periodic Frequency	Method
1. All equipment	X	-		See Table 14.3.1.
2. Control unit	-	-	-	
-	(1) Functions	X	Annually	Verify correct receipt of alarm, supervisory, and trouble signals (inputs); operation of evacuation signals and auxiliary functions (outputs); circuit supervision, including detection of open circuits and ground faults; and power supply supervision for detection of loss of ac power and disconnection of secondary batteries.
-	(2) Fuses	X	Annually	Verify rating and supervision.
-	(3) Interfaced equipment	X	Annually	Verify integrity of single or multiple circuits providing interface between two or more control units. Test interfaced equipment connections by operating or simulating operation of the equipment being supervised. Verify signals required to be transmitted at the control unit.
-	(4) Lamps and LEDs	X	Annually	Illuminate lamps and LEDs.
-	(5) Primary (main) power supply	X	Annually	Disconnect all secondary (standby) power and test under maximum load, including all alarm appliances requiring simultaneous operation. Reconnect all secondary (standby) power at end of test. Test redundant power supplies separately.

-	Component	Initial Acceptance	Periodic Frequency	Method
3.	Alarm control unit trouble signals	-	-	-
-	(1) Audible and visual	X	Annually	Verify operation of control unit trouble signals. Verify ring-back feature for systems using a trouble-silencing switch that requires resetting.
-	(2) Disconnect switches	X	Annually	If control unit has disconnect or isolating switches, verify performance of intended function of each switch. Verify receipt of trouble signal when a supervised function is disconnected.
-	(3) Ground-fault monitoring circuit	X	Annually	If the system has a ground detection feature, verify the occurrence of ground-fault indication whenever any installation conductor is grounded.
-	(4) Transmission of signals to off-premises location	X	Annually	Actuate an initiating device and verify receipt of alarm signal at the off-premises location.
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
4. Supervising station alarm systems — transmission equipment	-	-	-	
-	(1) All equipment	X	Annually	[a]Test all system functions and features in accordance with the equipment manufacturer's published instructions for correct operation in conformance with the applicable sections of Chapter 26.
			-	-
			-	-
-	(2) Digital alarm communicator transmitter (DACT)	X	Annually	Except for DACTs installed prior to adoption of the 2013 edition of NFPA 72 that are connected to a telephone line

-	Component	Initial Acceptance	Periodic Frequency	Method
				(number) that is also supervised for adverse conditions by a derived local channel, ensure connection of the DACT to two separate means of transmission.
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(3) Digital alarm radio transmitter (DART)	X	Annually	Disconnect the primary telephone line. Verify transmission of a trouble signal to the supervising station by the DART occurs within 4 minutes.
-	(4) McCulloh transmitter	X	Annually	Actuate initiating device. Verify production of not less than three complete rounds of not less than three signal impulses each by the McCulloh transmitter.

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			(2) Ground	
			-	-
			-	-
			-	-
			-	-
			(2) Ground	
			-	-
-	(5) Radio alarm transmitter (RAT)	X	Annually	Cause a fault between elements of the transmitting equipment. Verify indication of the fault at the protected premises, or transmission of trouble signal to the supervising station.
-	(6) Performance-based technologies	X	Annually	Perform tests to ensure the monitoring of integrity of the transmission technology and technology path. Where shared communications equipment is used as permitted by 26.6.3.12, provided secondary (standby)

-	Component	Initial Acceptance	Periodic Frequency	Method
				power sources shall be tested in accordance with Table 14.4.3.2, item 7, 8, or 9, as applicable.

-	Component	Initial Acceptance	Periodic Frequency	Method
5.	Emergency communications equipment	-	-	-
-	(1) Amplifier/tone generators	X	Annually	Verify correct switching and operation of backup equipment.
-	(2) Call-in signal silence	X	Annually	Operate/function and verify receipt of correct visual and audible signals at control unit.
-	(3) Off-hook indicator (ring down)	X	Annually	Install phone set or remove phone from hook and verify receipt of signal at control unit.
-	(4) Phone jacks	X	Annually	Visually inspect phone jack and initiate communications path through jack.
-	(5) Phone set	X	Annually	Actuate each phone set and verify correct operation.
-	(6) System performance	X	Annually	Operate the system with a minimum of any five handsets simultaneously. Verify voice quality and clarity.
6.	Engine-driven generator	X	Monthly	If an engine-driven generator dedicated to the system is used as a required power source, verify operation of the generator and transfer switch in accordance with NFPA 110 by the building owner.
7.	Emergency power supply system/stored-emergency power supply system (EPSS/SEPSS)	X	Annually	If an EPSS/SEPSS dedicated to the system is used as a required power source, verify by the building owner operation of the

-	Component	Initial Acceptance	Periodic Frequency	Method	
			EPSS/SEPSS in accordance with NFPA 111.		
8.	Secondary (standby) power supply[c]	X	Annually	Disconnect all primary (main) power supplies and verify the occurrence of required trouble indication for loss of primary power. Measure or verify the system's standby and alarm current demand using the equipment manufacturer's data and verify the battery's rated capacity exceeds the system's power demand, including the safety margin. Operate general alarm systems a minimum of 5 minutes and emergency voice communications systems for a minimum of 15 minutes. Reconnect primary (main) power supply at end of test.	
9.	VRLA battery and charger[d]	-	-		Prior t conduc any ba testing by the conduc test, th system softwa stored volatile memo protec loss.

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(1) Temperature test	X	Semiannually	Upon initially opening the cabinet door, measure the internal ambient temperature of the enclosure. Measure the temperature of each battery cell/unit at the negative terminal with an infrared thermometer. Replace any battery cell/unit if its temperature is greater than 18°F (10°C) above the measured internal ambient temperature of the enclosure.
-	(2) Charger test[e]	X	Semiannually	With the battery fully charged and connected to the charger, measure the voltage across the battery with a voltmeter. Verify the voltage is within the battery/alarm equipment manufacturer's recommendations. If the voltage is outside of the specified limits, either adjust the charger to within limits or replace the charger.
-	(3) Cell/Unit voltage test	X	Semiannually	With the battery fully charged and connected to the charger, measure the voltage of each cell/unit with a voltmeter. Replace the battery when any cell/unit measures a voltage less than 13.26 volts.
-	(4) Ohmic test[f]	X	N/A	When the battery is installed, establish a baseline ohmic value for each battery cell/unit or where available use baseline ohmic values provided by the battery or test equipment

-	Component	Initial Acceptance	Periodic Frequency	Method	
				manufacturer. In either case record the base line ohmic value on each battery cell/unit.	
		-	-	-	Semia
-	(5) Replacement/Load test[g]	-		3 years	Replac battery condu test of battery capaci test th based

-	Component	Initial Acceptance	Periodic Frequency	Method	
					manuf specifi for a d rate of or mor applyi curren indicat the se hourly discha contin until th termin voltag decrea the en voltag specifi the manuf Recor test du and ca the ba capaci includi adjust ambie tempe Repla battery capaci less th equal or at th sched interva battery capaci less th
10.	Public emergency alarm reporting system — wired system	X	Daily	Manual tests of the power supply for public reporting circuits shall be made and recorded at least once during each 24-hour period. Such tests shall include the following:	

-	Component	Initial Acceptance	Periodic Frequency	Method

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
11.	Remote annunciators	X	Annually	Verify the correct operation and identification of annunciators. If provided, verify the correct operation of annunciator under a fault condition.
12.	Reserved	-	-	-
13.	Reserved	-	-	-
14.	Wireless communications	X	Annually	Test per the manufacturer's published instructions.
15.	Conductors — metallic	-	-	-
-	(1) Stray voltage	X	N/A	Test all installation conductors with a volt/ohmmeter to verify that there are no stray (unwanted) voltages between installation conductors or between installation conductors and ground. Verify the maximum allowable stray voltage does not exceed 1 volt ac/dc, unless a different threshold is specified in the manufacturer's published instructions for the installed equipment.
-	(2) Ground faults	X	N/A	Test all installation conductors, other than those intentionally and permanently grounded, for isolation from ground per the installed equipment manufacturer's published instructions.
-	(3) Short-circuit faults	X	N/A	Test all installation conductors, other than those intentionally connected together, for conductor-to-

-	Component	Initial Acceptance	Periodic Frequency	Method	
				conductor isolation per the manufacturer's published instructions for the installed equipment. Also test these same circuits conductor-to-ground.	
-	(4) Loop resistance	X	N/A	With each initiating and indicating circuit installation conductor pair short-circuited at the far end, measure and record the resistance of each circuit. Verify that the loop resistance does not exceed the limits specified in the manufacturer's published instructions for the installed equipment.	
-	(5) Circuit integrity	X	N/A	For initial and reacceptance testing, confirm the introduction of a fault in any circuit monitored for integrity results in a trouble indication at the fire alarm control unit. Open one connection at not less than 10 percent of the initiating devices, notification appliances and controlled devices on every initiating device circuit, notification appliance circuit, and signaling line circuit. Confirm all circuits perform as indicated in Sections 23.5, 23.6, and 23.7.	
	-	-	N/A	Annually	For pe testing each i device notifica applia circuit, signali circuit correc

-	Component	Initial Acceptance	Periodic Frequency	Method	
					indicat the co unit. C all circ perfor indicat Sectio 23.6, a 23.7.
16. Nonmetallic pathways	-	-	-		
-	(1) Optical fiber cables	X	N/A	Test the transmission characteristics of optical fibers by the use of an optical power meter or by an optical time domain reflectometer used to measure the relative power loss of the line. Test result data must meet or exceed ANSI/TIA 568.3, *Optical Fiber Cabling and Components Standard*, related to fiber-optic lines and connection/splice losses and the control unit manufacturer's published specifications.	
-	(2) Circuit integrity	X	N/A	For initial and reacceptance testing, confirm the introduction of a fault in any circuit monitored for integrity results in a trouble indication at the fire alarm control unit. Open one connection at not less than 10 percent of the initiating devices, notification appliances, and controlled devices on every initiating device circuit, notification appliance circuit, and signaling line circuit. Confirm all circuits perform as indicated in Sections 23.5, 23.6, and 23.7.	

		Component	Initial Acceptance	Periodic Frequency	Method	
				N/A	Annually	For pe testing each i device notifica applia circuit, signali circuit correc indicat the co unit. C all circ perfor indicat Sectio 23.6, a 23.7.
17.	Initiating devices[i]					
		(1) Electromechanical releasing device				
		(a) Nonrestorable-type link	X	Annually	Verify correct operation by removal of the fusible link and operation of the associated device.	
		(b) Restorable-type link[j]	X	Annually	Verify correct operation by removal of the fusible link and operation of the associated device.	
		(2) Fire extinguishing system(s) or suppression system(s) alarm switch	X	Annually	Operate the switch mechanically or electrically and verify receipt of signal by the fire alarm control unit.	
		(3) Fire–gas and other detectors	X	Annually	Test fire–gas detectors and other fire detectors as prescribed by the manufacturer and as necessary for the application.	
		(4) Heat detectors				
		(a) Fixed-temperature, rate-of-rise, rate of compensation, restorable line, spot type	X	Annually (see 14.4.4.5)	Perform heat test with a listed and labeled heat source or in accordance with the manufacturer's published instructions.	

		Component	Initial Acceptance	Periodic Frequency	Method
		(excluding pneumatic tube type)			Assure that the test method for the installed equipment does not damage the nonrestorable fixed-temperature element of a combination rate-of-rise/fixed-temperature element detector.
		(b) Fixed-temperature, nonrestorable line type	X	Annually	Do not perform heat test. Test functionality mechanically and electrically. Measure and record loop resistance. Investigate changes from acceptance test.
		(c) Fixed-temperature, nonrestorable spot type	X	See Method	After 15 years from initial installation, replace all devices or have 2 detectors per 100 laboratory tested. Replace the 2 detectors with new devices. If a failure occurs on any of the detectors removed, remove and test additional detectors to determine either a general problem involving faulty detectors or a localized problem involving 1 or 2 defective detectors.
		(d) Restorable line type, pneumatic tube only	X	Annually	Perform heat tests (where test chambers are in circuit), with a listed and labeled heat source or in accordance with the

-	Component	Initial Acceptance	Periodic Frequency	Method
				manufacturer's published instructions of the detector or conduct a test with pressure pump.
-	(e) Single- and multiple-station heat alarms	X	Annually	Conduct functional tests according to manufacturer's published instructions. Do not test nonrestorable heat detectors with heat.
-	(5) Manual fire alarm boxes	X	Annually	Operate manual fire alarm boxes per the manufacturer's published instructions. Test both key-operated presignal and general alarm manual fire alarm boxes.
-	(6) Radiant energy fire detectors	X	Semiannually	Test flame detectors and spark/ember detectors in accordance with the manufacturer's published instructions to determine that each detector is operative.
			-	-
			-	-
			-	-
			-	-
			-	-

	Component	Initial Acceptance	Periodic Frequency	Method	
	(7) Smoke detectors — functional test				
	(a) In other than one- and two-family dwellings, system detectors	X	Annually	[k]Test smoke detectors in place to ensure smoke entry into the sensing chamber and an alarm response. Use smoke or a listed and labeled product acceptable to the manufacturer or in accordance with their published instructions. Other methods listed in the manufacturer's published instructions that ensure smoke entry from the protected area, through the vents, into	

-	Component	Initial Acceptance	Periodic Frequency	Method
				the sensing chamber can be used.
	(b) Single- and multiple-station smoke alarms connected to protected premises systems	X	Annually	Perform a functional test on all single- and multiple-station smoke alarms connected to a protected premises fire alarm system by putting the smoke alarm into an alarm condition.
-	(c) System smoke detectors used in one- and two-family dwellings	X	Annually	Conduct functional tests according to manufacturer's published instructions.
-	(d) Air sampling	X	Annually	Test with smoke or a listed and labeled product acceptable to the manufacturer or in accordance with their published instructions. In the absence of an automatic, listed airflow supervision feature, test from the end sampling port or point on each pipe run and verify airflow through all other ports or points.
-	(e) Duct type	X	Annually	In addition to the testing required in Table 14.4.3.2(17)(7)(a) and Table 14.4.3.2(17)(8), test duct smoke detectors that use sampling tubes to ensure that they will properly sample the airstream in the duct using a method acceptable to the manufacturer or in accordance with their published instructions.
-	(f) Projected beam type	X	Annually	Test the detector by introducing smoke, other aerosol, or an optical filter into the beam path.

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(g) Smoke detector with built-in thermal element	X	Annually	Operate both portions of the detector independently as described for the respective devices.
-	(h) Smoke detectors with control output functions	X	Annually	Verify that the control capability remains operable even if all of the initiating devices connected to the same initiating device circuit or signaling line circuit are in an alarm state.
-	(8) Smoke detectors — sensitivity testing	-	-	-
-	In other than one- and two-family dwellings, system detectors	N/A	See 14.4.4.3	lPerform any of the following tests to ensure that each smoke detector is within its listed and marked sensitivity range:
			-	-
			-	-
			-	-
			-	-

	Component	Initial Acceptance	Periodic Frequency	Method
	(9) Carbon monoxide detectors/carbon monoxide alarms connected to protected premises systems			
	(a) CO entry test	X	Annually	Test the devices in place to ensure CO entry to the sensing chamber by introduction through the vents, to the sensing chamber of listed and labeled product acceptable to the manufacturer or in accordance with manufacturer's published instructions
	(b) Air sampling	X	Annually	Per test methods documented in the manufacturer's published instructions, verify detector alarm response through the end sampling port on each pipe run; verify airflow through all other ports as well.
	(c) Duct type	X	Annually	Test or inspect air duct detectors to ensure that the device will sample the airstream in accordance with the manufacturer's published instructions.
	(d) CO detector with control output functions	X	Annually	Within each protected space, verify that the control capability remains operable even if all of the initiating devices connected to the same initiating device circuit or signaling line circuit are in an alarm state.

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(10) Initiating devices, supervisory	-	-	-
-	(a) Control valve switch	X	Semiannual	Operate valve and verify signal receipt to be within the first two revolutions of the handwheel or within one-fifth of the travel distance, or per the manufacturer's published instructions. Continue to cycle outside stem and yoke valves and verify switch does not reset during full travel of the valve stem.
-	(b) High- or low-air pressure switch	X	Annually	Operate switch and verify receipt of signal is obtained where the required pressure is increased or decreased a maximum 10 psi (70 kPa) from the required pressure level or in accordance with manufacturer's published instructions.
-	(c) Steam pressure	X	Annually	Operate switch and verify receipt of signal is obtained before pressure decreases to 110 percent of the minimum operating pressure of the steam-operated equipment.
-	(d) Pressure supervisory devices for other sources	X	Annually	Operate switch and verify receipt of signal is obtained where the required pressure is increased or decreased from the normal operating pressure by an amount specified in approved design documents.
-	(e) Room temperature switch	X	Annually	Operate switch and verify receipt of signal to indicate the decrease in room temperature to 40°F (4.4°C) and its

-	Component	Initial Acceptance	Periodic Frequency	Method
				restoration to above 40°F (4.4°C).
-	(f) Water level switch	X	Annually	Operate switch and verify receipt of signal indicating the water level raised or lowered a maximum 3 in. (70 mm) from the required level within a pressure tank, or a maximum 12 in. (300 mm) from the required level of a nonpressure tank. Also verify its restoral to required level.
-	(g) Water temperature switch	X	Annually	Operate switch and verify receipt of signal to indicate the decrease in water temperature to 40°F (4.4°C) and its restoration to above 40°F (4.4°C).
-	(11) Mechanical, electrosonic, or pressure-type waterflow device	X	Semiannually	Water shall be flowed through an inspector's test connection indicating the flow of water equal to that from a single sprinkler of the smallest orifice size installed in the system or other listed and approved waterflow switch test methods for wet-pipe systems, or an alarm test bypass connection for dry-pipe, pre-action, or deluge systems in accordance with NFPA 25.
-	(12) Multi-sensor fire detector or multi-criteria fire detector or combination fire detector	X	Annually	1. Test each detector in accordance with the manufacturer’s published instructions. Test each of the sensors present within the detector (e.g., smoke/heat/CO, etc.) independently for the specific detection principle, regardless of the configuration status at the time of

-	Component	Initial Acceptance	Periodic Frequency	Method
				testing, or individual sensors together if the technology allows individual sensor responses to be verified, or where sensors cannot be tested individually, test the primary sensor.[m]
-		-	-	-
-		-	-	
			-	-
-		-	-	
-		-	-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
-		-	-	
18.	Special hazard equipment	-	- -	
-	(1) Abort switch (dead-man type)	X	Annually	Operate abort switch and verify correct sequence and operation.
-	(2) Abort switch (recycle type)	X	Annually	Operate abort switch and verify development of correct matrix with each sensor operated.
-	(3) Abort switch (special type)	X	Annually	Operate abort switch and verify correct sequence and operation in accordance with authority having jurisdiction. Observe sequencing as specified on as-built drawings or in system owner's manual.
-	(4) Cross-zone detection circuit	X	Annually	Operate one sensor or detector on each zone. Verify occurrence of correct sequence with operation of first zone and then with operation of second zone.
-	(5) Matrix-type circuit	X	Annually	Operate all sensors in system. Verify development of correct matrix with each sensor operated.
-	(6) Release solenoid circuit[n]	X	Annually	Verify operation of solenoid.
-	(7) Squibb release circuit	X	Annually	Use AGI flashbulb or other test light approved by the manufacturer. Verify operation of flashbulb or light.
-	(8) Verified, sequential, or counting zone circuit	X	Annually	Operate required sensors at a minimum of four locations in circuit. Verify correct sequence with both

		Component	Initial Acceptance	Periodic Frequency	Method
					the first and second detector in alarm.
	-	(9) All above devices or circuits or combinations thereof	X	Annually	Verify supervision of circuits by creating an open circuit.
19.	Combination systems	-	-	-	
	-	(1) Fire extinguisher electronic monitoring device/system	X	Annually	Test communication between the device connecting the fire extinguisher electronic monitoring device/system and the fire alarm control unit to ensure proper signals are received at the fire alarm control unit and remote annunciator(s) if applicable.
	-	(2) Carbon monoxide device/system	X	Annually	Test communication between the device connecting the carbon monoxide device/system and the fire alarm control unit to ensure proper signals are received at the fire alarm control unit and remote annunciator(s) if applicable.
20.	Interface equipment[o]	X	See 14.4.4.4		Test interface equipment connections by operating or simulating the equipment being supervised. Verify signals required to be transmitted are received at the control unit. Test frequency for interface equipment is the same as the frequency required by the applicable NFPA standard(s) for the equipment

-	Component	Initial Acceptance	Periodic Frequency	Method	
			being supervised.		
21.	Guard’s tour equipment	X	Annually	Test the device in accordance with the manufacturer’s published instructions.	
22.	Alarm notification appliances	-	-	-	
-	(1) Audible[p]	X	N/A	For initial and reacceptance testing, measure sound pressure levels for alert tone signals and evacuation signal tones with a sound level meter meeting ANSI/ASAS1.4/Part 1, *Electroacoustics — Sound Level Meters — Part 1: Specifications,* Type 2 requirements. Measure sound pressure levels to determine if they are in compliance with Chapter 18 and the required performance, as documented per 7.3.4. Set the sound level meter in accordance with ANSI/ASA S3.41, *Audible Emergency Evacuation (E2) and Evacuation Signals with Relocation Instructions (ESRI),* using the time-weighted characteristic F (FAST).	
	-	-	N/A	Annually	[q]For p testing the op of the notifica applia
-	(2) Audible textual notification appliances (loudspeakers and other appliances	X	N/A	For initial and reacceptance testing, measure sound pressure levels for signals with a sound	

-	Component	Initial Acceptance	Periodic Frequency	Method	
				level meter meeting ANSI/ASAS1.4/Part 1, *Electroacoustics — Sound Level Meters — Part 1: Specifications,* Type 2 requirements. Measure sound pressure levels throughout the protected area to determine if they are in compliance with Chapter 18 and the required performance, as documented per 7.3.4. Set the sound level meter in accordance with ANSI/ASA S3.41, *Audible Emergency Evacuation (E2) and Evacuation Signals with Relocation Instructions (ESRI),* using the time-weighted characteristic F (FAST).	
	to convey voice messages)				
	-	-	N/A	Annually	[q]For p testing the op of the notifica applia
-	(3) Visual	X	N/A	Perform initial and reacceptance testing in accordance with the manufacturer's published instructions. Verify appliance locations to be per approved layout and confirm that no floor plan changes affect the approved layout. Verify the candela rating or method of candela control marking on each	

		Component	Initial Acceptance	Periodic Frequency	Method	
					visual appliance and rating when reported by the FACU agrees with the approved drawings. Confirm that each appliance flashes.	
	-	-	-	N/A	Annually	For pe testing that ea applia flashes
23.	Exit marking audible notification appliance	X	Annually	Perform tests in accordance with manufacturer's published instructions.		
24.	Emergency control functions[r]	X	Annually	For initial, reacceptance, and periodic testing, verify emergency control function interface device activation. Where an emergency control function interface device is disabled or disconnected during initiating device testing, verify that the disabled or disconnected emergency control function interface device has been properly restored, including electromagnetic devices used for door releasing services as part of a fire alarm system.		
25.	Two-way emergency communications systems	X	Annually	Use the manufacturer's published instructions and the as-built		

-	Component	Initial Acceptance	Periodic Frequency	Method
			drawings provided by the system supplier to verify correct operation after the initial testing phase has been performed by the supplier or by the supplier's designated representative.	
			-	-
			-	-
			-	-
			-	-

		Component	Initial Acceptance	Periodic Frequency	Method
26.	Special procedures				
		(1) Alarm verification	X	Annually	Verify time delay and alarm response for smoke detector circuits identified as having alarm verification.
		(2) Multiplex systems	X	Annually	Verify communications between sending and receiving units under both primary and secondary power.

	Component	Initial Acceptance	Periodic Frequency	Method
27.	Supervising station alarm systems — receiving equipment			
	(1) All equipment	X	Monthly	Perform tests on all system functions and features in accordance with the equipment manufacturer's published instructions for correct operation in conformance with the applicable sections of Chapter 26.
	(2) Digital alarm communicator receiver (DACR)	X	Monthly	Disconnect each transmission means in turn from the DACR, and verify audible and visual annunciation of a trouble signal in the

-	Component	Initial Acceptance	Periodic Frequency	Method
				supervising station.
			-	-
-	(3) Digital alarm radio receiver (DARR)	X	Monthly	Cause the following conditions of all DARRs on all subsidiary and repeater station receiving equipment. Verify receipt at the supervising station of correct signals for each of the following conditions:
			-	-
			-	-
			-	-
			-	-
			-	-
-	(4) McCulloh systems	X	Monthly	Test and record the current on each circuit at each supervising and subsidiary station under the following conditions:

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
			-	-
			-	-
			-	-
			-	-
			-	-
			-	-
-	(5) Radio alarm supervising station receiver (RASSR) and radio alarm repeater station	X	Monthly	Cause each of the following conditions at each of the supervising or subsidiary stations

-	Component	Initial Acceptance	Periodic Frequency	Method
	receiver (RARSR)			and all repeater station radio transmitting and receiving equipment; verify receipt of correct signals at the supervising station:
			-	-
			-	-
			-	-
-	(6) Private microwave radio systems	X	Monthly	Cause each of the following conditions at each of the supervising or subsidiary stations and all repeater station radio transmitting and receiving equipment; verify receipt of correct signals at the supervising station:
			-	-
			-	-
			-	-
			-	-
-	(7) Performance-based technologies	X	Monthly	Perform tests to ensure the monitoring of integrity of the transmission technology and technology path. Where a single communications path is used, disconnect the communication path. Verify that failure of the path is annunciated at the supervising station

-	Component	Initial Acceptance	Periodic Frequency	Method
				within 60 minutes of the failure (within 5 minutes for communication equipment installed prior to adoption of the 2013 edition of *NFPA 72*). Restore the communication path. Where multiple communication paths are used, disconnect both communication paths and confirm that failure of the path is annunciated at the supervising station within not more than 6 hours of the failure (within 24 hours for communication equipment installed prior to adoption of the 2013 edition of *NFPA 72*). Restore both communication paths.
28.	Public emergency alarm reporting system transmission equipment	-	-	-	
-		(1) Publicly accessible alarm box	X	Semiannually	Actuate publicly accessible initiating device(s) and verify receipt of not less than three complete rounds of signal impulses. Perform this test under normal circuit conditions. If the device is equipped for open circuit operation (ground return), test it in this condition as one of the semiannual tests.
-		(2) Auxiliary box	X	Annually	Test each initiating circuit of the auxiliary box by actuation of a protected premises initiating device connected to that circuit. Verify receipt of not less than three

-	Component	Initial Acceptance	Periodic Frequency	Method
				complete rounds of signal impulses.
-	(3) Master box	-	-	-
-	(a) Manual operation	X	Semiannually	Perform the tests prescribed for 28(1).
-	(b) Auxiliary operation	X	Annually	Perform the tests prescribed for 28(2).
29.	Low-power radio (wireless systems)	X	N/A	The following procedures describe additional acceptance and reacceptance test methods to verify wireless protection system operation:
			-	-
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
30.	Mass notification systems	-	-	-
-	(1) Functions	X	Annually	At a minimum, test control unit to verify correct receipt of alarm, supervisory, and trouble signals

-	Component	Initial Acceptance	Periodic Frequency	Method
				(inputs); operation of evacuation signals and auxiliary functions (outputs); circuit supervision, including detection of open circuits and ground faults; and power supply supervision for detection of loss of ac power and disconnection of secondary batteries.
-	(2) Fuses	X	Annually	Verify the rating and supervision.
-	(3) Interfaced equipment	X	Annually	Verify integrity of single or multiple circuits providing interface between two or more control units. Test interfaced equipment connections by operating or simulating operation of the equipment being supervised. Verify signals required to be transmitted at the control unit.
-	(4) Lamps and LEDs	X	Annually	Illuminate lamps and LEDs.
-	(5) Primary (main) power supply	X	Annually	Disconnect all secondary (standby) power and test under maximum load, including all alarm appliances requiring simultaneous operation. Reconnect all secondary (standby) power at end of test. For redundant power supplies, test each separately.
-	(6) Audible textual notification appliances (loudspeakers and other appliances to convey voice messages)	X	Annually	Measure sound pressure level with a sound level meter meeting ANSI/ASAS1.4/Part 1, *Electroacoustics — Sound Level Meters — Part 1: Specifications,* Type 2 requirements.

-	Component	Initial Acceptance	Periodic Frequency	Method
				Measure and record levels throughout protected area. Set the sound level meter in accordance with ANSI/ASA S3.41, *Audible Emergency Evacuation (E2) and Evacuation Signals with Relocation Instructions (ESRI),* using the time-weighted characteristic F (FAST). Record the maximum output when the audible emergency evacuation signal is on.
			-	-
-	(7) Visual	X	Annually	Perform test in accordance with manufacturer's published instructions. Verify appliance locations to be per approved layout and confirm that no floor plan changes affect the approved layout. Verify the candela rating or method of candela control marking on each visual appliance and rating when reported by the FACU agrees with the approved drawings. Confirm that each appliance flashes.
-	(8) Control unit functions and no diagnostic failures are indicated	X	Annually	Review event log file and verify that the correct events were logged. Review system diagnostic log file; correct deficiencies noted in file. Delete unneeded log files. Delete unneeded error files.

-	Component	Initial Acceptance	Periodic Frequency	Method
				Verify that sufficient free disk space is available. Verify unobstructed flow of cooling air is available. Change/clean filters, cooling fans, and intake vents.
-	(9) Control unit reset	X	Annually	Power down the central control unit computer and restart it.
-	(10) Control unit security	X	Annually	If remote control software is loaded onto the system, verify that it is disabled to prevent unauthorized system access.
-	(11) Audible/visual functional test	X	Annually	Send out an alert to a diverse set of predesignated receiving devices and confirm receipt. Include at least one of each type of receiving device.
-	(12) Software backup	X	Annually	Make full system software backup. Rotate backups based on accepted practice at site.
-	(13) Secondary power test	X	Annually	Disconnect ac power. Verify the ac power failure alarm status on central control unit. With ac power disconnected, verify battery voltage under load.
-	(14) Wireless signals	X	Annually	Check forward/reflected radio power is within specifications.
-	(15) Antenna	X	Annually	Check forward/reflected radio power is within specifications. Verify solid electrical connections with no observable corrosion.
-	(16) Transceivers	X	Annually	Verify proper operation and mounting is not

-	Component	Initial Acceptance	Periodic Frequency	Method
				compromised.

[a]Some transmission equipment (such as, but not limited to, cable modems, fiber-optic interface nodes, and VoIP interfaces) are typically powered by the building's electrical system using a secondary (standby) power supply that does not meet the requirements of this Code. This is intended to ensure that the testing authority verifies full secondary (standby) power as required by Chapter 10. Additionally, refer to Table 14.4.3.2, items 7 through 9, for secondary (standby) power supply testing.

[b]The automatic transmission of the check-in (handshake) signal can take up to 60 minutes to occur.

[c]See Table 14.4.3.2, Item 4(1) for the testing of transmission equipment.

[d]The battery tests in Table 14.4.3.2, Item 9, are based on VRLA batteries and it is the intent that the tests specified in (1) through (4) be performed in order. FACU automated load testing of VRLA batteries in accordance with Table 14.4.3.2, Item 9(5), with record of ambient temperature is an acceptable alternative to prescriptive manual methods using test equipment. For other secondary battery types, refer to the battery manufacturer's published instructions or IEEE 450, *Recommended Practice for Maintenance, Testing, and Replacement of Vented Lead-Acid Batteries for Stationary Applications*, for vented lead-acid batteries, and IEEE 1106, *Recommended Practice for Installation, Maintenance, Testing, and Replacement of Vented Nickel-Cadmium Batteries for Stationary Applications*, for nickel-cadmium batteries.

[e]If the charger is adjustable, adjust the output voltage to 2.265 volts per cell ±0.015 volts at 77°F (25°C) or as specified by the alarm equipment manufacturer.

[f]See A.14.4.3.2 Item 9(4). A load test per Item 9(5) is permitted in lieu of an ohmic test.

[g]See A.14.4.3.2 Item 9(5).

[h]The voltmeter sensitivity has been changed from 1000 ohms per volt to 100 ohms per volt so that the false ground readings (caused by induced voltages) are minimized.

[i]Initiating devices such as smoke detectors used for elevator recall, closing dampers, or releasing doors held in the open position that are permitted by the Code *(see9.6.3 of NFPA 101)* to initiate supervisory signals at the fire alarm control unit (FACU) should be tested at the same frequency (annual) as those devices when they are generating an alarm signal. They are not supervisory devices, but they initiate a supervisory signal at the FACU.

[j]Fusible thermal link detectors are commonly used to close fire doors and fire dampers electrically connected to the fire alarm control unit. They are actuated by the presence of external heat, which causes a solder element in the link to fuse, or by an electric thermal device, which, when energized, generates heat within the body of the link, causing the link to fuse and separate.

[k]Note, it is customary for the manufacturer of the smoke detector to test a particular product from an aerosol provider to determine acceptability for use in smoke entry testing of their smoke detector/smoke alarm. Magnets are not acceptable for smoke entry tests.

[l] There are some detectors that use magnets as a manufacturer's calibrated sensitivity test instrument.

[m]For example, it might not be possible to individually test the heat sensor in a thermally enhanced smoke detector.

[n]Manufacturer's published instructions should be consulted to ensure a proper operational test. No suppression gas or agent is expected to be discharged during the test of the solenoid. *See Test Plan of 14.2.10*.

[o]A monitor module installed on an interface device is not considered a supervisory device and

therefore not subject to the quarterly testing frequency requirement. Test frequencies for interface devices should be in accordance with the applicable standard. For example, fire pump controller alarms such as phase reversal are required to be tested annually. If a monitor module is installed to identify phase reversal on the fire alarm control unit, it is not necessary to test for phase reversal four times a year.

[p]Chapter 18 would require 15 dB over average ambient sound for public mode spaces. Sometimes the ambient sound levels are different from what the design was based upon. Private operating mode would require 10 dB over average ambient at the location of the device.

[q]Where building, system, or occupancy changes have been observed, the owner should be notified of the changes. New devices might need to be installed and tested per the initial acceptance testing criteria.

[r]See A.14.4.3.2 and Table 14.4.3.2, Item 24.

Statement of Problem and Substantiation for Public Input

The footnote stating that magnets are not acceptable for smoke entry tests has been in Table 14.4.3.2 for many editions of the code. This language should be added to the method section of 17 (7) (a) to add clarity as the footnotes are often overlooked.

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Committee Statement

Resolution: FR-5349-NFPA 72-2022

Statement: Item 17(7)(A) - The new sentence is moved from footnote K to the table to make it more visible to the user.

Items 8 and 9, note c - Secondary batteries have become more of an issue for fire alarm systems. NFPA 72, during the last cycle, added requirements for batteries to be listed or component recognized. Chargers used today can offer so much more information, verification, testing data, etc. for the batteries connected to the system. This option allows manufacturers to have their FACUs listed to offer these functions and if a listing should be deemed equivalent to the use of battery testers. This is similar to smoke detector sensitivity testing where a FACU can provide that testing is listed for the purpose.

Items 9 (2) and 9(4), note e and note f - A task group was set up to conduct an extensive, detailed review of each table footnote and determined what could be moved into the testing table itself and what should remain as a table footnote. In accordance with the Manual of Style, mandatory language should reside in the table and not in the footnote.

Item 17(4)(c) - The sentence was revised to clarify the functional testing methods.

Item 18 - The testing of abort switches currently refers to the sequence of operation for development of and/or verification of the system sequence of operation for simple abort

function. The test requirement is vague and the sequence of operation should have already been determined prior to acceptance testing. This revision clarifies the testing of an abort switch.

Items 4(6), 10, 17(11) - Manual of style does not permit requirements in tables.

Public Input No. 318-NFPA 72-2022 [Section No. 14.4.3.2]

14.4.3.2*

Systems and associated equipment shall be tested according to Table 14.4.3.2.

Table 14.4.3.2 Testing

-	Component	Initial Acceptance	Periodic Frequency	Method
1. All equipment	X	-		See Table 14.3.1.
2. Control unit	-	-	-	
-	(1) Functions	X	Annually	Verify correct receipt of alarm, supervisory, and trouble signals (inputs); operation of evacuation signals and auxiliary functions (outputs); circuit supervision, including detection of open circuits and ground faults; and power supply supervision for detection of loss of ac power and disconnection of secondary batteries.
-	(2) Fuses	X	Annually	Verify rating and supervision.
-	(3) Interfaced equipment	X	Annually	Verify integrity of single or multiple circuits providing interface between two or more control units. Test interfaced equipment connections by operating or simulating operation of the equipment being supervised. Verify signals required to be transmitted at the control unit.
-	(4) Lamps and LEDs	X	Annually	Illuminate lamps and LEDs.
-	(5) Primary (main) power supply	X	Annually	Disconnect all secondary (standby) power and test under maximum load, including all alarm appliances requiring simultaneous operation. Reconnect all secondary (standby) power at end of test. Test redundant power supplies separately.

-	Component	Initial Acceptance	Periodic Frequency	Method
3.	Alarm control unit trouble signals	-	-	-
-	(1) Audible and visual	X	Annually	Verify operation of control unit trouble signals. Verify ring-back feature for systems using a trouble-silencing switch that requires resetting.
-	(2) Disconnect switches	X	Annually	If control unit has disconnect or isolating switches, verify performance of intended function of each switch. Verify receipt of trouble signal when a supervised function is disconnected.
-	(3) Ground-fault monitoring circuit	X	Annually	If the system has a ground detection feature, verify the occurrence of ground-fault indication whenever any installation conductor is grounded.
-	(4) Transmission of signals to off-premises location	X	Annually	Actuate an initiating device and verify receipt of alarm signal at the off-premises location.
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
4. Supervising station alarm systems — transmission equipment	-	-	-	
-	(1) All equipment	X	Annually	[a]Test all system functions and features in accordance with the equipment manufacturer's published instructions for correct operation in conformance with the applicable sections of Chapter 26.
			-	-
			-	-
-	(2) Digital alarm communicator transmitter (DACT)	X	Annually	Except for DACTs installed prior to adoption of the 2013 edition of NFPA 72 that are connected to a telephone line

-	Component	Initial Acceptance	Periodic Frequency	Method
				(number) that is also supervised for adverse conditions by a derived local channel, ensure connection of the DACT to two separate means of transmission.
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(3) Digital alarm radio transmitter (DART)	X	Annually	Disconnect the primary telephone line. Verify transmission of a trouble signal to the supervising station by the DART occurs within 4 minutes.
-	(4) McCulloh transmitter	X	Annually	Actuate initiating device. Verify production of not less than three complete rounds of not less than three signal impulses each by the McCulloh transmitter.

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			(2) Ground	
			-	-
			-	-
			-	-
			-	-
			(2) Ground	
			-	-
-	(5) Radio alarm transmitter (RAT)	X	Annually	Cause a fault between elements of the transmitting equipment. Verify indication of the fault at the protected premises, or transmission of trouble signal to the supervising station.
-	(6) Performance-based technologies	X	Annually	Perform tests to ensure the monitoring of integrity of the transmission technology and technology path. Where shared communications equipment is used as permitted by 26.6.3.12, provided secondary (standby)

-	Component	Initial Acceptance	Periodic Frequency	Method
				power sources shall be tested in accordance with Table 14.4.3.2, item 7, 8, or 9, as applicable.

-	Component	Initial Acceptance	Periodic Frequency	Method
5.	Emergency communications equipment	-	-	-
-	(1) Amplifier/tone generators	X	Annually	Verify correct switching and operation of backup equipment.
-	(2) Call-in signal silence	X	Annually	Operate/function and verify receipt of correct visual and audible signals at control unit.
-	(3) Off-hook indicator (ring down)	X	Annually	Install phone set or remove phone from hook and verify receipt of signal at control unit.
-	(4) Phone jacks	X	Annually	Visually inspect phone jack and initiate communications path through jack.
-	(5) Phone set	X	Annually	Actuate each phone set and verify correct operation.
-	(6) System performance	X	Annually	Operate the system with a minimum of any five handsets simultaneously. Verify voice quality and clarity.
6.	Engine-driven generator	X	Monthly	If an engine-driven generator dedicated to the system is used as a required power source, verify operation of the generator and transfer switch in accordance with NFPA 110 by the building owner.
7.	Emergency power supply system/stored-emergency power supply system (EPSS/SEPSS)	X	Annually	If an EPSS/SEPSS dedicated to the system is used as a required power source, verify by the building owner operation of the

-	Component	Initial Acceptance	Periodic Frequency	Method	
			EPSS/SEPSS in accordance with NFPA 111.		
8.	Secondary (standby) power supply[c]	X	Annually	Disconnect all primary (main) power supplies and verify the occurrence of required trouble indication for loss of primary power. Measure or verify the system's standby and alarm current demand using the equipment manufacturer's data and verify the battery's rated capacity exceeds the system's power demand, including the safety margin. Operate general alarm systems a minimum of 5 minutes and emergency voice communications systems for a minimum of 15 minutes. Reconnect primary (main) power supply at end of test.	
9.	VRLA battery and charger[d]	-	-		Prior t conduc any ba testing by the conduc test, th system softwa stored volatile memo protec loss.

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(1) Temperature test	X	Semiannually	Upon initially opening the cabinet door, measure the internal ambient temperature of the enclosure. Measure the temperature of each battery cell/unit at the negative terminal with an infrared thermometer. Replace any battery cell/unit if its temperature is greater than 18°F (10°C) above the measured internal ambient temperature of the enclosure.
-	(2) Charger test[e]	X	Semiannually	With the battery fully charged and connected to the charger, measure the voltage across the battery with a voltmeter. Verify the voltage is within the battery/alarm equipment manufacturer's recommendations. If the voltage is outside of the specified limits, either adjust the charger to within limits or replace the charger.
-	(3) Cell/Unit voltage test	X	Semiannually	With the battery fully charged and connected to the charger, measure the voltage of each cell/unit with a voltmeter. Replace the battery when any cell/unit measures a voltage less than 13.26 volts.
-	(4) Ohmic test[f]	X	N/A	When the battery is installed, establish a baseline ohmic value for each battery cell/unit or where available use baseline ohmic values provided by the battery or test equipment

-	Component	Initial Acceptance	Periodic Frequency	Method	
				manufacturer. In either case record the base line ohmic value on each battery cell/unit.	
		-	-	-	Semia
-	(5) Replacement/Load test[g]	-		3 years	Replac battery condu test of battery capaci test th based

-	Component	Initial Acceptance	Periodic Frequency	Method	
					manuf specifi for a d rate of or mor applyi curren indicat the se hourly discha contin until th termin voltag decrea the en voltag specifi the manuf Recor test du and ca the ba capaci includi adjust ambie tempe Repla battery capaci less th equal or at th sched interva battery capaci less th
10.	Public emergency alarm reporting system — wired system	X	Daily	Manual tests of the power supply for public reporting circuits shall be made and recorded at least once during each 24-hour period. Such tests shall include the following: - -	

-	Component	Initial Acceptance	Periodic Frequency	Method

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
11.	Remote annunciators	X	Annually	Verify the correct operation and identification of annunciators. If provided, verify the correct operation of annunciator under a fault condition.
12.	Reserved	-	-	-
13.	Reserved	-	-	-
14.	Wireless communications	X	Annually	Test per the manufacturer's published instructions.
15.	Conductors — metallic	-	-	-
-	(1) Stray voltage	X	N/A	Test all installation conductors with a volt/ohmmeter to verify that there are no stray (unwanted) voltages between installation conductors or between installation conductors and ground. Verify the maximum allowable stray voltage does not exceed 1 volt ac/dc, unless a different threshold is specified in the manufacturer's published instructions for the installed equipment.
-	(2) Ground faults	X	N/A	Test all installation conductors, other than those intentionally and permanently grounded, for isolation from ground per the installed equipment manufacturer's published instructions.
-	(3) Short-circuit faults	X	N/A	Test all installation conductors, other than those intentionally connected together, for conductor-to-

-	Component	Initial Acceptance	Periodic Frequency	Method	
				conductor isolation per the manufacturer's published instructions for the installed equipment. Also test these same circuits conductor-to-ground.	
-	(4) Loop resistance	X	N/A	With each initiating and indicating circuit installation conductor pair short-circuited at the far end, measure and record the resistance of each circuit. Verify that the loop resistance does not exceed the limits specified in the manufacturer's published instructions for the installed equipment.	
-	(5) Circuit integrity	X	N/A	For initial and reacceptance testing, confirm the introduction of a fault in any circuit monitored for integrity results in a trouble indication at the fire alarm control unit. Open one connection at not less than 10 percent of the initiating devices, notification appliances and controlled devices on every initiating device circuit, notification appliance circuit, and signaling line circuit. Confirm all circuits perform as indicated in Sections 23.5, 23.6, and 23.7.	
	-	-	N/A	Annually	For pe testing each i device notifica applia circuit, signali circuit correc

-	Component	Initial Acceptance	Periodic Frequency	Method	
					indicat the co unit. C all circ perfor indicat Sectio 23.6, a 23.7.
16.	Nonmetallic pathways	-	-	-	
-	(1) Optical fiber cables	X	N/A	Test the transmission characteristics of optical fibers by the use of an optical power meter or by an optical time domain reflectometer used to measure the relative power loss of the line. Test result data must meet or exceed ANSI/TIA 568.3, *Optical Fiber Cabling and Components Standard*, related to fiber-optic lines and connection/splice losses and the control unit manufacturer's published specifications.	
-	(2) Circuit integrity	X	N/A	For initial and reacceptance testing, confirm the introduction of a fault in any circuit monitored for integrity results in a trouble indication at the fire alarm control unit. Open one connection at not less than 10 percent of the initiating devices, notification appliances, and controlled devices on every initiating device circuit, notification appliance circuit, and signaling line circuit. Confirm all circuits perform as indicated in Sections 23.5, 23.6, and 23.7.	

	Component	Initial Acceptance	Periodic Frequency	Method	
	-	-	N/A	Annually	For pe testing each i device notifica applia circuit, signali circuit correc indicat the co unit. C all circ perfor indicat Sectio 23.6, a 23.7.
17.	Initiating devices[i]	-	-	-	
-	(1) Electromechanical releasing device	-	-	-	
-	(a) Nonrestorable-type link	X	Annually	Verify correct operation by removal of the fusible link and operation of the associated device.	
-	(b) Restorable-type link[j]	X	Annually	Verify correct operation by removal of the fusible link and operation of the associated device.	
-	(2) Fire extinguishing system(s) or suppression system(s) alarm switch	X	Annually	Operate the switch mechanically or electrically and verify receipt of signal by the fire alarm control unit.	
-	(3) Fire–gas and other detectors	X	Annually	Test fire–gas detectors and other fire detectors as prescribed by the manufacturer and as necessary for the application.	
-	(4) Heat detectors	-	-	-	
-	(a) Fixed-temperature, rate-of-rise, rate of compensation, restorable line, spot type	X	Annually (see 14.4.4.5)	Perform heat test with a listed and labeled heat source or in accordance with the manufacturer's published instructions.	

		Component	Initial Acceptance	Periodic Frequency	Method
		(excluding pneumatic tube type)			Assure that the test method for the installed equipment does not damage the nonrestorable fixed-temperature element of a combination rate-of-rise/fixed-temperature element detector.
		(b) Fixed-temperature, nonrestorable line type	X	Annually	Do not perform heat test. Test functionality mechanically and electrically. Measure and record loop resistance. Investigate changes from acceptance test.
		(c) Fixed-temperature, nonrestorable spot type	X	See Method	After 15 years from initial installation, replace all devices or have 2 detectors per 100 laboratory tested. Replace the 2 detectors with new devices. If a failure occurs on any of the detectors removed, remove and test additional detectors to determine either a general problem involving faulty detectors or a localized problem involving 1 or 2 defective detectors.
				~~Do not perform heat tests. Test functionality mechanically and electrically.~~	
		(d) Restorable line type, pneumatic tube only	X	Annually	Perform heat tests (where test chambers are in circuit), with a listed and labeled heat source or in accordance with the

-	Component	Initial Acceptance	Periodic Frequency	Method
				manufacturer's published instructions of the detector or conduct a test with pressure pump.
-	(e) Single- and multiple-station heat alarms	X	Annually	Conduct functional tests according to manufacturer’s published instructions. Do not test nonrestorable heat detectors with heat.
-	(5) Manual fire alarm boxes	X	Annually	Operate manual fire alarm boxes per the manufacturer’s published instructions. Test both key-operated presignal and general alarm manual fire alarm boxes.
-	(6) Radiant energy fire detectors	X	Semiannually	Test flame detectors and spark/ember detectors in accordance with the manufacturer’s published instructions to determine that each detector is operative.
			-	-
			-	-
			-	-
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
-	(7) Smoke detectors — functional test	-	-	-
-	(a) In other than one- and two-family dwellings, system detectors	X	Annually	[k]Test smoke detectors in place to ensure smoke entry into the sensing chamber and an alarm response. Use smoke or a listed and labeled product acceptable to the manufacturer or in accordance with their published instructions. Other methods listed in the manufacturer's published instructions that ensure smoke entry from the protected area, through the vents, into

-	Component	Initial Acceptance	Periodic Frequency	Method
				the sensing chamber can be used.
-	(b) Single- and multiple-station smoke alarms connected to protected premises systems	X	Annually	Perform a functional test on all single- and multiple-station smoke alarms connected to a protected premises fire alarm system by putting the smoke alarm into an alarm condition.
-	(c) System smoke detectors used in one- and two-family dwellings	X	Annually	Conduct functional tests according to manufacturer's published instructions.
-	(d) Air sampling	X	Annually	Test with smoke or a listed and labeled product acceptable to the manufacturer or in accordance with their published instructions. In the absence of an automatic, listed airflow supervision feature, test from the end sampling port or point on each pipe run and verify airflow through all other ports or points.
-	(e) Duct type	X	Annually	In addition to the testing required in Table 14.4.3.2(17)(7)(a) and Table 14.4.3.2(17)(8), test duct smoke detectors that use sampling tubes to ensure that they will properly sample the airstream in the duct using a method acceptable to the manufacturer or in accordance with their published instructions.
-	(f) Projected beam type	X	Annually	Test the detector by introducing smoke, other aerosol, or an optical filter into the beam path.
-	(g) Smoke detector with built-in thermal element	X	Annually	Operate both portions of the detector independently as described for the

-	Component	Initial Acceptance	Periodic Frequency	Method
				respective devices.
-	(h) Smoke detectors with control output functions	X	Annually	Verify that the control capability remains operable even if all of the initiating devices connected to the same initiating device circuit or signaling line circuit are in an alarm state.
-	(8) Smoke detectors — sensitivity testing	-	-	-
-	In other than one- and two-family dwellings, system detectors	N/A	See 14.4.4.3	lPerform any of the following tests to ensure that each smoke detector is within its listed and marked sensitivity range:
			-	-
			-	-
			-	-
			-	-
			-	-
-	(9) Carbon monoxide detectors/carbon	-	-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
	monoxide alarms connected to protected premises systems			
-	(a) CO entry test	X	Annually	Test the devices in place to ensure CO entry to the sensing chamber by introduction through the vents, to the sensing chamber of listed and labeled product acceptable to the manufacturer or in accordance with manufacturer's published instructions
-	(b) Air sampling	X	Annually	Per test methods documented in the manufacturer's published instructions, verify detector alarm response through the end sampling port on each pipe run; verify airflow through all other ports as well.
-	(c) Duct type	X	Annually	Test or inspect air duct detectors to ensure that the device will sample the airstream in accordance with the manufacturer's published instructions.
-	(d) CO detector with control output functions	X	Annually	Within each protected space, verify that the control capability remains operable even if all of the initiating devices connected to the same initiating device circuit or signaling line circuit are in an alarm state.
-	(10) Initiating devices, supervisory	-	-	-
-	(a) Control valve switch	X	Semiannual	Operate valve and verify signal receipt to be within the first two revolutions of the handwheel or within one-fifth of the travel distance, or per the

-	Component	Initial Acceptance	Periodic Frequency	Method
				manufacturer's published instructions. Continue to cycle outside stem and yoke valves and verify switch does not reset during full travel of the valve stem.
-	(b) High- or low-air pressure switch	X	Annually	Operate switch and verify receipt of signal is obtained where the required pressure is increased or decreased a maximum 10 psi (70 kPa) from the required pressure level or in accordance with manufacturer's published instructions.
-	(c) Steam pressure	X	Annually	Operate switch and verify receipt of signal is obtained before pressure decreases to 110 percent of the minimum operating pressure of the steam-operated equipment.
-	(d) Pressure supervisory devices for other sources	X	Annually	Operate switch and verify receipt of signal is obtained where the required pressure is increased or decreased from the normal operating pressure by an amount specified in approved design documents.
-	(e) Room temperature switch	X	Annually	Operate switch and verify receipt of signal to indicate the decrease in room temperature to 40°F (4.4°C) and its restoration to above 40°F (4.4°C).
-	(f) Water level switch	X	Annually	Operate switch and verify receipt of signal indicating the water level raised or lowered a maximum 3 in. (70 mm) from the required level within a pressure tank, or a

-	Component	Initial Acceptance	Periodic Frequency	Method
				maximum 12 in. (300 mm) from the required level of a nonpressure tank. Also verify its restoral to required level.
-	(g) Water temperature switch	X	Annually	Operate switch and verify receipt of signal to indicate the decrease in water temperature to 40°F (4.4°C) and its restoration to above 40°F (4.4°C).
-	(11) Mechanical, electrosonic, or pressure-type waterflow device	X	Semiannually	Water shall be flowed through an inspector's test connection indicating the flow of water equal to that from a single sprinkler of the smallest orifice size installed in the system or other listed and approved waterflow switch test methods for wet-pipe systems, or an alarm test bypass connection for dry-pipe, pre-action, or deluge systems in accordance with NFPA 25.
-	(12) Multi-sensor fire detector or multi-criteria fire detector or combination fire detector	X	Annually	1. Test each detector in accordance with the manufacturer’s published instructions. Test each of the sensors present within the detector (e.g., smoke/heat/CO, etc.) independently for the specific detection principle, regardless of the configuration status at the time of testing, or individual sensors together if the technology allows individual sensor responses to be verified, or where sensors cannot be tested individually, test the primary sensor.[m]

	Component	Initial Acceptance	Periodic Frequency	Method
18.	Special hazard equipment			
	(1) Abort switch (dead-man type)	X	Annually	Operate abort switch and verify correct sequence and operation.

-		Component	Initial Acceptance	Periodic Frequency	Method
-		(2) Abort switch (recycle type)	X	Annually	Operate abort switch and verify development of correct matrix with each sensor operated.
-		(3) Abort switch (special type)	X	Annually	Operate abort switch and verify correct sequence and operation in accordance with authority having jurisdiction. Observe sequencing as specified on as-built drawings or in system owner's manual.
-		(4) Cross-zone detection circuit	X	Annually	Operate one sensor or detector on each zone. Verify occurrence of correct sequence with operation of first zone and then with operation of second zone.
-		(5) Matrix-type circuit	X	Annually	Operate all sensors in system. Verify development of correct matrix with each sensor operated.
-		(6) Release solenoid circuit[n]	X	Annually	Verify operation of solenoid.
-		(7) Squibb release circuit	X	Annually	Use AGI flashbulb or other test light approved by the manufacturer. Verify operation of flashbulb or light.
-		(8) Verified, sequential, or counting zone circuit	X	Annually	Operate required sensors at a minimum of four locations in circuit. Verify correct sequence with both the first and second detector in alarm.
-		(9) All above devices or circuits or combinations thereof	X	Annually	Verify supervision of circuits by creating an open circuit.
19.	Combination systems	-	-	-	

	-	Component	Initial Acceptance	Periodic Frequency	Method
	-	(1) Fire extinguisher electronic monitoring device/system	X	Annually	Test communication between the device connecting the fire extinguisher electronic monitoring device/system and the fire alarm control unit to ensure proper signals are received at the fire alarm control unit and remote annunciator(s) if applicable.
	-	(2) Carbon monoxide device/system	X	Annually	Test communication between the device connecting the carbon monoxide device/system and the fire alarm control unit to ensure proper signals are received at the fire alarm control unit and remote annunciator(s) if applicable.
20.	Interface equipment[o]	X	See 14.4.4.4		Test interface equipment connections by operating or simulating the equipment being supervised. Verify signals required to be transmitted are received at the control unit. Test frequency for interface equipment is the same as the frequency required by the applicable NFPA standard(s) for the equipment being supervised.
21.	Guard's tour equipment	X	Annually		Test the device in accordance with the manufacturer's published instructions.

-	Component	Initial Acceptance	Periodic Frequency	Method	
22.	Alarm notification appliances	-	-	-	
-	(1) Audible[p]	X	N/A	For initial and reacceptance testing, measure sound pressure levels for alert tone signals and evacuation signal tones with a sound level meter meeting ANSI/ASAS1.4/Part 1, *Electroacoustics — Sound Level Meters — Part 1: Specifications,* Type 2 requirements. Measure sound pressure levels to determine if they are in compliance with Chapter 18 and the required performance, as documented per 7.3.4. Set the sound level meter in accordance with ANSI/ASA S3.41, *Audible Emergency Evacuation (E2) and Evacuation Signals with Relocation Instructions (ESRI),* using the time-weighted characteristic F (FAST).	
	-	-	N/A	Annually	[q]For p testing the op of the notifica applia
-	(2) Audible textual notification appliances (loudspeakers and other appliances to convey voice messages)	X	N/A	For initial and reacceptance testing, measure sound pressure levels for signals with a sound level meter meeting ANSI/ASAS1.4/Part 1, *Electroacoustics — Sound Level Meters — Part 1: Specifications,* Type 2 requirements. Measure sound	

-	Component	Initial Acceptance	Periodic Frequency	Method	
				pressure levels throughout the protected area to determine if they are in compliance with Chapter 18 and the required performance, as documented per 7.3.4. Set the sound level meter in accordance with ANSI/ASA S3.41, *Audible Emergency Evacuation (E2) and Evacuation Signals with Relocation Instructions (ESRI),* using the time-weighted characteristic F (FAST).	
			-	-	
	-	-	N/A	Annually	[q]For p testing the op of the notifica applia
-	(3) Visual	X	N/A	Perform initial and reacceptance testing in accordance with the manufacturer's published instructions. Verify appliance locations to be per approved layout and confirm that no floor plan changes affect the approved layout. Verify the candela rating or method of candela control marking on each visual appliance and rating when reported by the FACU agrees with the approved drawings. Confirm that each appliance flashes.	

		Component	Initial Acceptance	Periodic Frequency	Method	
	-	-	-	N/A	Annually	For pe testing that ea applia flashes
23.	Exit marking audible notification appliance	X	Annually	Perform tests in accordance with manufacturer's published instructions.		
24.	Emergency control functions[r]	X	Annually	For initial, reacceptance, and periodic testing, verify emergency control function interface device activation. Where an emergency control function interface device is disabled or disconnected during initiating device testing, verify that the disabled or disconnected emergency control function interface device has been properly restored, including electromagnetic devices used for door releasing services as part of a fire alarm system.		
25.	Two-way emergency communications systems	X	Annually	Use the manufacturer’s published instructions and the as-built drawings provided by the system supplier to verify correct operation after the initial testing phase has been		

-	Component	Initial Acceptance	Periodic Frequency	Method
			performed by the supplier or by the supplier's designated representative.	
			-	-
			-	-
			-	-
			-	-
			-	-
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
26. Special procedures	-	-	-	
-	(1) Alarm verification	X	Annually	Verify time delay and alarm response for smoke detector circuits identified as having alarm verification.
-	(2) Multiplex systems	X	Annually	Verify communications between sending and receiving units under both primary and secondary power.
			-	-
			-	-
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
27.	Supervising station alarm systems — receiving equipment	-	-	-
-	(1) All equipment	X	Monthly	Perform tests on all system functions and features in accordance with the equipment manufacturer's published instructions for correct operation in conformance with the applicable sections of Chapter 26.
			-	-
			-	-
-	(2) Digital alarm communicator receiver (DACR)	X	Monthly	Disconnect each transmission means in turn from the DACR, and verify audible and visual annunciation of a trouble signal in the supervising station.
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(3) Digital alarm radio receiver (DARR)	X	Monthly	Cause the following conditions of all DARRs on all subsidiary and repeater station receiving equipment. Verify receipt at the supervising station of correct signals for each of the following conditions:
			-	-
			-	-
			-	-
			-	-
			-	-
-	(4) McCulloh systems	X	Monthly	Test and record the current on each circuit at each supervising and subsidiary station under the following conditions:
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
			-	-
			-	-
			-	-
			-	-
-	(5) Radio alarm supervising station receiver (RASSR) and radio alarm repeater station receiver (RARSR)	X	Monthly	Cause each of the following conditions at each of the supervising or subsidiary stations and all repeater station radio transmitting and receiving equipment; verify receipt of correct signals at the supervising station:
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
-	(6) Private microwave radio systems	X	Monthly	Cause each of the following conditions at each of the supervising or subsidiary stations and all repeater station radio transmitting and receiving equipment; verify receipt of correct signals at the supervising station:
			-	-
			-	-
			-	-
			-	-
-	(7) Performance-based technologies	X	Monthly	Perform tests to ensure the monitoring of integrity of the transmission technology and technology path. Where a single communications path is used, disconnect the communication path. Verify that failure of the path is annunciated at the supervising station within 60 minutes of the failure (within 5 minutes for communication equipment installed prior to adoption of the 2013 edition of *NFPA 72*). Restore the communication path. Where multiple

-	Component	Initial Acceptance	Periodic Frequency	Method
				communication paths are used, disconnect both communication paths and confirm that failure of the path is annunciated at the supervising station within not more than 6 hours of the failure (within 24 hours for communication equipment installed prior to adoption of the 2013 edition of *NFPA 72*). Restore both communication paths.
28.	Public emergency alarm reporting system transmission equipment	-	-	-	
-	(1) Publicly accessible alarm box	X	Semiannually	Actuate publicly accessible initiating device(s) and verify receipt of not less than three complete rounds of signal impulses. Perform this test under normal circuit conditions. If the device is equipped for open circuit operation (ground return), test it in this condition as one of the semiannual tests.
-	(2) Auxiliary box	X	Annually	Test each initiating circuit of the auxiliary box by actuation of a protected premises initiating device connected to that circuit. Verify receipt of not less than three complete rounds of signal impulses.
-	(3) Master box	-	-	-
-	(a) Manual operation	X	Semiannually	Perform the tests prescribed for 28(1).
-	(b) Auxiliary operation	X	Annually	Perform the tests prescribed for 28(2).

-	Component	Initial Acceptance	Periodic Frequency	Method
29. Low-power radio (wireless systems)	X	N/A	The following procedures describe additional acceptance and reacceptance test methods to verify wireless protection system operation:	

-	Component	Initial Acceptance	Periodic Frequency	Method
-			-	-
-			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
30. Mass notification systems	-	-	-	
-	(1) Functions	X	Annually	At a minimum, test control unit to verify correct receipt of alarm, supervisory, and trouble signals (inputs); operation of evacuation signals and auxiliary functions (outputs); circuit supervision, including detection of open circuits and ground faults; and power supply supervision for

-	Component	Initial Acceptance	Periodic Frequency	Method
				detection of loss of ac power and disconnection of secondary batteries.
-	(2) Fuses	X	Annually	Verify the rating and supervision.
-	(3) Interfaced equipment	X	Annually	Verify integrity of single or multiple circuits providing interface between two or more control units. Test interfaced equipment connections by operating or simulating operation of the equipment being supervised. Verify signals required to be transmitted at the control unit.
-	(4) Lamps and LEDs	X	Annually	Illuminate lamps and LEDs.
-	(5) Primary (main) power supply	X	Annually	Disconnect all secondary (standby) power and test under maximum load, including all alarm appliances requiring simultaneous operation. Reconnect all secondary (standby) power at end of test. For redundant power supplies, test each separately.
-	(6) Audible textual notification appliances (loudspeakers and other appliances to convey voice messages)	X	Annually	Measure sound pressure level with a sound level meter meeting ANSI/ASAS1.4/Part 1, *Electroacoustics — Sound Level Meters — Part 1: Specifications,* Type 2 requirements. Measure and record levels throughout protected area. Set the sound level meter in accordance with ANSI/ASA S3.41, *Audible Emergency Evacuation (E2) and Evacuation Signals*

	Component	Initial Acceptance	Periodic Frequency	Method
				with Relocation Instructions (ESRI), using the time-weighted characteristic F (FAST). Record the maximum output when the audible emergency evacuation signal is on.
	(7) Visual	X	Annually	Perform test in accordance with manufacturer's published instructions. Verify appliance locations to be per approved layout and confirm that no floor plan changes affect the approved layout. Verify the candela rating or method of candela control marking on each visual appliance and rating when reported by the FACU agrees with the approved drawings. Confirm that each appliance flashes.
	(8) Control unit functions and no diagnostic failures are indicated	X	Annually	Review event log file and verify that the correct events were logged. Review system diagnostic log file; correct deficiencies noted in file. Delete unneeded log files. Delete unneeded error files. Verify that sufficient free disk space is available. Verify unobstructed flow of cooling air is available. Change/clean filters, cooling fans, and intake vents.

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(9) Control unit reset	X	Annually	Power down the central control unit computer and restart it.
-	(10) Control unit security	X	Annually	If remote control software is loaded onto the system, verify that it is disabled to prevent unauthorized system access.
-	(11) Audible/visual functional test	X	Annually	Send out an alert to a diverse set of predesignated receiving devices and confirm receipt. Include at least one of each type of receiving device.
-	(12) Software backup	X	Annually	Make full system software backup. Rotate backups based on accepted practice at site.
-	(13) Secondary power test	X	Annually	Disconnect ac power. Verify the ac power failure alarm status on central control unit. With ac power disconnected, verify battery voltage under load.
-	(14) Wireless signals	X	Annually	Check forward/reflected radio power is within specifications.
-	(15) Antenna	X	Annually	Check forward/reflected radio power is within specifications. Verify solid electrical connections with no observable corrosion.
-	(16) Transceivers	X	Annually	Verify proper operation and mounting is not compromised.

[a]Some transmission equipment (such as, but not limited to, cable modems, fiber-optic interface nodes, and VoIP interfaces) are typically powered by the building's electrical system using a secondary (standby) power supply that does not meet the requirements of this Code. This is intended to ensure that the testing authority verifies full secondary (standby) power as required by Chapter 10. Additionally, refer to Table 14.4.3.2, items 7 through 9, for secondary (standby) power supply testing.

[b]The automatic transmission of the check-in (handshake) signal can take up to 60 minutes to occur.

[c]See Table 14.4.3.2, Item 4(1) for the testing of transmission equipment.

[d]The battery tests in Table 14.4.3.2, Item 9, are based on VRLA batteries and it is the intent that the tests specified in (1) through (4) be performed in order. FACU automated load testing of VRLA batteries in accordance with Table 14.4.3.2, Item 9(5), with record of ambient temperature is an acceptable alternative to prescriptive manual methods using test equipment. For other secondary battery types, refer to the battery manufacturer's published instructions or IEEE 450, *Recommended Practice for Maintenance, Testing, and Replacement of Vented Lead-Acid Batteries for Stationary Applications*, for vented lead-acid batteries, and IEEE 1106, *Recommended Practice for Installation, Maintenance, Testing, and Replacement of Vented Nickel-Cadmium Batteries for Stationary Applications*, for nickel-cadmium batteries.

[e]If the charger is adjustable, adjust the output voltage to 2.265 volts per cell ±0.015 volts at 77°F (25°C) or as specified by the alarm equipment manufacturer.

[f]See A.14.4.3.2 Item 9(4). A load test per Item 9(5) is permitted in lieu of an ohmic test.

[g]See A.14.4.3.2 Item 9(5).

[h]The voltmeter sensitivity has been changed from 1000 ohms per volt to 100 ohms per volt so that the false ground readings (caused by induced voltages) are minimized.

[i]Initiating devices such as smoke detectors used for elevator recall, closing dampers, or releasing doors held in the open position that are permitted by the Code *(see9.6.3 of NFPA 101)* to initiate supervisory signals at the fire alarm control unit (FACU) should be tested at the same frequency (annual) as those devices when they are generating an alarm signal. They are not supervisory devices, but they initiate a supervisory signal at the FACU.

[j]Fusible thermal link detectors are commonly used to close fire doors and fire dampers electrically connected to the fire alarm control unit. They are actuated by the presence of external heat, which causes a solder element in the link to fuse, or by an electric thermal device, which, when energized, generates heat within the body of the link, causing the link to fuse and separate.

[k]Note, it is customary for the manufacturer of the smoke detector to test a particular product from an aerosol provider to determine acceptability for use in smoke entry testing of their smoke detector/smoke alarm. Magnets are not acceptable for smoke entry tests.

[l] There are some detectors that use magnets as a manufacturer's calibrated sensitivity test instrument.

[m]For example, it might not be possible to individually test the heat sensor in a thermally enhanced smoke detector.

[n]Manufacturer's published instructions should be consulted to ensure a proper operational test. No suppression gas or agent is expected to be discharged during the test of the solenoid. *See Test Plan of 14.2.10*.

[o]A monitor module installed on an interface device is not considered a supervisory device and therefore not subject to the quarterly testing frequency requirement. Test frequencies for interface devices should be in accordance with the applicable standard. For example, fire pump controller alarms such as phase reversal are required to be tested annually. If a monitor module is installed to identify phase reversal on the fire alarm control unit, it is not necessary to test for phase reversal four times a year.

[p]Chapter 18 would require 15 dB over average ambient sound for public mode spaces. Sometimes the ambient sound levels are different from what the design was based upon. Private operating mode would require 10 dB over average ambient at the location of the device.

[q]Where building, system, or occupancy changes have been observed, the owner should be

notified of the changes. New devices might need to be installed and tested per the initial acceptance testing criteria.

[r]See A.14.4.3.2 and Table 14.4.3.2, Item 24.

Statement of Problem and Substantiation for Public Input

The language being proposed for deletion for line 17 (4) (c) is confusing and appears to be contradictory. There is no test method for non-restorable spot-type heat detectors. Rather, the Periodic Frequency states "See Method" to indicate that, rather than following a periodic frequency of testing, these heat detectors remain in place for 15 years and then are either replaced or a sample is lab tested. If the lab test is successful, the replacement/test cycle is initiated every 5 years thereafter. The committee should review the language regarding testing mechanically and electrically to determine if this language is valid or not.

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Committee Statement

Resolution: FR-5349-NFPA 72-2022

Statement: Item 17(7)(A) - The new sentence is moved from footnote K to the table to make it more visible to the user.

Items 8 and 9, note c - Secondary batteries have become more of an issue for fire alarm systems. NFPA 72, during the last cycle, added requirements for batteries to be listed or component recognized. Chargers used today can offer so much more information, verification, testing data, etc. for the batteries connected to the system. This option allows manufacturers to have their FACUs listed to offer these functions and if a listing should be deemed equivalent to the use of battery testers. This is similar to smoke detector sensitivity testing where a FACU can provide that testing is listed for the purpose.

Items 9 (2) and 9(4), note e and note f - A task group was set up to conduct an extensive, detailed review of each table footnote and determined what could be moved into the testing table itself and what should remain as a table footnote. In accordance with the Manual of Style, mandatory language should reside in the table and not in the footnote.

Item 17(4)(c) - The sentence was revised to clarify the functional testing methods.

Item 18 - The testing of abort switches currently refers to the sequence of operation for development of and/or verification of the system sequence of operation for simple abort function. The test requirement is vague and the sequence of operation should have already been determined prior to acceptance testing. This revision clarifies the testing of an abort switch.

Items 4(6), 10, 17(11) - Manual of style does not permit requirements in tables.

Public Input No. 326-NFPA 72-2022 [Section No. 14.4.3.2]

14.4.3.2*

Systems and associated equipment shall be tested according to Table 14.4.3.2.

Table 14.4.3.2 Testing

	Component	Initial Acceptance	Periodic Frequency	Method
1. All equipment	X			See Table 14.3.1.
2. Control unit				
	(1) Functions	X	Annually	Verify correct receipt of alarm, supervisory, and trouble signals (inputs); operation of evacuation signals and auxiliary functions (outputs); circuit supervision, including detection of open circuits and ground faults; and power supply supervision for detection of loss of ac power and disconnection of secondary batteries.
	(2) Fuses	X	Annually	Verify rating and supervision.
	(3) Interfaced equipment	X	Annually	Verify integrity of single or multiple circuits providing interface between two or more control units. Test interfaced equipment connections by operating or simulating operation of the equipment being supervised. Verify signals required to be transmitted at the control unit.
	(4) Lamps and LEDs	X	Annually	Illuminate lamps and LEDs.
	(5) Primary (main) power supply	X	Annually	Disconnect all secondary (standby) power and test under maximum load, including all alarm appliances requiring simultaneous operation. Reconnect all secondary (standby) power at end of test. Test redundant power supplies separately.

-	Component	Initial Acceptance	Periodic Frequency	Method
3.	Alarm control unit trouble signals	-	-	-
-	(1) Audible and visual	X	Annually	Verify operation of control unit trouble signals. Verify ring-back feature for systems using a trouble-silencing switch that requires resetting.
-	(2) Disconnect switches	X	Annually	If control unit has disconnect or isolating switches, verify performance of intended function of each switch. Verify receipt of trouble signal when a supervised function is disconnected.
-	(3) Ground-fault monitoring circuit	X	Annually	If the system has a ground detection feature, verify the occurrence of ground-fault indication whenever any installation conductor is grounded.
-	(4) Transmission of signals to off-premises location	X	Annually	Actuate an initiating device and verify receipt of alarm signal at the off-premises location.
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
4. Supervising station alarm systems — transmission equipment	-	-	-	
-	(1) All equipment	X	Annually	[a]Test all system functions and features in accordance with the equipment manufacturer's published instructions for correct operation in conformance with the applicable sections of Chapter 26.
			-	-
			-	-
-	(2) Digital alarm communicator transmitter (DACT)	X	Annually	Except for DACTs installed prior to adoption of the 2013 edition of NFPA 72 that are connected to a telephone line

-	Component	Initial Acceptance	Periodic Frequency	Method
				(number) that is also supervised for adverse conditions by a derived local channel, ensure connection of the DACT to two separate means of transmission.
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(3) Digital alarm radio transmitter (DART)	X	Annually	Disconnect the primary telephone line. Verify transmission of a trouble signal to the supervising station by the DART occurs within 4 minutes.
-	(4) McCulloh transmitter	X	Annually	Actuate initiating device. Verify production of not less than three complete rounds of not less than three signal impulses each by the McCulloh transmitter.

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			(2) Ground	
			-	-
			-	-
			-	-
			-	-
			(2) Ground	
			-	-
-	(5) Radio alarm transmitter (RAT)	X	Annually	Cause a fault between elements of the transmitting equipment. Verify indication of the fault at the protected premises, or transmission of trouble signal to the supervising station.
-	(6) Performance-based technologies	X	Annually	Perform tests to ensure the monitoring of integrity of the transmission technology and technology path. Where shared communications equipment is used as permitted by 26.6.3.12, provided secondary (standby)

-	Component	Initial Acceptance	Periodic Frequency	Method
				power sources shall be tested in accordance with Table 14.4.3.2, item 7, 8, or 9, as applicable.

-	Component	Initial Acceptance	Periodic Frequency	Method
5.	Emergency communications equipment	-	-	-
-	(1) Amplifier/tone generators	X	Annually	Verify correct switching and operation of backup equipment.
-	(2) Call-in signal silence	X	Annually	Operate/function and verify receipt of correct visual and audible signals at control unit.
-	(3) Off-hook indicator (ring down)	X	Annually	Install phone set or remove phone from hook and verify receipt of signal at control unit.
-	(4) Phone jacks	X	Annually	Visually inspect phone jack and initiate communications path through jack.
-	(5) Phone set	X	Annually	Actuate each phone set and verify correct operation.
-	(6) System performance	X	Annually	Operate the system with a minimum of any five handsets simultaneously. Verify voice quality and clarity.
6.	Engine-driven generator	X	Monthly	If an engine-driven generator dedicated to the system is used as a required power source, verify operation of the generator and transfer switch in accordance with NFPA 110 by the building owner.
7.	Emergency power supply system/stored-emergency power supply system (EPSS/SEPSS)	X	Annually	If an EPSS/SEPSS dedicated to the system is used as a required power source, verify by the building owner operation of the

-	Component	Initial Acceptance	Periodic Frequency	Method
			EPSS/SEPSS in accordance with NFPA 111.	
8.	Secondary (standby) power supply[c]	X	Annually	Disconnect all primary (main) power supplies and verify the occurrence of required trouble indication for loss of primary power. Measure or verify the system's standby and alarm current demand using the equipment manufacturer's data and verify the battery's rated capacity exceeds the system's power demand, including the safety margin. Operate general alarm systems a minimum of 5 minutes and emergency voice communications systems for a minimum of 15 minutes. Reconnect primary (main) power supply at end of test. A listed control unit's charger/power supply that is arranged for the purpose of verifying battery capacity shall be approved for equivalency with this section .

-	Component	Initial Acceptance	Periodic Frequency	Method	
					Prior t conduc any ba testing by the conduc the tes all sys softwa stored volatile memo protec from lo
9.	VRLA battery and charger[d]	-	-		- A listed unit's charge supply arrange the pur verifyin battery capacit charge voltage approv equival with th section
	(1) Temperature test	X	Semiannually	Upon initially opening the cabinet door, measure the internal ambient temperature of the enclosure. Measure the temperature of each battery cell/unit at the negative terminal with an infrared thermometer. Replace any battery cell/unit if its temperature is greater than 18°F (10°C) above the measured internal ambient	

-	Component	Initial Acceptance	Periodic Frequency	Method	
				temperature of the enclosure.	
-	(2) Charger test[e]	X	Semiannually	With the battery fully charged and connected to the charger, measure the voltage across the battery with a voltmeter. Verify the voltage is within the battery/alarm equipment manufacturer's recommendations. If the voltage is outside of the specified limits, either adjust the charger to within limits or replace the charger.	
-	(3) Cell/Unit voltage test	X	Semiannually	With the battery fully charged and connected to the charger, measure the voltage of each cell/unit with a voltmeter. Replace the battery when any cell/unit measures a voltage less than 13.26 volts.	
-	(4) Ohmic test[f]	X	N/A	When the battery is installed, establish a baseline ohmic value for each battery cell/unit or where available use baseline ohmic values provided by the battery or test equipment manufacturer. In either case record the base line ohmic value on each battery cell/unit.	
		-	-	-	Semi

-	Component	Initial Acceptance	Periodic Frequency	Method	
-	(5) Replacement/Load test[g]	-		3 years	Replac battery conduc test of battery capaci test th based manuf specifi for a d rate of or mor applyi curren indicat the se hourly discha contin until th termin voltag

-	Component	Initial Acceptance	Periodic Frequency	Method	
					decrea the en voltag specifi the manuf Recor test du and ca the ba capaci includi adjust ambie tempe Repla battery capaci less th equal or at th sched interva battery capaci less th
10.	Public emergency alarm reporting system — wired system	X	Daily	Manual tests of the power supply for public reporting circuits shall be made and recorded at least once during each 24-hour period. Such tests shall include the following:	

-	Component	Initial Acceptance	Periodic Frequency	Method

-	Component	Initial Acceptance	Periodic Frequency	Method
			- -	
			- -	
			- -	
11.	Remote annunciators	X	Annually	Verify the correct operation and identification of annunciators. If provided, verify the correct operation of annunciator under a fault condition.
12. Reserved		-	-	-
13. Reserved		-	-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
14.	Wireless communications	X	Annually	Test per the manufacturer's published instructions.
15.	Conductors — metallic	-	-	-
-	(1) Stray voltage	X	N/A	Test all installation conductors with a volt/ohmmeter to verify that there are no stray (unwanted) voltages between installation conductors or between installation conductors and ground. Verify the maximum allowable stray voltage does not exceed 1 volt ac/dc, unless a different threshold is specified in the manufacturer's published instructions for the installed equipment.
-	(2) Ground faults	X	N/A	Test all installation conductors, other than those intentionally and permanently grounded, for isolation from ground per the installed equipment manufacturer's published instructions.
-	(3) Short-circuit faults	X	N/A	Test all installation conductors, other than those intentionally connected together, for conductor-to-conductor isolation per the manufacturer's published instructions for the installed equipment. Also test these same circuits conductor-to-ground.
-	(4) Loop resistance	X	N/A	With each initiating and indicating circuit installation conductor pair short-circuited at the far end, measure and record the resistance of each

-	Component	Initial Acceptance	Periodic Frequency	Method	
				circuit. Verify that the loop resistance does not exceed the limits specified in the manufacturer's published instructions for the installed equipment.	
-	(5) Circuit integrity	X	N/A	For initial and reacceptance testing, confirm the introduction of a fault in any circuit monitored for integrity results in a trouble indication at the fire alarm control unit. Open one connection at not less than 10 percent of the initiating devices, notification appliances and controlled devices on every initiating device circuit, notification appliance circuit, and signaling line circuit. Confirm all circuits perform as indicated in Sections 23.5, 23.6, and 23.7.	
	-	-	N/A	Annually	For pe testing each i device notifica applia circuit, signali circuit correc indicat the co unit. C all circ perfor indicat Sectio 23.6, a 23.7.
16. Nonmetallic pathways	-	-	-		
-	(1) Optical fiber cables	X	N/A	Test the transmission characteristics of optical fibers by the	

-	Component	Initial Acceptance	Periodic Frequency	Method	
				use of an optical power meter or by an optical time domain reflectometer used to measure the relative power loss of the line. Test result data must meet or exceed ANSI/TIA 568.3, *Optical Fiber Cabling and Components Standard*, related to fiber-optic lines and connection/splice losses and the control unit manufacturer's published specifications.	
-	(2) Circuit integrity	X	N/A	For initial and reacceptance testing, confirm the introduction of a fault in any circuit monitored for integrity results in a trouble indication at the fire alarm control unit. Open one connection at not less than 10 percent of the initiating devices, notification appliances, and controlled devices on every initiating device circuit, notification appliance circuit, and signaling line circuit. Confirm all circuits perform as indicated in Sections 23.5, 23.6, and 23.7.	
	-	-	N/A	Annually	For pe testing each i device notifica applia circuit, signali circuit correc indicat the co unit. C all circ perfor

	Component	Initial Acceptance	Periodic Frequency	Method	
					indicat Sectio 23.6, a 23.7.
17.	Initiating devices[i]	-	-	-	
-	(1) Electromechanical releasing device	-	-	-	
-	(a) Nonrestorable-type link	X	Annually	Verify correct operation by removal of the fusible link and operation of the associated device.	
-	(b) Restorable-type link[j]	X	Annually	Verify correct operation by removal of the fusible link and operation of the associated device.	
-	(2) Fire extinguishing system(s) or suppression system(s) alarm switch	X	Annually	Operate the switch mechanically or electrically and verify receipt of signal by the fire alarm control unit.	
-	(3) Fire–gas and other detectors	X	Annually	Test fire–gas detectors and other fire detectors as prescribed by the manufacturer and as necessary for the application.	
-	(4) Heat detectors	-	-	-	
-	(a) Fixed-temperature, rate-of-rise, rate of compensation, restorable line, spot type (excluding pneumatic tube type)	X	Annually (see 14.4.4.5)	Perform heat test with a listed and labeled heat source or in accordance with the manufacturer's published instructions. Assure that the test method for the installed equipment does not damage the nonrestorable fixed-temperature element of a combination rate-of-rise/fixed-temperature element detector.	
-	(b) Fixed-temperature, nonrestorable line type	X	Annually	Do not perform heat test. Test functionality mechanically and electrically. Measure	

		Component	Initial Acceptance	Periodic Frequency	Method
					and record loop resistance. Investigate changes from acceptance test.
		(c) Fixed-temperature, nonrestorable spot type	X	See Method	After 15 years from initial installation, replace all devices or have 2 detectors per 100 laboratory tested. Replace the 2 detectors with new devices. If a failure occurs on any of the detectors removed, remove and test additional detectors to determine either a general problem involving faulty detectors or a localized problem involving 1 or 2 defective detectors.
		(d) Restorable line type, pneumatic tube only	X	Annually	Perform heat tests (where test chambers are in circuit), with a listed and labeled heat source or in accordance with the manufacturer's published instructions of the detector or conduct a test with pressure pump.
		(e) Single- and multiple-station heat alarms	X	Annually	Conduct functional tests according to manufacturer’s published instructions. Do not test nonrestorable heat detectors with heat.

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(5) Manual fire alarm boxes	X	Annually	Operate manual fire alarm boxes per the manufacturer's published instructions. Test both key-operated presignal and general alarm manual fire alarm boxes.
-	(6) Radiant energy fire detectors	X	Semiannually	Test flame detectors and spark/ember detectors in accordance with the manufacturer's published instructions to determine that each detector is operative.
			-	-
			-	-
			-	-
			-	-
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(7) Smoke detectors — functional test	-	-	-
-	(a) In other than one- and two-family dwellings, system detectors	X	Annually	[k]Test smoke detectors in place to ensure smoke entry into the sensing chamber and an alarm response. Use smoke or a listed and labeled product acceptable to the manufacturer or in accordance with their published instructions. Other methods listed in the manufacturer's published instructions that ensure smoke entry from the protected area, through the vents, into the sensing chamber can be used.
-	(b) Single- and multiple-station smoke alarms connected to protected premises systems	X	Annually	Perform a functional test on all single- and multiple-station smoke alarms connected to a protected premises fire alarm system by putting the smoke alarm into an alarm condition.

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(c) System smoke detectors used in one- and two-family dwellings	X	Annually	Conduct functional tests according to manufacturer's published instructions.
-	(d) Air sampling	X	Annually	Test with smoke or a listed and labeled product acceptable to the manufacturer or in accordance with their published instructions. In the absence of an automatic, listed airflow supervision feature, test from the end sampling port or point on each pipe run and verify airflow through all other ports or points.
-	(e) Duct type	X	Annually	In addition to the testing required in Table 14.4.3.2(17)(7)(a) and Table 14.4.3.2(17)(8), test duct smoke detectors that use sampling tubes to ensure that they will properly sample the airstream in the duct using a method acceptable to the manufacturer or in accordance with their published instructions.
-	(f) Projected beam type	X	Annually	Test the detector by introducing smoke, other aerosol, or an optical filter into the beam path.
-	(g) Smoke detector with built-in thermal element	X	Annually	Operate both portions of the detector independently as described for the respective devices.
-	(h) Smoke detectors with control output functions	X	Annually	Verify that the control capability remains operable even if all of the initiating devices connected to the same initiating device circuit or signaling line circuit are in an alarm state.

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(8) Smoke detectors — sensitivity testing	-	-	-
-	In other than one- and two-family dwellings, system detectors	N/A	See 14.4.4.3	lPerform any of the following tests to ensure that each smoke detector is within its listed and marked sensitivity range:
			-	-
			-	-
			-	-
			-	-
			-	-
-	(9) Carbon monoxide detectors/carbon monoxide alarms connected to protected premises systems	-	-	-
-	(a) CO entry test	X	Annually	Test the devices in place to ensure CO entry to the sensing chamber by introduction through the vents, to the sensing chamber of

-	Component	Initial Acceptance	Periodic Frequency	Method
				listed and labeled product acceptable to the manufacturer or in accordance with manufacturer's published instructions
-	(b) Air sampling	X	Annually	Per test methods documented in the manufacturer's published instructions, verify detector alarm response through the end sampling port on each pipe run; verify airflow through all other ports as well.
-	(c) Duct type	X	Annually	Test or inspect air duct detectors to ensure that the device will sample the airstream in accordance with the manufacturer's published instructions.
-	(d) CO detector with control output functions	X	Annually	Within each protected space, verify that the control capability remains operable even if all of the initiating devices connected to the same initiating device circuit or signaling line circuit are in an alarm state.
-	(10) Initiating devices, supervisory	-	-	-
-	(a) Control valve switch	X	Semiannual	Operate valve and verify signal receipt to be within the first two revolutions of the handwheel or within one-fifth of the travel distance, or per the manufacturer's published instructions. Continue to cycle outside stem and yoke valves and verify switch does not reset during full travel of the valve stem.

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(b) High- or low-air pressure switch	X	Annually	Operate switch and verify receipt of signal is obtained where the required pressure is increased or decreased a maximum 10 psi (70 kPa) from the required pressure level or in accordance with manufacturer's published instructions.
-	(c) Steam pressure	X	Annually	Operate switch and verify receipt of signal is obtained before pressure decreases to 110 percent of the minimum operating pressure of the steam-operated equipment.
-	(d) Pressure supervisory devices for other sources	X	Annually	Operate switch and verify receipt of signal is obtained where the required pressure is increased or decreased from the normal operating pressure by an amount specified in approved design documents.
-	(e) Room temperature switch	X	Annually	Operate switch and verify receipt of signal to indicate the decrease in room temperature to 40°F (4.4°C) and its restoration to above 40°F (4.4°C).
-	(f) Water level switch	X	Annually	Operate switch and verify receipt of signal indicating the water level raised or lowered a maximum 3 in. (70 mm) from the required level within a pressure tank, or a maximum 12 in. (300 mm) from the required level of a nonpressure tank. Also verify its restoral to required level.

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(g) Water temperature switch	X	Annually	Operate switch and verify receipt of signal to indicate the decrease in water temperature to 40°F (4.4°C) and its restoration to above 40°F (4.4°C).
-	(11) Mechanical, electrosonic, or pressure-type waterflow device	X	Semiannually	Water shall be flowed through an inspector's test connection indicating the flow of water equal to that from a single sprinkler of the smallest orifice size installed in the system or other listed and approved waterflow switch test methods for wet-pipe systems, or an alarm test bypass connection for dry-pipe, pre-action, or deluge systems in accordance with NFPA 25.
-	(12) Multi-sensor fire detector or multi-criteria fire detector or combination fire detector	X	Annually	1. Test each detector in accordance with the manufacturer's published instructions. Test each of the sensors present within the detector (e.g., smoke/heat/CO, etc.) independently for the specific detection principle, regardless of the configuration status at the time of testing, or individual sensors together if the technology allows individual sensor responses to be verified, or where sensors cannot be tested individually, test the primary sensor.[m]
-		-	-	-
-		-	-	

		Component	Initial Acceptance	Periodic Frequency	Method

		Component	Initial Acceptance	Periodic Frequency	Method
-		(3) Abort switch (special type)	X	Annually	Operate abort switch and verify correct sequence and operation in accordance with authority having jurisdiction. Observe sequencing as specified on as-built drawings or in system owner's manual.
-		(4) Cross-zone detection circuit	X	Annually	Operate one sensor or detector on each zone. Verify occurrence of correct sequence with operation of first zone and then with operation of second zone.
-		(5) Matrix-type circuit	X	Annually	Operate all sensors in system. Verify development of correct matrix with each sensor operated.
-		(6) Release solenoid circuit[n]	X	Annually	Verify operation of solenoid.
-		(7) Squibb release circuit	X	Annually	Use AGI flashbulb or other test light approved by the manufacturer. Verify operation of flashbulb or light.
-		(8) Verified, sequential, or counting zone circuit	X	Annually	Operate required sensors at a minimum of four locations in circuit. Verify correct sequence with both the first and second detector in alarm.
-		(9) All above devices or circuits or combinations thereof	X	Annually	Verify supervision of circuits by creating an open circuit.
19.	Combination systems	-	-	-	
-		(1) Fire extinguisher electronic monitoring device/system	X	Annually	Test communication between the device connecting the fire extinguisher electronic monitoring device/system and the fire alarm control unit to ensure proper

		Component	Initial Acceptance	Periodic Frequency	Method
					signals are received at the fire alarm control unit and remote annunciator(s) if applicable.
		(2) Carbon monoxide device/system	X	Annually	Test communication between the device connecting the carbon monoxide device/system and the fire alarm control unit to ensure proper signals are received at the fire alarm control unit and remote annunciator(s) if applicable.
20.	Interface equipment[o]	X	See 14.4.4.4	Test interface equipment connections by operating or simulating the equipment being supervised. Verify signals required to be transmitted are received at the control unit. Test frequency for interface equipment is the same as the frequency required by the applicable NFPA standard(s) for the equipment being supervised.	
21.	Guard's tour equipment	X	Annually	Test the device in accordance with the manufacturer's published instructions.	
22.	Alarm notification appliances	-	-	-	
		(1) Audible[p]	X	N/A	For initial and reacceptance testing, measure sound pressure levels for alert tone signals and

-	Component	Initial Acceptance	Periodic Frequency	Method	
				evacuation signal tones with a sound level meter meeting ANSI/ASAS1.4/Part 1, *Electroacoustics — Sound Level Meters — Part 1: Specifications,* Type 2 requirements. Measure sound pressure levels to determine if they are in compliance with Chapter 18 and the required performance, as documented per 7.3.4. Set the sound level meter in accordance with ANSI/ASA S3.41, *Audible Emergency Evacuation (E2) and Evacuation Signals with Relocation Instructions (ESRI),* using the time-weighted characteristic F (FAST).	
	-	-	N/A	Annually	[q]For p testing the op of the notifica applia
-	(2) Audible textual notification appliances (loudspeakers and other appliances to convey voice messages)	X	N/A	For initial and reacceptance testing, measure sound pressure levels for signals with a sound level meter meeting ANSI/ASAS1.4/Part 1, *Electroacoustics — Sound Level Meters — Part 1: Specifications,* Type 2 requirements. Measure sound pressure levels throughout the protected area to determine if they are in compliance with Chapter 18 and the required performance, as documented per 7.3.4. Set the sound	

		Component	Initial Acceptance	Periodic Frequency	Method	
					level meter in accordance with ANSI/ASA S3.41, *Audible Emergency Evacuation (E2) and Evacuation Signals with Relocation Instructions (ESRI),* using the time-weighted characteristic F (FAST).	
				N/A	Annually	[q]For p testing the op of the notifica applia
		(3) Visual	X	N/A	Perform initial and reacceptance testing in accordance with the manufacturer's published instructions. Verify appliance locations to be per approved layout and confirm that no floor plan changes affect the approved layout. Verify the candela rating or method of candela control marking on each visual appliance and rating when reported by the FACU agrees with the approved drawings. Confirm that each appliance flashes.	
				N/A	Annually	For pe testing that ea applia flashes
23.	Exit marking audible notification appliance	X	Annually	Perform tests in accordance with manufacturer's published		

-	Component	Initial Acceptance	Periodic Frequency	Method
			instructions.	
24.	Emergency control functions[r]	X	Annually	For initial, reacceptance, and periodic testing, verify emergency control function interface device activation. Where an emergency control function interface device is disabled or disconnected during initiating device testing, verify that the disabled or disconnected emergency control function interface device has been properly restored, including electromagnetic devices used for door releasing services as part of a fire alarm system.
25.	Two-way emergency communications systems	X	Annually	Use the manufacturer's published instructions and the as-built drawings provided by the system supplier to verify correct operation after the initial testing phase has been performed by the supplier or by the supplier's designated representative.

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
			-	-
			-	-
			-	-
26.	Special procedures	-	-	-	
-		(1) Alarm verification	X	Annually	Verify time delay and alarm response for smoke detector

	Component	Initial Acceptance	Periodic Frequency	Method
				circuits identified as having alarm verification.
	(2) Multiplex systems	X	Annually	Verify communications between sending and receiving units under both primary and secondary power.
27. Supervising station alarm systems — receiving equipment				
	(1) All equipment	X	Monthly	Perform tests on all system functions and features in accordance with the

-	Component	Initial Acceptance	Periodic Frequency	Method
				equipment manufacturer's published instructions for correct operation in conformance with the applicable sections of Chapter 26.
			-	-
			-	-
-	(2) Digital alarm communicator receiver (DACR)	X	Monthly	Disconnect each transmission means in turn from the DACR, and verify audible and visual annunciation of a trouble signal in the supervising station.
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(3) Digital alarm radio receiver (DARR)	X	Monthly	Cause the following conditions of all DARRs on all subsidiary and repeater station receiving equipment. Verify receipt at the supervising station of correct signals for each of the following conditions:
			-	-
			-	-
			-	-
			-	-
			-	-
-	(4) McCulloh systems	X	Monthly	Test and record the current on each circuit at each supervising and subsidiary station under the following conditions:
			-	-
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
			-	-
			-	-
-	(5) Radio alarm supervising station receiver (RASSR) and radio alarm repeater station receiver (RARSR)	X	Monthly	Cause each of the following conditions at each of the supervising or subsidiary stations and all repeater station radio transmitting and receiving equipment; verify receipt of correct signals at the supervising station:
			-	-
			-	-
			-	-

-	-	Component	Initial Acceptance	Periodic Frequency	Method
-		(6) Private microwave radio systems	X	Monthly	Cause each of the following conditions at each of the supervising or subsidiary stations and all repeater station radio transmitting and receiving equipment; verify receipt of correct signals at the supervising station:
				-	-
				-	-
				-	-
				-	-
-		(7) Performance-based technologies	X	Monthly	Perform tests to ensure the monitoring of integrity of the transmission technology and technology path. Where a single communications path is used, disconnect the communication path. Verify that failure of the path is annunciated at the supervising station within 60 minutes of the failure (within 5 minutes for communication equipment installed prior to adoption of the 2013 edition of *NFPA 72*). Restore the communication path. Where multiple communication paths are used, disconnect both communication paths and confirm that failure of the path is annunciated at the supervising station within not more than

-		Component	Initial Acceptance	Periodic Frequency	Method
					6 hours of the failure (within 24 hours for communication equipment installed prior to adoption of the 2013 edition of *NFPA 72*). Restore both communication paths.
28.	Public emergency alarm reporting system transmission equipment	-	-	-	
	-	(1) Publicly accessible alarm box	X	Semiannually	Actuate publicly accessible initiating device(s) and verify receipt of not less than three complete rounds of signal impulses. Perform this test under normal circuit conditions. If the device is equipped for open circuit operation (ground return), test it in this condition as one of the semiannual tests.
	-	(2) Auxiliary box	X	Annually	Test each initiating circuit of the auxiliary box by actuation of a protected premises initiating device connected to that circuit. Verify receipt of not less than three complete rounds of signal impulses.
	-	(3) Master box	-	-	-
	-	(a) Manual operation	X	Semiannually	Perform the tests prescribed for 28(1).
	-	(b) Auxiliary operation	X	Annually	Perform the tests prescribed for 28(2).
29.	Low-power radio (wireless systems)	X	N/A	The following procedures describe additional acceptance and reacceptance test methods to verify wireless protection	

-	Component	Initial Acceptance	Periodic Frequency	Method
			system operation:	
			-	-
			-	-
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
30. Mass notification systems	-	-	-	
-	(1) Functions	X	Annually	At a minimum, test control unit to verify correct receipt of alarm, supervisory, and trouble signals (inputs); operation of evacuation signals and auxiliary functions (outputs); circuit supervision, including detection of open circuits and ground faults; and power supply supervision for detection of loss of ac power and disconnection of secondary batteries.
-	(2) Fuses	X	Annually	Verify the rating and supervision.

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(3) Interfaced equipment	X	Annually	Verify integrity of single or multiple circuits providing interface between two or more control units. Test interfaced equipment connections by operating or simulating operation of the equipment being supervised. Verify signals required to be transmitted at the control unit.
-	(4) Lamps and LEDs	X	Annually	Illuminate lamps and LEDs.
-	(5) Primary (main) power supply	X	Annually	Disconnect all secondary (standby) power and test under maximum load, including all alarm appliances requiring simultaneous operation. Reconnect all secondary (standby) power at end of test. For redundant power supplies, test each separately.
-	(6) Audible textual notification appliances (loudspeakers and other appliances to convey voice messages)	X	Annually	Measure sound pressure level with a sound level meter meeting ANSI/ASAS1.4/Part 1, *Electroacoustics — Sound Level Meters — Part 1: Specifications,* Type 2 requirements. Measure and record levels throughout protected area. Set the sound level meter in accordance with ANSI/ASA S3.41, *Audible Emergency Evacuation (E2) and Evacuation Signals with Relocation Instructions (ESRI),* using the time-weighted characteristic F (FAST). Record the maximum output

-	Component	Initial Acceptance	Periodic Frequency	Method
				when the audible emergency evacuation signal is on.
			-	-
-	(7) Visual	X	Annually	Perform test in accordance with manufacturer's published instructions. Verify appliance locations to be per approved layout and confirm that no floor plan changes affect the approved layout. Verify the candela rating or method of candela control marking on each visual appliance and rating when reported by the FACU agrees with the approved drawings. Confirm that each appliance flashes.
-	(8) Control unit functions and no diagnostic failures are indicated	X	Annually	Review event log file and verify that the correct events were logged. Review system diagnostic log file; correct deficiencies noted in file. Delete unneeded log files. Delete unneeded error files. Verify that sufficient free disk space is available. Verify unobstructed flow of cooling air is available. Change/clean filters, cooling fans, and intake vents.
-	(9) Control unit reset	X	Annually	Power down the central control unit computer and restart it.

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(10) Control unit security	X	Annually	If remote control software is loaded onto the system, verify that it is disabled to prevent unauthorized system access.
-	(11) Audible/visual functional test	X	Annually	Send out an alert to a diverse set of predesignated receiving devices and confirm receipt. Include at least one of each type of receiving device.
-	(12) Software backup	X	Annually	Make full system software backup. Rotate backups based on accepted practice at site.
-	(13) Secondary power test	X	Annually	Disconnect ac power. Verify the ac power failure alarm status on central control unit. With ac power disconnected, verify battery voltage under load.
-	(14) Wireless signals	X	Annually	Check forward/reflected radio power is within specifications.
-	(15) Antenna	X	Annually	Check forward/reflected radio power is within specifications. Verify solid electrical connections with no observable corrosion.
-	(16) Transceivers	X	Annually	Verify proper operation and mounting is not compromised.

[a]Some transmission equipment (such as, but not limited to, cable modems, fiber-optic interface nodes, and VoIP interfaces) are typically powered by the building's electrical system using a secondary (standby) power supply that does not meet the requirements of this Code. This is intended to ensure that the testing authority verifies full secondary (standby) power as required by Chapter 10. Additionally, refer to Table 14.4.3.2, items 7 through 9, for secondary (standby) power supply testing.

[b]The automatic transmission of the check-in (handshake) signal can take up to 60 minutes to occur.

[c]See Table 14.4.3.2, Item 4(1) for the testing of transmission equipment.

[d]The battery tests in Table 14.4.3.2, Item 9, are based on VRLA batteries and it is the intent that the tests specified in (1) through (4) be performed in order. FACU automated load testing of VRLA batteries in accordance with Table 14.4.3.2, Item 9(5), with record of ambient temperature is an acceptable alternative to prescriptive manual methods using test equipment. For other secondary battery types, refer to the battery manufacturer's published instructions or IEEE 450, *Recommended Practice for Maintenance, Testing, and Replacement of Vented Lead-Acid Batteries for Stationary Applications*, for vented lead-acid batteries, and IEEE 1106, *Recommended Practice for Installation, Maintenance, Testing, and Replacement of Vented Nickel-Cadmium Batteries for Stationary Applications*, for nickel-cadmium batteries.

[e]If the charger is adjustable, adjust the output voltage to 2.265 volts per cell ±0.015 volts at 77°F (25°C) or as specified by the alarm equipment manufacturer.

[f]See A.14.4.3.2 Item 9(4). A load test per Item 9(5) is permitted in lieu of an ohmic test.

[g]See A.14.4.3.2 Item 9(5).

[h]The voltmeter sensitivity has been changed from 1000 ohms per volt to 100 ohms per volt so that the false ground readings (caused by induced voltages) are minimized.

[i]Initiating devices such as smoke detectors used for elevator recall, closing dampers, or releasing doors held in the open position that are permitted by the Code *(see9.6.3 of NFPA 101)* to initiate supervisory signals at the fire alarm control unit (FACU) should be tested at the same frequency (annual) as those devices when they are generating an alarm signal. They are not supervisory devices, but they initiate a supervisory signal at the FACU.

[j]Fusible thermal link detectors are commonly used to close fire doors and fire dampers electrically connected to the fire alarm control unit. They are actuated by the presence of external heat, which causes a solder element in the link to fuse, or by an electric thermal device, which, when energized, generates heat within the body of the link, causing the link to fuse and separate.

[k]Note, it is customary for the manufacturer of the smoke detector to test a particular product from an aerosol provider to determine acceptability for use in smoke entry testing of their smoke detector/smoke alarm. Magnets are not acceptable for smoke entry tests.

[l] There are some detectors that use magnets as a manufacturer's calibrated sensitivity test instrument.

[m]For example, it might not be possible to individually test the heat sensor in a thermally enhanced smoke detector.

[n]Manufacturer's published instructions should be consulted to ensure a proper operational test. No suppression gas or agent is expected to be discharged during the test of the solenoid. *See Test Plan of 14.2.10*.

[o]A monitor module installed on an interface device is not considered a supervisory device and therefore not subject to the quarterly testing frequency requirement. Test frequencies for interface devices should be in accordance with the applicable standard. For example, fire pump controller alarms such as phase reversal are required to be tested annually. If a monitor module is installed to identify phase reversal on the fire alarm control unit, it is not necessary to test for phase reversal four times a year.

[p]Chapter 18 would require 15 dB over average ambient sound for public mode spaces. Sometimes the ambient sound levels are different from what the design was based upon. Private operating mode would require 10 dB over average ambient at the location of the device.

[q]Where building, system, or occupancy changes have been observed, the owner should be notified of the changes. New devices might need to be installed and tested per the initial acceptance testing criteria.

[r]See A.14.4.3.2 and Table 14.4.3.2, Item 24.

Statement of Problem and Substantiation for Public Input

Secondary batteries have become more of an issue for fire alarm systems. So much so that NFPA 72 last cycle added requirements for batteries to be listed or component recognized. Chargers used today can offer so much more information, verification, testing data, etc. for the batteries connected to the system. An option should be to allow manufacturers to have their FACUs listed to offer these functions and if listed should be deemed equivalent to the use of battery testers. This is similar to smoke detector sensitivity testing where a FACU can provide that testing is listed for the purpose.

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Committee: SIG-TMS

Committee Statement

Resolution: FR-5349-NFPA 72-2022

Statement: Item 17(7)(A) - The new sentence is moved from footnote K to the table to make it more visible to the user.

Items 8 and 9, note c - Secondary batteries have become more of an issue for fire alarm systems. NFPA 72, during the last cycle, added requirements for batteries to be listed or component recognized. Chargers used today can offer so much more information, verification, testing data, etc. for the batteries connected to the system. This option allows manufacturers to have their FACUs listed to offer these functions and if a listing should be deemed equivalent to the use of battery testers. This is similar to smoke detector sensitivity testing where a FACU can provide that testing is listed for the purpose.

Items 9 (2) and 9(4), note e and note f - A task group was set up to conduct an extensive, detailed review of each table footnote and determined what could be moved into the testing table itself and what should remain as a table footnote. In accordance with the Manual of Style, mandatory language should reside in the table and not in the footnote.

Item 17(4)(c) - The sentence was revised to clarify the functional testing methods.

Item 18 - The testing of abort switches currently refers to the sequence of operation for development of and/or verification of the system sequence of operation for simple abort function. The test requirement is vague and the sequence of operation should have already been determined prior to acceptance testing. This revision clarifies the testing of an abort switch.

Items 4(6), 10, 17(11) - Manual of style does not permit requirements in tables.

Public Input No. 368-NFPA 72-2022 [Section No. 14.4.3.2]

14.4.3.2*

Systems and associated equipment shall be tested according to Table 14.4.3.2.

Table 14.4.3.2 Testing

	Component	Initial Acceptance	Periodic Frequency	Method
1. All equipment	X			See Table 14.3.1.
2. Control unit				
	(1) Functions	X	Annually	Verify correct receipt of alarm, supervisory, and trouble signals (inputs); operation of evacuation signals and auxiliary functions (outputs); circuit supervision, including detection of open circuits and ground faults; and power supply supervision for detection of loss of ac power and disconnection of secondary batteries.
	(2) Fuses	X	Annually	Verify rating and supervision.
	(3) Interfaced equipment	X	Annually	Verify integrity of single or multiple circuits providing interface between two or more control units. Test interfaced equipment connections by operating or simulating operation of the equipment being supervised. Verify signals required to be transmitted at the control unit.
	(4) Lamps and LEDs	X	Annually	Illuminate lamps and LEDs.
	(5) Primary (main) power supply	X	Annually	Disconnect all secondary (standby) power and test under maximum load, including all alarm appliances requiring simultaneous operation. Reconnect all secondary (standby) power at end of test. Test redundant power supplies separately.

-	Component	Initial Acceptance	Periodic Frequency	Method
3.	Alarm control unit trouble signals	-	-	-
-	(1) Audible and visual	X	Annually	Verify operation of control unit trouble signals. Verify ring-back feature for systems using a trouble-silencing switch that requires resetting.
-	(2) Disconnect switches	X	Annually	If control unit has disconnect or isolating switches, verify performance of intended function of each switch. Verify receipt of trouble signal when a supervised function is disconnected.
-	(3) Ground-fault monitoring circuit	X	Annually	If the system has a ground detection feature, verify the occurrence of ground-fault indication whenever any installation conductor is grounded.
-	(4) Transmission of signals to off-premises location	X	Annually	Actuate an initiating device and verify receipt of alarm signal at the off-premises location.
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
4. Supervising station alarm systems — transmission equipment	-	-	-	
-	(1) All equipment	X	Annually	[a]Test all system functions and features in accordance with the equipment manufacturer's published instructions for correct operation in conformance with the applicable sections of Chapter 26.
			-	-
			-	-
-	(2) Digital alarm communicator transmitter (DACT)	X	Annually	Except for DACTs installed prior to adoption of the 2013 edition of NFPA 72 that are connected to a telephone line

-	Component	Initial Acceptance	Periodic Frequency	Method
				(number) that is also supervised for adverse conditions by a derived local channel, ensure connection of the DACT to two separate means of transmission.
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(3) Digital alarm radio transmitter (DART)	X	Annually	Disconnect the primary telephone line. Verify transmission of a trouble signal to the supervising station by the DART occurs within 4 minutes.
-	(4) McCulloh transmitter	X	Annually	Actuate initiating device. Verify production of not less than three complete rounds of not less than three signal impulses each by the McCulloh transmitter.

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			(2) Ground	
			-	-
			-	-
			-	-
			-	-
			(2) Ground	
			-	-
-	(5) Radio alarm transmitter (RAT)	X	Annually	Cause a fault between elements of the transmitting equipment. Verify indication of the fault at the protected premises, or transmission of trouble signal to the supervising station.
-	(6) Performance-based technologies	X	Annually	Perform tests to ensure the monitoring of integrity of the transmission technology and technology path. Where shared communications equipment is used as permitted by 26.6.3.12, provided secondary (standby)

-	Component	Initial Acceptance	Periodic Frequency	Method
				power sources shall be tested in accordance with Table 14.4.3.2, item 7, 8, or 9, as applicable.

-	Component	Initial Acceptance	Periodic Frequency	Method
5.	Emergency communications equipment	-	-	-
-	(1) Amplifier/tone generators	X	Annually	Verify correct switching and operation of backup equipment.
-	(2) Call-in signal silence	X	Annually	Operate/function and verify receipt of correct visual and audible signals at control unit.
-	(3) Off-hook indicator (ring down)	X	Annually	Install phone set or remove phone from hook and verify receipt of signal at control unit.
-	(4) Phone jacks	X	Annually	Visually inspect phone jack and initiate communications path through jack.
-	(5) Phone set	X	Annually	Actuate each phone set and verify correct operation.
-	(6) System performance	X	Annually	Operate the system with a minimum of any five handsets simultaneously. Verify voice quality and clarity.
6.	Engine-driven generator	X	Monthly	If an engine-driven generator dedicated to the system is used as a required power source, verify operation of the generator and transfer switch in accordance with NFPA 110 by the building owner.
7.	Emergency power supply system/stored-emergency power supply system (EPSS/SEPSS)	X	Annually	If an EPSS/SEPSS dedicated to the system is used as a required power source, verify by the building owner operation of the

-	Component	Initial Acceptance	Periodic Frequency	Method	
			EPSS/SEPSS in accordance with NFPA 111.		
8.	Secondary (standby) power supply[c]	X	Annually	Disconnect all primary (main) power supplies and verify the occurrence of required trouble indication for loss of primary power. Measure or verify the system's standby and alarm current demand using the equipment manufacturer's data and verify the battery's rated capacity exceeds the system's power demand, including the safety margin. Operate general alarm systems a minimum of 5 minutes and emergency voice communications systems for a minimum of 15 minutes. Reconnect primary (main) power supply at end of test.	
9.	VRLA battery and charger[d]	-	-		Prior t conduc any ba testing by the conduc test, th system softwa stored volatile memo protec loss.

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(1) Temperature test	X	Semiannually	Upon initially opening the cabinet door, measure the internal ambient temperature of the enclosure. Measure the temperature of each battery cell/unit at the negative terminal with an infrared thermometer. Replace any battery cell/unit if its temperature is greater than 18°F (10°C) above the measured internal ambient temperature of the enclosure.
-	(2) Charger test[e]	X	Semiannually	With the battery fully charged and connected to the charger, measure the voltage across the battery with a voltmeter. Verify the voltage is within the battery/alarm equipment manufacturer's recommendations. If the voltage is outside of the specified limits, either adjust the charger to within limits or replace the charger.
-	(3) Cell/Unit voltage test	X	Semiannually	With the battery fully charged and connected to the charger, measure the voltage of each cell/unit with a voltmeter. Replace the battery when any cell/unit measures a voltage less than 13.26 volts.
-	(4) Ohmic test[f]	X	N/A	When the battery is installed, establish a baseline ohmic value for each battery cell/unit or where available use baseline ohmic values provided by the battery or test equipment

-	Component	Initial Acceptance	Periodic Frequency	Method	
				manufacturer. In either case record the base line ohmic value on each battery cell/unit.	
		-	-	-	Semia
-	(5) Replacement/Load test[g]	-		3 years	Replac battery condu test of battery capaci test th based

-	Component	Initial Acceptance	Periodic Frequency	Method	
					manuf specifi for a d rate of or mor applyi curren indicat the se hourly discha contin until th termin voltag decrea the en voltag specifi the manuf Recor test du and ca the ba capaci includi adjust ambie tempe Repla battery capaci less th equal or at th sched interva battery capaci less th
10.	Public emergency alarm reporting system — wired system	X	Daily	Manual tests of the power supply for public reporting circuits shall be made and recorded at least once during each 24-hour period. Such tests shall include the following: - -	

-	Component	Initial Acceptance	Periodic Frequency	Method

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
11.	Remote annunciators	X	Annually	Verify the correct operation and identification of annunciators. If provided, verify the correct operation of annunciator under a fault condition.
12.	Reserved	-	-	-
13.	Reserved	-	-	-
14.	Wireless communications	X	Annually	Test per the manufacturer's published instructions.
15.	Conductors — metallic	-	-	-
-	(1) Stray voltage	X	N/A	Test all installation conductors with a volt/ohmmeter to verify that there are no stray (unwanted) voltages between installation conductors or between installation conductors and ground. Verify the maximum allowable stray voltage does not exceed 1 volt ac/dc, unless a different threshold is specified in the manufacturer's published instructions for the installed equipment.
-	(2) Ground faults	X	N/A	Test all installation conductors, other than those intentionally and permanently grounded, for isolation from ground per the installed equipment manufacturer's published instructions.
-	(3) Short-circuit faults	X	N/A	Test all installation conductors, other than those intentionally connected together, for conductor-to-

-	Component	Initial Acceptance	Periodic Frequency	Method	
				conductor isolation per the manufacturer's published instructions for the installed equipment. Also test these same circuits conductor-to-ground.	
-	(4) Loop resistance	X	N/A	With each initiating and indicating circuit installation conductor pair short-circuited at the far end, measure and record the resistance of each circuit. Verify that the loop resistance does not exceed the limits specified in the manufacturer's published instructions for the installed equipment.	
-	(5) Circuit integrity	X	N/A	For initial and reacceptance testing, confirm the introduction of a fault in any circuit monitored for integrity results in a trouble indication at the fire alarm control unit. Open one connection at not less than 10 percent of the initiating devices, notification appliances and controlled devices on every initiating device circuit, notification appliance circuit, and signaling line circuit. Confirm all circuits perform as indicated in Sections 23.5, 23.6, and 23.7.	
	-	-	N/A	Annually	For pe testing each i device notifica applia circuit, signali circuit correc

-	Component	Initial Acceptance	Periodic Frequency	Method	
					indicat the co unit. C all circ perfor indicat Sectio 23.6, a 23.7.
16. Nonmetallic pathways	-	-	-		
-	(1) Optical fiber cables	X	N/A	Test the transmission characteristics of optical fibers by the use of an optical power meter or by an optical time domain reflectometer used to measure the relative power loss of the line. Test result data must meet or exceed ANSI/TIA 568.3, *Optical Fiber Cabling and Components Standard*, related to fiber-optic lines and connection/splice losses and the control unit manufacturer's published specifications.	
-	(2) Circuit integrity	X	N/A	For initial and reacceptance testing, confirm the introduction of a fault in any circuit monitored for integrity results in a trouble indication at the fire alarm control unit. Open one connection at not less than 10 percent of the initiating devices, notification appliances, and controlled devices on every initiating device circuit, notification appliance circuit, and signaling line circuit. Confirm all circuits perform as indicated in Sections 23.5, 23.6, and 23.7.	

		Component	Initial Acceptance	Periodic Frequency	Method	
				N/A	Annually	For pe testing each i device notifica applia circuit, signali circuit correc indicat the co unit. C all circ perfor indicat Sectio 23.6, a 23.7.
17.	Initiating devices[i]					
		(1) Electromechanical releasing device				
		(a) Nonrestorable-type link	X	Annually	Verify correct operation by removal of the fusible link and operation of the associated device.	
		(b) Restorable-type link[j]	X	Annually	Verify correct operation by removal of the fusible link and operation of the associated device.	
		(2) Fire extinguishing system(s) or suppression system(s) alarm switch	X	Annually	Operate the switch mechanically or electrically and verify receipt of signal by the fire alarm control unit.	
		(3) Fire–gas and other detectors	X	Annually	Test fire–gas detectors and other fire detectors as prescribed by the manufacturer and as necessary for the application.	
		(4) Heat detectors				
		(a) Fixed-temperature, rate-of-rise, rate of compensation, restorable line, spot type	X	Annually (see 14.4.4.5)	Perform heat test with a listed and labeled heat source or in accordance with the manufacturer's published instructions.	

		Component	Initial Acceptance	Periodic Frequency	Method
		(excluding pneumatic tube type)			Assure that the test method for the installed equipment does not damage the nonrestorable fixed-temperature element of a combination rate-of-rise/fixed-temperature element detector.
		(b) Fixed-temperature, nonrestorable line type	X	Annually	Do not perform heat test. Test functionality mechanically and electrically. Measure and record loop resistance. Investigate changes from acceptance test.
		(c) Fixed-temperature, nonrestorable spot type	X	See Method	After 15 years from initial installation, replace all devices or have 2 detectors per 100 laboratory tested. Replace the 2 detectors with new devices. If a failure occurs on any of the detectors removed, remove and test additional detectors to determine either a general problem involving faulty detectors or a localized problem involving 1 or 2 defective detectors.
		(d) Restorable line type, pneumatic tube only	X	Annually	Perform heat tests (where test chambers are in circuit), with a listed and labeled heat source or in accordance with the

-	Component	Initial Acceptance	Periodic Frequency	Method
				manufacturer's published instructions of the detector or conduct a test with pressure pump.
-	(e) Single- and multiple-station heat alarms	X	Annually	Conduct functional tests according to manufacturer's published instructions. Do not test nonrestorable heat detectors with heat.
-	(5) Manual fire alarm boxes	X	Annually	Operate manual fire alarm boxes per the manufacturer's published instructions. Test both key-operated presignal and general alarm manual fire alarm boxes.
-	(6) Radiant energy fire detectors	X	Semiannually	Test flame detectors and spark/ember detectors in accordance with the manufacturer's published instructions to determine that each detector is operative.
			-	-
			-	-
			-	-
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
-	(7) Smoke detectors — functional test	-	-	-
-	(a) In other than one- and two-family dwellings, system detectors	X	Annually	[k]Test smoke detectors in place to ensure smoke entry into the sensing chamber and an alarm response. Use smoke or a listed and labeled product acceptable to the manufacturer or in accordance with their published instructions. Other methods listed in the manufacturer's published instructions that ensure smoke entry from the protected area, through the vents, into

-	Component	Initial Acceptance	Periodic Frequency	Method
				the sensing chamber can be used.
-	(b) Single- and multiple-station smoke alarms connected to protected premises systems	X	Annually	Perform a functional test on all single- and multiple-station smoke alarms connected to a protected premises fire alarm system by putting the smoke alarm into an alarm condition.
-	(c) System smoke detectors used in one- and two-family dwellings	X	Annually	Conduct functional tests according to manufacturer's published instructions.
-	(d) Air sampling	X	Annually	Test with smoke or a listed and labeled product acceptable to the manufacturer or in accordance with their published instructions. In the absence of an automatic, listed airflow supervision feature, test from the end sampling port or point on each pipe run and verify airflow through all other ports or points.
-	(e) Duct type	X	Annually	In addition to the testing required in Table 14.4.3.2(17)(7)(a) and Table 14.4.3.2(17)(8), test duct smoke detectors that use sampling tubes to ensure that they will properly sample the airstream in the duct using a method acceptable to the manufacturer or in accordance with their published instructions.
-	(f) Projected beam type	X	Annually	Test the detector by introducing smoke, other aerosol, or an optical filter into the beam path.
-	(g) Smoke detector with built-in thermal element	X	Annually	Operate both portions of the detector independently as described for the

-	Component	Initial Acceptance	Periodic Frequency	Method
				respective devices.
-	(h) Smoke detectors with control output functions	X	Annually	Verify that the control capability remains operable even if all of the initiating devices connected to the same initiating device circuit or signaling line circuit are in an alarm state.
-	(8) Smoke detectors — sensitivity testing	-	-	-
-	In other than one- and two-family dwellings, system detectors	N/A	See 14.4.4.3	lPerform any of the following tests to ensure that each smoke detector is within its listed and marked sensitivity range:
			-	-
			-	-
			-	-
			-	-
			-	-
-	(9) Carbon monoxide detectors/carbon	-	-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
	monoxide alarms connected to protected premises systems			
-	(a) CO entry test	X	Annually	Test the devices in place to ensure CO entry to the sensing chamber by introduction through the vents, to the sensing chamber of listed and labeled product acceptable to the manufacturer or in accordance with manufacturer's published instructions
-	(b) Air sampling	X	Annually	Per test methods documented in the manufacturer's published instructions, verify detector alarm response through the end sampling port on each pipe run; verify airflow through all other ports as well.
-	(c) Duct type	X	Annually	Test or inspect air duct detectors to ensure that the device will sample the airstream in accordance with the manufacturer's published instructions.
-	(d) CO detector with control output functions	X	Annually	Within each protected space, verify that the control capability remains operable even if all of the initiating devices connected to the same initiating device circuit or signaling line circuit are in an alarm state.
-	(10) Initiating devices, supervisory	-	-	-
-	(a) Control valve switch	X	Semiannual	Operate valve and verify signal receipt to be within the first two revolutions of the handwheel or within one-fifth of the travel distance, or per the

-	Component	Initial Acceptance	Periodic Frequency	Method
				manufacturer's published instructions. Continue to cycle outside stem and yoke valves and verify switch does not reset during full travel of the valve stem.
-	(b) High- or low-air pressure switch	X	Annually	Operate switch and verify receipt of signal is obtained where the required pressure is increased or decreased a maximum 10 psi (70 kPa) from the required pressure level or in accordance with manufacturer's published instructions.
-	(c) Steam pressure	X	Annually	Operate switch and verify receipt of signal is obtained before pressure decreases to 110 percent of the minimum operating pressure of the steam-operated equipment.
-	(d) Pressure supervisory devices for other sources	X	Annually	Operate switch and verify receipt of signal is obtained where the required pressure is increased or decreased from the normal operating pressure by an amount specified in approved design documents.
-	(e) Room temperature switch	X	Annually	Operate switch and verify receipt of signal to indicate the decrease in room temperature to 40°F (4.4°C) and its restoration to above 40°F (4.4°C).
-	(f) Water level switch	X	Annually	Operate switch and verify receipt of signal indicating the water level raised or lowered a maximum 3 in. (70 mm) from the required level within a pressure tank, or a

-	Component	Initial Acceptance	Periodic Frequency	Method
				maximum 12 in. (300 mm) from the required level of a nonpressure tank. Also verify its restoral to required level.
-	(g) Water temperature switch	X	Annually	Operate switch and verify receipt of signal to indicate the decrease in water temperature to 40°F (4.4°C) and its restoration to above 40°F (4.4°C).
-	(11) Mechanical, electrosonic, or pressure-type waterflow device	X	Semiannually	Water shall be flowed through an inspector's test connection indicating the flow of water equal to that from a single sprinkler of the smallest orifice size installed in the system or other listed and approved waterflow switch test methods for wet-pipe systems, or an alarm test bypass connection for dry-pipe, pre-action, or deluge systems in accordance with NFPA 25.
-	(12) Multi-sensor fire detector or multi-criteria fire detector or combination fire detector	X	Annually	1. Test each detector in accordance with the manufacturer’s published instructions. Test each of the sensors present within the detector (e.g., smoke/heat/CO, etc.) independently for the specific detection principle, regardless of the configuration status at the time of testing, or individual sensors together if the technology allows individual sensor responses to be verified, or where sensors cannot be tested individually, test the primary sensor.[m]

	Component	Initial Acceptance	Periodic Frequency	Method
18.	Special hazard equipment			
	(1) Abort switch (dead-man type)	X	Annually	Activate suppression system initiating device. Operate and hold abort switch ~~and verify correct sequence and~~

-	Component	Initial Acceptance	Periodic Frequency	Method	
				~~operation.~~	
(2) Abort switch (recycle type)	X	Annually	Activate suppression system initiating device. Operate abort switch and verify ~~development of correct matrix with each sensor operated.~~	-	counto cycle r and suppre systen actuat remair energi Allow counto compl verify actuat energi
(3) Abort switch (special type)	X	Annually	Activate suppression system initiating device. Operate abort switch and verify ~~correct sequence and~~ operation in accordance with ~~authority having jurisdiction. Observe~~ sequencing of operation as specified on as-built drawings ~~or in system owner's manual~~ .		
-	(4) Cross-zone detection circuit	X	Annually	~~Operate~~ Activate one ~~sensor or~~ detector ~~on~~ in each zone. Verify occurrence of correct sequence ~~with~~ of operation ~~of~~ for first zone and then ~~with operation of~~ for second zone.	

-		Component	Initial Acceptance	Periodic Frequency	Method
-		(5) Matrix-type circuit	X	Annually	Operate all sensors in system. Verify development of correct matrix with each sensor operated.
-		(6) Release solenoid circuit[n]	X	Annually	Verify operation of solenoid.
-		(7) Squibb release circuit	X	Annually	Use AGI flashbulb or other test light approved by the manufacturer. Verify operation of flashbulb or light.
-		(8) Verified, sequential, or counting zone circuit	X	Annually	Operate required sensors at a minimum of four locations in circuit. Verify correct sequence of operation with both the first and second detector in alarm.
-		(9) All above devices or circuits or combinations thereof	X	Annually	Verify supervision of circuits by creating an open circuit.
19.	Combination systems	-	-	-	
-		(1) Fire extinguisher electronic monitoring device/system	X	Annually	Test communication between the device connecting the fire extinguisher electronic monitoring device/system and the fire alarm control unit to ensure proper signals are received at the fire alarm control unit and remote annunciator(s) if applicable.
-		(2) Carbon monoxide device/system	X	Annually	Test communication between the device connecting the carbon monoxide device/system and the fire alarm control unit to ensure proper signals are received at the fire alarm control unit and remote annunciator(s) if applicable.

-	Component	Initial Acceptance	Periodic Frequency	Method
20.	Interface equipment[o]	X	See 14.4.4.4	Test interface equipment connections by operating or simulating the equipment being supervised. Verify signals required to be transmitted are received at the control unit. Test frequency for interface equipment is the same as the frequency required by the applicable NFPA standard(s) for the equipment being supervised.
21.	Guard's tour equipment	X	Annually	Test the device in accordance with the manufacturer's published instructions.
22.	Alarm notification appliances	-	-	-	
-	(1) Audible[p]	X	N/A	For initial and reacceptance testing, measure sound pressure levels for alert tone signals and evacuation signal tones with a sound level meter meeting ANSI/ASAS1.4/Part 1, *Electroacoustics — Sound Level Meters — Part 1: Specifications,* Type 2 requirements. Measure sound pressure levels to determine if they are in compliance with Chapter 18 and the required performance, as documented per 7.3.4. Set the sound level meter in

-	Component	Initial Acceptance	Periodic Frequency	Method	
				accordance with ANSI/ASA S3.41, *Audible Emergency Evacuation (E2) and Evacuation Signals with Relocation Instructions (ESRI),* using the time-weighted characteristic F (FAST).	
	-	-	N/A	Annually	[q]For p testing the op of the notifica applia
-	(2) Audible textual notification appliances (loudspeakers and other appliances to convey voice messages)	X	N/A	For initial and reacceptance testing, measure sound pressure levels for signals with a sound level meter meeting ANSI/ASAS1.4/Part 1, *Electroacoustics — Sound Level Meters — Part 1: Specifications,* Type 2 requirements. Measure sound pressure levels throughout the protected area to determine if they are in compliance with Chapter 18 and the required performance, as documented per 7.3.4. Set the sound level meter in accordance with ANSI/ASA S3.41, *Audible Emergency Evacuation (E2) and Evacuation Signals with Relocation Instructions (ESRI),* using the time-weighted characteristic F (FAST).	
			-	-	

		Component	Initial Acceptance	Periodic Frequency	Method	
	-	-	-	N/A	Annually	[q]For p testing the op of the notifica applia
	-	(3) Visual	X	N/A	Perform initial and reacceptance testing in accordance with the manufacturer's published instructions. Verify appliance locations to be per approved layout and confirm that no floor plan changes affect the approved layout. Verify the candela rating or method of candela control marking on each visual appliance and rating when reported by the FACU agrees with the approved drawings. Confirm that each appliance flashes.	
	-	-	-	N/A	Annually	For pe testing that ea applia flashes
23.	Exit marking audible notification appliance	X	Annually	Perform tests in accordance with manufacturer's published instructions.		
24.	Emergency control functions[r]	X	Annually	For initial, reacceptance, and periodic testing, verify emergency control function interface device activation. Where an emergency control function interface device is disabled or disconnected during initiating device testing,		

-	Component	Initial Acceptance	Periodic Frequency	Method
			verify that the disabled or disconnected emergency control function interface device has been properly restored, including electromagnetic devices used for door releasing services as part of a fire alarm system.	
25.	Two-way emergency communications systems	X	Annually	Use the manufacturer's published instructions and the as-built drawings provided by the system supplier to verify correct operation after the initial testing phase has been performed by the supplier or by the supplier's designated representative.

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
			-	-
			-	-
26. Special procedures	-	-	-	
-	(1) Alarm verification	X	Annually	Verify time delay and alarm response for smoke detector circuits identified as having alarm verification.
-	(2) Multiplex systems	X	Annually	Verify communications between sending and receiving units under both primary and secondary power.
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
			-	-
27.	Supervising station alarm systems — receiving equipment	-	-	-	
-		(1) All equipment	X	Monthly	Perform tests on all system functions and features in accordance with the equipment manufacturer's published instructions for correct operation in conformance with the applicable sections of Chapter 26.
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
-	(2) Digital alarm communicator receiver (DACR)	X	Monthly	Disconnect each transmission means in turn from the DACR, and verify audible and visual annunciation of a trouble signal in the supervising station.
			-	-
-	(3) Digital alarm radio receiver (DARR)	X	Monthly	Cause the following conditions of all DARRs on all subsidiary and repeater station receiving equipment. Verify receipt at the supervising station of correct signals for each of the following conditions:
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
			-	-
-	(4) McCulloh systems	X	Monthly	Test and record the current on each circuit at each supervising and subsidiary station under the following conditions:
			-	-
			-	-
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
			-	-
			-	-
-	(5) Radio alarm supervising station receiver (RASSR) and radio alarm repeater station receiver (RARSR)	X	Monthly	Cause each of the following conditions at each of the supervising or subsidiary stations and all repeater station radio transmitting and receiving equipment; verify receipt of correct signals at the supervising station:
			-	-
			-	-
			-	-
-	(6) Private microwave radio systems	X	Monthly	Cause each of the following conditions at each of the supervising or subsidiary stations and all repeater station radio transmitting and receiving equipment; verify receipt of correct signals at the supervising station:
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
			-	-
-	(7) Performance-based technologies	X	Monthly	Perform tests to ensure the monitoring of integrity of the transmission technology and technology path. Where a single communications path is used, disconnect the communication path. Verify that failure of the path is annunciated at the supervising station within 60 minutes of the failure (within 5 minutes for communication equipment installed prior to adoption of the 2013 edition of *NFPA 72*). Restore the communication path. Where multiple communication paths are used, disconnect both communication paths and confirm that failure of the path is annunciated at the supervising station within not more than 6 hours of the failure (within 24 hours for communication equipment installed prior to adoption of the 2013 edition of *NFPA 72*). Restore both communication paths.
28.	Public emergency alarm reporting system transmission equipment	-	-	-

-		Component	Initial Acceptance	Periodic Frequency	Method
-		(1) Publicly accessible alarm box	X	Semiannually	Actuate publicly accessible initiating device(s) and verify receipt of not less than three complete rounds of signal impulses. Perform this test under normal circuit conditions. If the device is equipped for open circuit operation (ground return), test it in this condition as one of the semiannual tests.
-		(2) Auxiliary box	X	Annually	Test each initiating circuit of the auxiliary box by actuation of a protected premises initiating device connected to that circuit. Verify receipt of not less than three complete rounds of signal impulses.
-		(3) Master box	-	-	-
-		(a) Manual operation	X	Semiannually	Perform the tests prescribed for 28(1).
-		(b) Auxiliary operation	X	Annually	Perform the tests prescribed for 28(2).
29.	Low-power radio (wireless systems)	X	N/A	The following procedures describe additional acceptance and reacceptance test methods to verify wireless protection system operation:	
				-	-

-	Component	Initial Acceptance	Periodic Frequency	Method

-	Component	Initial Acceptance	Periodic Frequency	Method

-	Component	Initial Acceptance	Periodic Frequency	Method
30.	Mass notification systems	-	-	-	
-	(1) Functions	X	Annually	At a minimum, test control unit to verify correct receipt of alarm, supervisory, and trouble signals (inputs); operation of evacuation signals and auxiliary functions (outputs); circuit supervision, including detection of open circuits and ground faults; and power supply supervision for detection of loss of ac power and disconnection of secondary batteries.
-	(2) Fuses	X	Annually	Verify the rating and supervision.
-	(3) Interfaced equipment	X	Annually	Verify integrity of single or multiple circuits providing interface between two or more control units. Test interfaced equipment connections by operating or simulating operation of the equipment being supervised. Verify signals required to be transmitted at the control unit.
-	(4) Lamps and LEDs	X	Annually	Illuminate lamps and LEDs.

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(5) Primary (main) power supply	X	Annually	Disconnect all secondary (standby) power and test under maximum load, including all alarm appliances requiring simultaneous operation. Reconnect all secondary (standby) power at end of test. For redundant power supplies, test each separately.
-	(6) Audible textual notification appliances (loudspeakers and other appliances to convey voice messages)	X	Annually	Measure sound pressure level with a sound level meter meeting ANSI/ASAS1.4/Part 1, *Electroacoustics — Sound Level Meters — Part 1: Specifications,* Type 2 requirements. Measure and record levels throughout protected area. Set the sound level meter in accordance with ANSI/ASA S3.41, *Audible Emergency Evacuation (E2) and Evacuation Signals with Relocation Instructions (ESRI),* using the time-weighted characteristic F (FAST). Record the maximum output when the audible emergency evacuation signal is on.
-			-	-
-	(7) Visual	X	Annually	Perform test in accordance with manufacturer's published instructions. Verify appliance locations to be per approved layout and

-	Component	Initial Acceptance	Periodic Frequency	Method
				confirm that no floor plan changes affect the approved layout. Verify the candela rating or method of candela control marking on each visual appliance and rating when reported by the FACU agrees with the approved drawings. Confirm that each appliance flashes.
-	(8) Control unit functions and no diagnostic failures are indicated	X	Annually	Review event log file and verify that the correct events were logged. Review system diagnostic log file; correct deficiencies noted in file. Delete unneeded log files. Delete unneeded error files. Verify that sufficient free disk space is available. Verify unobstructed flow of cooling air is available. Change/clean filters, cooling fans, and intake vents.
-	(9) Control unit reset	X	Annually	Power down the central control unit computer and restart it.
-	(10) Control unit security	X	Annually	If remote control software is loaded onto the system, verify that it is disabled to prevent unauthorized system access.
-	(11) Audible/visual functional test	X	Annually	Send out an alert to a diverse set of predesignated receiving devices and confirm receipt. Include at least one of each type of receiving device.
-	(12) Software backup	X	Annually	Make full system software backup. Rotate backups based on accepted

-	Component	Initial Acceptance	Periodic Frequency	Method
				practice at site.
-	(13) Secondary power test	X	Annually	Disconnect ac power. Verify the ac power failure alarm status on central control unit. With ac power disconnected, verify battery voltage under load.
-	(14) Wireless signals	X	Annually	Check forward/reflected radio power is within specifications.
-	(15) Antenna	X	Annually	Check forward/reflected radio power is within specifications. Verify solid electrical connections with no observable corrosion.
-	(16) Transceivers	X	Annually	Verify proper operation and mounting is not compromised.

[a]Some transmission equipment (such as, but not limited to, cable modems, fiber-optic interface nodes, and VoIP interfaces) are typically powered by the building's electrical system using a secondary (standby) power supply that does not meet the requirements of this Code. This is intended to ensure that the testing authority verifies full secondary (standby) power as required by Chapter 10. Additionally, refer to Table 14.4.3.2, items 7 through 9, for secondary (standby) power supply testing.

[b]The automatic transmission of the check-in (handshake) signal can take up to 60 minutes to occur.

[c]See Table 14.4.3.2, Item 4(1) for the testing of transmission equipment.

[d]The battery tests in Table 14.4.3.2, Item 9, are based on VRLA batteries and it is the intent that the tests specified in (1) through (4) be performed in order. FACU automated load testing of VRLA batteries in accordance with Table 14.4.3.2, Item 9(5), with record of ambient temperature is an acceptable alternative to prescriptive manual methods using test equipment. For other secondary battery types, refer to the battery manufacturer's published instructions or IEEE 450, *Recommended Practice for Maintenance, Testing, and Replacement of Vented Lead-Acid Batteries for Stationary Applications*, for vented lead-acid batteries, and IEEE 1106, *Recommended Practice for Installation, Maintenance, Testing, and Replacement of Vented Nickel-Cadmium Batteries for Stationary Applications*, for nickel-cadmium batteries.

[e]If the charger is adjustable, adjust the output voltage to 2.265 volts per cell ±0.015 volts at 77°F (25°C) or as specified by the alarm equipment manufacturer.

[f]See A.14.4.3.2 Item 9(4). A load test per Item 9(5) is permitted in lieu of an ohmic test.

[g]See A.14.4.3.2 Item 9(5).

[h]The voltmeter sensitivity has been changed from 1000 ohms per volt to 100 ohms per volt so that the false ground readings (caused by induced voltages) are minimized.

[i]Initiating devices such as smoke detectors used for elevator recall, closing dampers, or

releasing doors held in the open position that are permitted by the Code *(see9.6.3 of NFPA 101)* to initiate supervisory signals at the fire alarm control unit (FACU) should be tested at the same frequency (annual) as those devices when they are generating an alarm signal. They are not supervisory devices, but they initiate a supervisory signal at the FACU.

[j]Fusible thermal link detectors are commonly used to close fire doors and fire dampers electrically connected to the fire alarm control unit. They are actuated by the presence of external heat, which causes a solder element in the link to fuse, or by an electric thermal device, which, when energized, generates heat within the body of the link, causing the link to fuse and separate.

[k]Note, it is customary for the manufacturer of the smoke detector to test a particular product from an aerosol provider to determine acceptability for use in smoke entry testing of their smoke detector/smoke alarm. Magnets are not acceptable for smoke entry tests.

[l] There are some detectors that use magnets as a manufacturer's calibrated sensitivity test instrument.

[m]For example, it might not be possible to individually test the heat sensor in a thermally enhanced smoke detector.

[n]Manufacturer's published instructions should be consulted to ensure a proper operational test. No suppression gas or agent is expected to be discharged during the test of the solenoid. *See Test Plan of 14.2.10*.

[o]A monitor module installed on an interface device is not considered a supervisory device and therefore not subject to the quarterly testing frequency requirement. Test frequencies for interface devices should be in accordance with the applicable standard. For example, fire pump controller alarms such as phase reversal are required to be tested annually. If a monitor module is installed to identify phase reversal on the fire alarm control unit, it is not necessary to test for phase reversal four times a year.

[p]Chapter 18 would require 15 dB over average ambient sound for public mode spaces. Sometimes the ambient sound levels are different from what the design was based upon. Private operating mode would require 10 dB over average ambient at the location of the device.

[q]Where building, system, or occupancy changes have been observed, the owner should be notified of the changes. New devices might need to be installed and tested per the initial acceptance testing criteria.

[r]See A.14.4.3.2 and Table 14.4.3.2, Item 24.

Additional Proposed Changes

File Name	Description	Approved
Table_14.4.3.2_Item_18_Abort_Sw.docx		

Statement of Problem and Substantiation for Public Input

The testing of abort switches currently refers to the sequence of operation for development of and/or verification of the system sequence of operation for simple abort function. The test requirement is vague and the sequence of operation should have already been determined prior to acceptance testing. This PI clarifies the testing of an abort switch.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 315-NFPA 72-2022 [Section No. 7.2.1]	

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State:
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Submittal Date: Wed May 25 08:12:50 EDT 2022
Committee: SIG-TMS

Committee Statement

Resolution: FR-5349-NFPA 72-2022

Statement: Item 17(7)(A) - The new sentence is moved from footnote K to the table to make it more visible to the user.

Items 8 and 9, note c - Secondary batteries have become more of an issue for fire alarm systems. NFPA 72, during the last cycle, added requirements for batteries to be listed or component recognized. Chargers used today can offer so much more information, verification, testing data, etc. for the batteries connected to the system. This option allows manufacturers to have their FACUs listed to offer these functions and if a listing should be deemed equivalent to the use of battery testers. This is similar to smoke detector sensitivity testing where a FACU can provide that testing is listed for the purpose.

Items 9 (2) and 9(4), note e and note f - A task group was set up to conduct an extensive, detailed review of each table footnote and determined what could be moved into the testing table itself and what should remain as a table footnote. In accordance with the Manual of Style, mandatory language should reside in the table and not in the footnote.

Item 17(4)(c) - The sentence was revised to clarify the functional testing methods.

Item 18 - The testing of abort switches currently refers to the sequence of operation for development of and/or verification of the system sequence of operation for simple abort function. The test requirement is vague and the sequence of operation should have already been determined prior to acceptance testing. This revision clarifies the testing of an abort switch.

Items 4(6), 10, 17(11) - Manual of style does not permit requirements in tables.

Public Input No. 394-NFPA 72-2022 [Section No. 14.4.3.2]

14.4.3.2*

Systems and associated equipment shall be tested according to Table 14.4.3.2.

Table 14.4.3.2 Testing

-	Component	Initial Acceptance	Periodic Frequency	Method
1. All equipment	X	-		See Table 14.3.1.
2. Control unit	-	-	-	
-	(1) Functions	X	Annually	Verify correct receipt of alarm, supervisory, and trouble signals (inputs); operation of evacuation signals and auxiliary functions (outputs); circuit supervision, including detection of open circuits and ground faults; and power supply supervision for detection of loss of ac power and disconnection of secondary batteries.
-	(2) Fuses	X	Annually	Verify rating and supervision.
-	(3) Interfaced equipment	X	Annually	Verify integrity of single or multiple circuits providing interface between two or more control units. Test interfaced equipment connections by operating or simulating operation of the equipment being supervised. Verify signals required to be transmitted at the control unit.
-	(4) Lamps and LEDs	X	Annually	Illuminate lamps and LEDs.
-	(5) Primary (main) power supply	X	Annually	Disconnect all secondary (standby) power and test under maximum load, including all alarm appliances requiring simultaneous operation. Reconnect all secondary (standby) power at end of test. Test redundant power supplies separately.

-	Component	Initial Acceptance	Periodic Frequency	Method
3.	Alarm control unit trouble signals	-	-	-
-	(1) Audible and visual	X	Annually	Verify operation of control unit trouble signals. Verify ring-back feature for systems using a trouble-silencing switch that requires resetting.
-	(2) Disconnect switches	X	Annually	If control unit has disconnect or isolating switches, verify performance of intended function of each switch. Verify receipt of trouble signal when a supervised function is disconnected.
-	(3) Ground-fault monitoring circuit	X	Annually	If the system has a ground detection feature, verify the occurrence of ground-fault indication whenever any installation conductor is grounded.
-	(4) Transmission of signals to off-premises location	X	Annually	Actuate an initiating device and verify receipt of alarm signal at the off-premises location.
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
4. Supervising station alarm systems — transmission equipment	-	-	-	
-	(1) All equipment	X	Annually	[a]Test all system functions and features in accordance with the equipment manufacturer's published instructions for correct operation in conformance with the applicable sections of Chapter 26.
			-	-
			-	-
-	(2) Digital alarm communicator transmitter (DACT)	X	Annually	Except for DACTs installed prior to adoption of the 2013 edition of NFPA 72 that are connected to a telephone line

-	Component	Initial Acceptance	Periodic Frequency	Method
				(number) that is also supervised for adverse conditions by a derived local channel, ensure connection of the DACT to two separate means of transmission.
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(3) Digital alarm radio transmitter (DART)	X	Annually	Disconnect the primary telephone line. Verify transmission of a trouble signal to the supervising station by the DART occurs within 4 minutes.
-	(4) McCulloh transmitter	X	Annually	Actuate initiating device. Verify production of not less than three complete rounds of not less than three signal impulses each by the McCulloh transmitter.

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			(2) Ground	
			-	-
			-	-
			-	-
			-	-
			(2) Ground	
			-	-
-	(5) Radio alarm transmitter (RAT)	X	Annually	Cause a fault between elements of the transmitting equipment. Verify indication of the fault at the protected premises, or transmission of trouble signal to the supervising station.
-	(6) Performance-based technologies	X	Annually	Perform tests to ensure the monitoring of integrity of the transmission technology and technology path. Where shared communications equipment is used as permitted by 26.6.3.12, provided secondary (standby)

-	Component	Initial Acceptance	Periodic Frequency	Method
				power sources shall be tested in accordance with Table 14.4.3.2, item 7, 8, or 9, as applicable.

-	Component	Initial Acceptance	Periodic Frequency	Method
5.	Emergency communications equipment	-	-	-
-	(1) Amplifier/tone generators	X	Annually	Verify correct switching and operation of backup equipment.
-	(2) Call-in signal silence	X	Annually	Operate/function and verify receipt of correct visual and audible signals at control unit.
-	(3) Off-hook indicator (ring down)	X	Annually	Install phone set or remove phone from hook and verify receipt of signal at control unit.
-	(4) Phone jacks	X	Annually	Visually inspect phone jack and initiate communications path through jack.
-	(5) Phone set	X	Annually	Actuate each phone set and verify correct operation.
-	(6) System performance	X	Annually	Operate the system with a minimum of any five handsets simultaneously. Verify voice quality and clarity.
6.	Engine-driven generator	X	Monthly	If an engine-driven generator dedicated to the system is used as a required power source, verify operation of the generator and transfer switch in accordance with NFPA 110 by the building owner.
7.	Emergency power supply system/stored-emergency power supply system (EPSS/SEPSS)	X	Annually	If an EPSS/SEPSS dedicated to the system is used as a required power source, verify by the building owner operation of the

-	Component	Initial Acceptance	Periodic Frequency	Method	
			EPSS/SEPSS in accordance with NFPA 111.		
8.	Secondary (standby) power supply[c]	X	Annually	Disconnect all primary (main) power supplies and verify the occurrence of required trouble indication for loss of primary power. Measure or verify the system's standby and alarm current demand using the equipment manufacturer's data and verify the battery's rated capacity exceeds the system's power demand, including the safety margin. Operate general alarm systems a minimum of 5 minutes and emergency voice communications systems for a minimum of 15 minutes. Reconnect primary (main) power supply at end of test.	
9.	VRLA battery and charger[d]	-	-		Prior t conduc any ba testing by the conduc test, th system softwa stored volatile memo protec loss.

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(1) Temperature test	X	Semiannually	Upon initially opening the cabinet door, measure the internal ambient temperature of the enclosure. Measure the temperature of each battery cell/unit at the negative terminal with an infrared thermometer. Replace any battery cell/unit if its temperature is greater than 18°F (10°C) above the measured internal ambient temperature of the enclosure.
-	(2) Charger test[e]	X	Semiannually	With the battery fully charged and connected to the charger, measure the voltage across the battery with a voltmeter. Verify the voltage is within the battery/alarm equipment manufacturer's recommendations. If the voltage is outside of the specified limits, either adjust the charger to within limits or replace the charger.
-	(3) Cell/Unit voltage test	X	Semiannually	With the battery fully charged and connected to the charger, measure the voltage of each cell/unit with a voltmeter. Replace the battery when any cell/unit measures a voltage less than 13.26 volts.
-	(4) Ohmic test[f]	X	N/A	When the battery is installed, establish a baseline ohmic value for each battery cell/unit or where available use baseline ohmic values provided by the battery or test equipment

-	Component	Initial Acceptance	Periodic Frequency	Method	
				manufacturer. In either case record the base line ohmic value on each battery cell/unit.	
		-	-	-	Semia
-	(5) Replacement/Load test[g]	-		3 years	Replac battery condu test of battery capaci test th based

-	Component	Initial Acceptance	Periodic Frequency	Method	
					manuf specifi for a d rate of or mor applyi curren indicat the se hourly discha contin until th termin voltag decrea the en voltag specifi the manuf Recor test du and ca the ba capaci includi adjust ambie tempe Repla battery capaci less th equal or at th sched interva battery capaci less th
10.	Public emergency alarm reporting system — wired system	X	Daily	Manual tests of the power supply for public reporting circuits shall be made and recorded at least once during each 24-hour period. Such tests shall include the following: - -	

-	Component	Initial Acceptance	Periodic Frequency	Method

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
11.	Remote annunciators	X	Annually	Verify the correct operation and identification of annunciators. If provided, verify the correct operation of annunciator under a fault condition.
12.	Reserved	-	-	-
13.	Reserved	-	-	-
14.	Wireless communications	X	Annually	Test per the manufacturer's published instructions.
15.	Conductors — metallic	-	-	-
-	(1) Stray voltage	X	N/A	Test all installation conductors with a volt/ohmmeter to verify that there are no stray (unwanted) voltages between installation conductors or between installation conductors and ground. Verify the maximum allowable stray voltage does not exceed 1 volt ac/dc, unless a different threshold is specified in the manufacturer's published instructions for the installed equipment.
-	(2) Ground faults	X	N/A	Test all installation conductors, other than those intentionally and permanently grounded, for isolation from ground per the installed equipment manufacturer's published instructions.
-	(3) Short-circuit faults	X	N/A	Test all installation conductors, other than those intentionally connected together, for conductor-to-

-	Component	Initial Acceptance	Periodic Frequency	Method	
				conductor isolation per the manufacturer's published instructions for the installed equipment. Also test these same circuits conductor-to-ground.	
-	(4) Loop resistance	X	N/A	With each initiating and indicating circuit installation conductor pair short-circuited at the far end, measure and record the resistance of each circuit. Verify that the loop resistance does not exceed the limits specified in the manufacturer's published instructions for the installed equipment.	
-	(5) Circuit integrity	X	N/A	For initial and reacceptance testing, confirm the introduction of a fault in any circuit monitored for integrity results in a trouble indication at the fire alarm control unit. Open one connection at not less than 10 percent of the initiating devices, notification appliances and controlled devices on every initiating device circuit, notification appliance circuit, and signaling line circuit. Confirm all circuits perform as indicated in Sections 23.5, 23.6, and 23.7.	
	-	-	N/A	Annually	For pe testing each i device notifica applia circuit, signali circuit correc

-	Component	Initial Acceptance	Periodic Frequency	Method	
					indicat the co unit. C all circ perfor indicat Sectio 23.6, a 23.7.
16. Nonmetallic pathways	-	-	-		
-	(1) Optical fiber cables	X	N/A	Test the transmission characteristics of optical fibers by the use of an optical power meter or by an optical time domain reflectometer used to measure the relative power loss of the line. Test result data must meet or exceed ANSI/TIA 568.3, *Optical Fiber Cabling and Components Standard*, related to fiber-optic lines and connection/splice losses and the control unit manufacturer's published specifications.	
-	(2) Circuit integrity	X	N/A	For initial and reacceptance testing, confirm the introduction of a fault in any circuit monitored for integrity results in a trouble indication at the fire alarm control unit. Open one connection at not less than 10 percent of the initiating devices, notification appliances, and controlled devices on every initiating device circuit, notification appliance circuit, and signaling line circuit. Confirm all circuits perform as indicated in Sections 23.5, 23.6, and 23.7.	

		Component	Initial Acceptance	Periodic Frequency	Method	
				N/A	Annually	For pe testing each i device notifica applia circuit, signali circuit correc indicat the co unit. C all circ perfor indicat Sectio 23.6, a 23.7.
17.	Initiating devices[i]					
		(1) Electromechanical releasing device				
		(a) Nonrestorable-type link	X	Annually	Verify correct operation by removal of the fusible link and operation of the associated device.	
		(b) Restorable-type link[j]	X	Annually	Verify correct operation by removal of the fusible link and operation of the associated device.	
		(2) Fire extinguishing system(s) or suppression system(s) alarm switch	X	Annually	Operate the switch mechanically or electrically and verify receipt of signal by the fire alarm control unit.	
		(3) Fire–gas and other detectors	X	Annually	Test fire–gas detectors and other fire detectors as prescribed by the manufacturer and as necessary for the application.	
		(4) Heat detectors				
		(a) Fixed-temperature, rate-of-rise, rate of compensation, restorable line, spot type	X	Annually (see 14.4.4.5)	Perform heat test with a listed and labeled heat source or in accordance with the manufacturer's published instructions.	

		Component	Initial Acceptance	Periodic Frequency	Method
		(excluding pneumatic tube type)			Assure that the test method for the installed equipment does not damage the nonrestorable fixed-temperature element of a combination rate-of-rise/fixed-temperature element detector.
		(b) Fixed-temperature, nonrestorable line type	X	Annually	Do not perform heat test. Test functionality mechanically and electrically. Measure and record loop resistance. Investigate changes from acceptance test.
		(c) Fixed-temperature, nonrestorable spot type	X	See Method	After 15 years from initial installation, replace all devices or have 2 detectors per 100 laboratory tested. Replace the 2 detectors with new devices. If a failure occurs on any of the detectors removed, remove and test additional detectors to determine either a general problem involving faulty detectors or a localized problem involving 1 or 2 defective detectors.
		(d) Restorable line type, pneumatic tube only	X	Annually	Perform heat tests (where test chambers are in circuit), with a listed and labeled heat source or in accordance with the

-	Component	Initial Acceptance	Periodic Frequency	Method
				manufacturer's published instructions of the detector or conduct a test with pressure pump.
-	(e) Single- and multiple-station heat alarms	X	Annually	Conduct functional tests according to manufacturer’s published instructions. Do not test nonrestorable heat detectors with heat.
-	(5) Manual fire alarm boxes	X	Annually	Operate manual fire alarm boxes per the manufacturer’s published instructions. Test both key-operated presignal and general alarm manual fire alarm boxes.
-	(6) Radiant energy fire detectors	X	Semiannually	Test flame detectors and spark/ember detectors in accordance with the manufacturer’s published instructions to determine that each detector is operative.
			-	-
			-	-
			-	-
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
-	(7) Smoke detectors — functional test	-	-	-
-	(a) In other than one- and two-family dwellings, system detectors	X	Annually	[k]Test smoke detectors in place to ensure smoke entry into the sensing chamber and an alarm response. Use smoke or a listed and labeled product acceptable to the manufacturer or in accordance with their published instructions. Other methods listed in the manufacturer's published instructions that ensure smoke entry from the protected area, through the vents, into

-	Component	Initial Acceptance	Periodic Frequency	Method
				the sensing chamber can be used.
-	(b) Single- and multiple-station smoke alarms connected to protected premises systems	X	Annually	Perform a functional test on all single- and multiple-station smoke alarms connected to a protected premises fire alarm system by putting the smoke alarm into an alarm condition.
-	(c) System smoke detectors used in one- and two-family dwellings	X	Annually	Conduct functional tests according to manufacturer's published instructions.
-	(d) Air sampling	X	Annually	Test with smoke or a listed and labeled product acceptable to the manufacturer or in accordance with their published instructions. In the absence of an automatic, listed airflow supervision feature, test from the end sampling port or point on each pipe run and verify airflow through all other ports or points.
-	(e) Duct type	X	Annually	In addition to the testing required in Table 14.4.3.2(17)(7)(a) and Table 14.4.3.2(17)(8), test duct smoke detectors that use sampling tubes to ensure that they will properly sample the airstream in the duct using a method acceptable to the manufacturer or in accordance with their published instructions.
-	(f) Projected beam type	X	Annually	Test the detector by introducing smoke, other aerosol, or an optical filter into the beam path.
-	(g) Smoke detector with built-in thermal element	X	Annually	Operate both portions of the detector independently as described for the

-	Component	Initial Acceptance	Periodic Frequency	Method
				respective devices.
-	(h) Smoke detectors with control output functions	X	Annually	Verify that the control capability remains operable even if all of the initiating devices connected to the same initiating device circuit or signaling line circuit are in an alarm state.
-	(8) Smoke detectors — sensitivity testing	-	-	-
-	In other than one- and two-family dwellings, system detectors	N/A	See 14.4.4.3	Perform any of the following tests to ensure that each smoke detector is within its listed and marked sensitivity range:
			-	-
			-	-
			-	-
			-	-
			-	-
-	(9) Carbon monoxide detectors/carbon	-	-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
	monoxide alarms connected to protected premises systems			
-	(a) CO entry test	X	Annually	Test the devices in place to ensure CO entry to the sensing chamber by introduction through the vents, to the sensing chamber of listed and labeled product acceptable to the manufacturer or in accordance with manufacturer's published instructions
-	(b) Air sampling	X	Annually	Per test methods documented in the manufacturer's published instructions, verify detector alarm response through the end sampling port on each pipe run; verify airflow through all other ports as well.
-	(c) Duct type	X	Annually	Test or inspect air duct detectors to ensure that the device will sample the airstream in accordance with the manufacturer's published instructions.
-	(d) CO detector with control output functions	X	Annually	Within each protected space, verify that the control capability remains operable even if all of the initiating devices connected to the same initiating device circuit or signaling line circuit are in an alarm state.
-	(10) Initiating devices, supervisory	-	-	-
-	(a) Control valve switch	X	Semiannual	Operate valve and verify signal receipt to be within the first two revolutions of the handwheel or within one-fifth of the travel distance, or per the

-	Component	Initial Acceptance	Periodic Frequency	Method
				manufacturer's published instructions. Continue to cycle outside stem and yoke valves and verify switch does not reset during full travel of the valve stem.
-	(b) High- or low-air pressure switch	X	Annually	Operate switch and verify receipt of signal is obtained where the required pressure is increased or decreased a maximum 10 psi (70 kPa) from the required pressure level or in accordance with manufacturer's published instructions.
-	(c) Steam pressure	X	Annually	Operate switch and verify receipt of signal is obtained before pressure decreases to 110 percent of the minimum operating pressure of the steam-operated equipment.
-	(d) Pressure supervisory devices for other sources	X	Annually	Operate switch and verify receipt of signal is obtained where the required pressure is increased or decreased from the normal operating pressure by an amount specified in approved design documents.
-	(e) Room temperature switch	X	Annually	Operate switch and verify receipt of signal to indicate the decrease in room temperature to 40°F (4.4°C) and its restoration to above 40°F (4.4°C).
-	(f) Water level switch	X	Annually	Operate switch and verify receipt of signal indicating the water level raised or lowered a maximum 3 in. (70 mm) from the required level within a pressure tank, or a

-	Component	Initial Acceptance	Periodic Frequency	Method
				maximum 12 in. (300 mm) from the required level of a nonpressure tank. Also verify its restoral to required level.
-	(g) Water temperature switch	X	Annually	Operate switch and verify receipt of signal to indicate the decrease in water temperature to 40°F (4.4°C) and its restoration to above 40°F (4.4°C).
-	(11) Mechanical, electrosonic, or pressure-type waterflow device	X	Semiannually	Water shall be flowed through an inspector's test connection indicating the flow of water equal to that from a single sprinkler of the smallest orifice size installed in the system or other listed and approved waterflow switch test methods for wet-pipe systems, or an alarm test bypass connection for dry-pipe, pre-action, or deluge systems in accordance with NFPA 25.
-	(12) Multi-sensor fire detector or multi-criteria fire detector or combination fire detector	X	Annually	1. Test each detector in accordance with the manufacturer’s published instructions. Test each of the sensors present within the detector (e.g., smoke/heat/CO, etc.) independently for the specific detection principle, regardless of the configuration status at the time of testing, or individual sensors together if the technology allows individual sensor responses to be verified, or where sensors cannot be tested individually, test the primary sensor.[m]

	Component	Initial Acceptance	Periodic Frequency	Method
18.	Special hazard equipment			
	(1) Abort switch (dead-man type)	X	Annually	Operate abort switch and verify correct sequence and operation.

-		Component	Initial Acceptance	Periodic Frequency	Method
-		(2) Abort switch (recycle type)	X	Annually	Operate abort switch and verify development of correct matrix with each sensor operated.
-		(3) Abort switch (special type)	X	Annually	Operate abort switch and verify correct sequence and operation in accordance with authority having jurisdiction. Observe sequencing as specified on as-built drawings or in system owner's manual.
-		(4) Cross-zone detection circuit	X	Annually	Operate one sensor or detector on each zone. Verify occurrence of correct sequence with operation of first zone and then with operation of second zone.
-		(5) Matrix-type circuit	X	Annually	Operate all sensors in system. Verify development of correct matrix with each sensor operated.
-		(6) Release solenoid circuit[n]	X	Annually	Verify operation of solenoid.
-		(7) Squibb release circuit	X	Annually	Use AGI flashbulb or other test light approved by the manufacturer. Verify operation of flashbulb or light.
-		(8) Verified, sequential, or counting zone circuit	X	Annually	Operate required sensors at a minimum of four locations in circuit. Verify correct sequence with both the first and second detector in alarm.
-		(9) All above devices or circuits or combinations thereof	X	Annually	Verify supervision of circuits by creating an open circuit.
19.	Combination systems	-	-	-	

	-	Component	Initial Acceptance	Periodic Frequency	Method
	-	(1) Fire extinguisher electronic monitoring device/system	X	Annually	Test communication between the device connecting the fire extinguisher electronic monitoring device/system and the fire alarm control unit to ensure proper signals are received at the fire alarm control unit and remote annunciator(s) if applicable.
	-	(2) Carbon monoxide device/system	X	Annually	Test communication between the device connecting the carbon monoxide device/system and the fire alarm control unit to ensure proper signals are received at the fire alarm control unit and remote annunciator(s) if applicable.
20.	Interface equipment[o]	X	See 14.4.4.4		Test interface equipment connections by operating or simulating the equipment being supervised. Verify signals required to be transmitted are received at the control unit. Test frequency for interface equipment is the same as the frequency required by the applicable NFPA standard(s) for the equipment being supervised.
21.	Guard's tour equipment	X	Annually		Test the device in accordance with the manufacturer's published instructions.

-	Component	Initial Acceptance	Periodic Frequency	Method	
22.	Alarm notification appliances	-	-	-	
-	(1) Audible[p]	X	N/A	For initial and reacceptance testing, measure sound pressure levels for alert tone signals and evacuation signal tones with a sound level meter meeting ANSI/ASAS1.4/Part 1, *Electroacoustics — Sound Level Meters — Part 1: Specifications,* Type 2 requirements. Measure sound pressure levels to determine if they are in compliance with Chapter 18 and the required performance, as documented per 7.3.4. Set the sound level meter in accordance with ANSI/ASA S3.41, *Audible Emergency Evacuation (E2) and Evacuation Signals with Relocation Instructions (ESRI),* using the time-weighted characteristic F (FAST).	
	-	-	N/A	Annually	[q]For p testing the op of the notifica applia
-	(2) Audible textual notification appliances (loudspeakers and other appliances to convey voice messages)	X	N/A	For initial and reacceptance testing, measure sound pressure levels for signals with a sound level meter meeting ANSI/ASAS1.4/Part 1, *Electroacoustics — Sound Level Meters — Part 1: Specifications,* Type 2 requirements. Measure sound	

-	Component	Initial Acceptance	Periodic Frequency	Method	
				pressure levels throughout the protected area to determine if they are in compliance with Chapter 18 and the required performance, as documented per 7.3.4. Set the sound level meter in accordance with ANSI/ASA S3.41, *Audible Emergency Evacuation (E2) and Evacuation Signals with Relocation Instructions (ESRI),* using the time-weighted characteristic F (FAST).	
			-	-	
	-	-	N/A	Annually	[q]For p testing the op of the notifica applia
-	(3) Visual	X	N/A	Perform initial and reacceptance testing in accordance with the manufacturer's published instructions. Verify appliance locations to be per approved layout and confirm that no floor plan changes affect the approved layout. Verify the candela rating or method of candela control marking on each visual appliance and rating when reported by the FACU agrees with the approved drawings. Confirm that each appliance flashes.	

		Component	Initial Acceptance	Periodic Frequency	Method	
	-	-	-	N/A	Annually	For pe testing that ea applia flashes
23.	Exit marking audible notification appliance	X	Annually	Perform tests in accordance with manufacturer's published instructions.		
24.	Emergency control functions[r]	X	Annually	For initial, reacceptance, and periodic testing, verify emergency control function interface device activation. Where an emergency control function interface device is disabled or disconnected during initiating device testing, verify that the disabled or disconnected emergency control function interface device has been properly restored, including electromagnetic devices used for door releasing services as part of a fire alarm system.		
25.	Two-way emergency communications systems	X	Annually	Use the manufacturer's published instructions and the as-built drawings provided by the system supplier to verify correct operation after the initial testing phase has been		

-	Component	Initial Acceptance	Periodic Frequency	Method
			performed by the supplier or by the supplier's designated representative.	
			-	-
			-	-
			-	-
			-	-
			-	-
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
26.	Special procedures	-	-	-
-	(1) Alarm verification	X	Annually	Verify time delay and alarm response for smoke detector circuits identified as having alarm verification.
-	(2) Multiplex systems	X	Annually	Verify communications between sending and receiving units under both primary and secondary power.
			-	-
			-	-
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
27.	Supervising station alarm systems — receiving equipment	-	-	-
-	(1) All equipment	X	Monthly	Perform tests on all system functions and features in accordance with the equipment manufacturer's published instructions for correct operation in conformance with the applicable sections of Chapter 26.
			-	-
			-	-
-	(2) Digital alarm communicator receiver (DACR)	X	Monthly	Disconnect each transmission means in turn from the DACR, and verify audible and visual annunciation of a trouble signal in the supervising station.
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(3) Digital alarm radio receiver (DARR)	X	Monthly	Cause the following conditions of all DARRs on all subsidiary and repeater station receiving equipment. Verify receipt at the supervising station of correct signals for each of the following conditions:
			-	-
			-	-
			-	-
			-	-
			-	-
-	(4) McCulloh systems	X	Monthly	Test and record the current on each circuit at each supervising and subsidiary station under the following conditions:
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
			-	-
			-	-
			-	-
			-	-
-	(5) Radio alarm supervising station receiver (RASSR) and radio alarm repeater station receiver (RARSR)	X	Monthly	Cause each of the following conditions at each of the supervising or subsidiary stations and all repeater station radio transmitting and receiving equipment; verify receipt of correct signals at the supervising station:
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
-	(6) Private microwave radio systems	X	Monthly	Cause each of the following conditions at each of the supervising or subsidiary stations and all repeater station radio transmitting and receiving equipment; verify receipt of correct signals at the supervising station:
			-	-
			-	-
			-	-
			-	-
-	(7) Performance-based technologies	X	Monthly	Perform tests to ensure the monitoring of integrity of the transmission technology and technology path. Where a single communications path is used, disconnect the communication path. Verify that failure of the path is annunciated at the supervising station within 60 minutes of the failure (within 5 minutes for communication equipment installed prior to adoption of the 2013 edition of *NFPA 72*). Restore the communication path. Where multiple

-	Component	Initial Acceptance	Periodic Frequency	Method
				communication paths are used, disconnect both communication paths and confirm that failure of the path is annunciated at the supervising station within not more than 6 hours of the failure (within 24 hours for communication equipment installed prior to adoption of the 2013 edition of *NFPA 72*). Restore both communication paths.
28.	Public emergency alarm reporting system transmission equipment	-	-	-	
-	(1) Publicly accessible alarm box	X	Semiannually	Actuate publicly accessible initiating device(s) and verify receipt of not less than three complete rounds of signal impulses. Perform this test under normal circuit conditions. If the device is equipped for open circuit operation (ground return), test it in this condition as one of the semiannual tests.
-	(2) Auxiliary box	X	Annually	Test each initiating circuit of the auxiliary box by actuation of a protected premises initiating device connected to that circuit. Verify receipt of not less than three complete rounds of signal impulses.
-	(3) Master box	-	-	-
-	(a) Manual operation	X	Semiannually	Perform the tests prescribed for 28(1).
-	(b) Auxiliary operation	X	Annually	Perform the tests prescribed for 28(2).

-	Component	Initial Acceptance	Periodic Frequency	Method
29.	Low-power radio (wireless systems)	X	N/A	The following procedures describe additional acceptance and reacceptance test methods to verify wireless protection system operation:

-	Component	Initial Acceptance	Periodic Frequency	Method

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
30.	Mass notification systems	-	-	-
-	(1) Functions	X	Annually	~~At a minimum, test~~ Test control unit to verify correct receipt of alarm, supervisory, and trouble signals (inputs); operation of evacuation signals and auxiliary functions (outputs); circuit supervision, including detection of open circuits and ground faults; and power supply supervision for

-	Component	Initial Acceptance	Periodic Frequency	Method
				detection of loss of ac power and disconnection of secondary batteries.
-	(2) Fuses	X	Annually	Verify the rating and supervision.
-	(3) Interfaced equipment	X	Annually	Verify integrity of single or multiple circuits providing interface between two or more control units. Test interfaced equipment connections by operating or simulating operation of the equipment being supervised. Verify signals required to be transmitted at the control unit.
-	(4) Lamps and LEDs	X	Annually	Illuminate lamps and LEDs.
-	(5) Primary (main) power supply	X	Annually	Disconnect all secondary (standby) power and test under maximum load, including all alarm appliances requiring simultaneous operation. Reconnect all secondary (standby) power at end of test. For redundant power supplies, test each separately.
-	(6) Audible textual notification appliances (loudspeakers and other appliances to convey voice messages)	X	Annually	Measure sound pressure level with a sound level meter meeting ANSI/ASAS1.4/Part 1, *Electroacoustics — Sound Level Meters — Part 1: Specifications,* Type 2 requirements. Measure and record levels throughout protected area. Set the sound level meter in accordance with ANSI/ASA S3.41, *Audible Emergency Evacuation (E2) and Evacuation Signals*

-	Component	Initial Acceptance	Periodic Frequency	Method
				with Relocation Instructions (ESRI), using the time-weighted characteristic F (FAST). Record the maximum output when the audible emergency evacuation signal is on.
			-	-
-	(7) Visual	X	Annually	Perform test in accordance with manufacturer's published instructions. Verify appliance locations to be per approved layout and confirm that no floor plan changes affect the approved layout. Verify the candela rating or method of candela control marking on each visual appliance and rating when reported by the FACU agrees with the approved drawings. Confirm that each appliance flashes.
-	(8) Control unit functions and no diagnostic failures are indicated	X	Annually	Review event log file and verify that the correct events were logged. Review system diagnostic log file; correct deficiencies noted in file. Delete unneeded log files. Delete unneeded error files. Verify that sufficient free disk space is available. Verify unobstructed flow of cooling air is available. Change/clean filters, cooling fans, and intake vents.

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(9) Control unit reset	X	Annually	Power down the central control unit computer and restart it.
-	(10) Control unit security	X	Annually	If remote control software is loaded onto the system, verify that it is disabled to prevent unauthorized system access.
-	(11) Audible/visual functional test	X	Annually	Send out an alert to a diverse set of predesignated receiving devices and confirm receipt. Include at least one of each type of receiving device.
-	(12) Software backup	X	Annually	Make full system software backup. Rotate backups based on accepted practice at site.
-	(13) Secondary power test	X	Annually	Disconnect ac power. Verify the ac power failure alarm status on central control unit. With ac power disconnected, verify battery voltage under load.
-	(14) Wireless signals	X	Annually	Check forward/reflected radio power is within specifications.
-	(15) Antenna	X	Annually	Check forward/reflected radio power is within specifications. Verify solid electrical connections with no observable corrosion.
-	(16) Transceivers	X	Annually	Verify proper operation and mounting is not compromised.

[a]Some transmission equipment (such as, but not limited to, cable modems, fiber-optic interface nodes, and VoIP interfaces) are typically powered by the building's electrical system using a secondary (standby) power supply that does not meet the requirements of this Code. This is intended to ensure that the testing authority verifies full secondary (standby) power as required by Chapter 10. Additionally, refer to Table 14.4.3.2, items 7 through 9, for secondary (standby) power supply testing.

[b]The automatic transmission of the check-in (handshake) signal can take up to 60 minutes to occur.

[c]See Table 14.4.3.2, Item 4(1) for the testing of transmission equipment.

[d]The battery tests in Table 14.4.3.2, Item 9, are based on VRLA batteries and it is the intent that the tests specified in (1) through (4) be performed in order. FACU automated load testing of VRLA batteries in accordance with Table 14.4.3.2, Item 9(5), with record of ambient temperature is an acceptable alternative to prescriptive manual methods using test equipment. For other secondary battery types, refer to the battery manufacturer's published instructions or IEEE 450, *Recommended Practice for Maintenance, Testing, and Replacement of Vented Lead-Acid Batteries for Stationary Applications*, for vented lead-acid batteries, and IEEE 1106, *Recommended Practice for Installation, Maintenance, Testing, and Replacement of Vented Nickel-Cadmium Batteries for Stationary Applications*, for nickel-cadmium batteries.

[e]If the charger is adjustable, adjust the output voltage to 2.265 volts per cell ±0.015 volts at 77°F (25°C) or as specified by the alarm equipment manufacturer.

[f]See A.14.4.3.2 Item 9(4). A load test per Item 9(5) is permitted in lieu of an ohmic test.

[g]See A.14.4.3.2 Item 9(5).

[h]The voltmeter sensitivity has been changed from 1000 ohms per volt to 100 ohms per volt so that the false ground readings (caused by induced voltages) are minimized.

[i]Initiating devices such as smoke detectors used for elevator recall, closing dampers, or releasing doors held in the open position that are permitted by the Code *(see9.6.3 of NFPA 101)* to initiate supervisory signals at the fire alarm control unit (FACU) should be tested at the same frequency (annual) as those devices when they are generating an alarm signal. They are not supervisory devices, but they initiate a supervisory signal at the FACU.

[j]Fusible thermal link detectors are commonly used to close fire doors and fire dampers electrically connected to the fire alarm control unit. They are actuated by the presence of external heat, which causes a solder element in the link to fuse, or by an electric thermal device, which, when energized, generates heat within the body of the link, causing the link to fuse and separate.

[k]Note, it is customary for the manufacturer of the smoke detector to test a particular product from an aerosol provider to determine acceptability for use in smoke entry testing of their smoke detector/smoke alarm. Magnets are not acceptable for smoke entry tests.

[l] There are some detectors that use magnets as a manufacturer's calibrated sensitivity test instrument.

[m]For example, it might not be possible to individually test the heat sensor in a thermally enhanced smoke detector.

[n]Manufacturer's published instructions should be consulted to ensure a proper operational test. No suppression gas or agent is expected to be discharged during the test of the solenoid. *See Test Plan of 14.2.10*.

[o]A monitor module installed on an interface device is not considered a supervisory device and therefore not subject to the quarterly testing frequency requirement. Test frequencies for interface devices should be in accordance with the applicable standard. For example, fire pump controller alarms such as phase reversal are required to be tested annually. If a monitor module is installed to identify phase reversal on the fire alarm control unit, it is not necessary to test for phase reversal four times a year.

[p]Chapter 18 would require 15 dB over average ambient sound for public mode spaces. Sometimes the ambient sound levels are different from what the design was based upon. Private operating mode would require 10 dB over average ambient at the location of the device.

[q]Where building, system, or occupancy changes have been observed, the owner should be

notified of the changes. New devices might need to be installed and tested per the initial acceptance testing criteria.

[r]See A.14.4.3.2 and Table 14.4.3.2, Item 24.

Statement of Problem and Substantiation for Public Input

Deleted non-enforceable language.

Submitter Information Verification

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Submittal Date: Wed May 25 18:09:31 EDT 2022
Committee: SIG-TMS

Committee Statement

Resolution: The Technical Committee does not agree with the submitter as the presence or absence of this language does not appear to have any effect on the test method either way.

Public Input No. 472-NFPA 72-2022 [Section No. 14.4.3.2]

14.4.3.2*

Systems and associated equipment shall be tested according to Table 14.4.3.2.

Table 14.4.3.2 Testing

	Component	Initial Acceptance	Periodic Frequency	Method
1. All equipment	X			See Table 14.3.1.
2. Control unit				
	(1) Functions	X	Annually	Verify correct receipt of alarm, supervisory, and trouble signals (inputs); operation of evacuation signals and auxiliary functions (outputs); circuit supervision, including detection of open circuits and ground faults; and power supply supervision for detection of loss of ac power and disconnection of secondary batteries.
	(2) Fuses	X	Annually	Verify rating and supervision.
	(3) Interfaced equipment	X	Annually	Verify integrity of single or multiple circuits providing interface between two or more control units. Test interfaced equipment connections by operating or simulating operation of the equipment being supervised. Verify signals required to be transmitted at the control unit.
	(4) Lamps and LEDs	X	Annually	Illuminate lamps and LEDs.
	(5) Primary (main) power supply	X	Annually	Disconnect all secondary (standby) power and test under maximum load, including all alarm appliances requiring simultaneous operation. Reconnect all secondary (standby) power at end of test. Test redundant power supplies separately.

-	Component	Initial Acceptance	Periodic Frequency	Method
3.	Alarm control unit trouble signals	-	-	-
-	(1) Audible and visual	X	Annually	Verify operation of control unit trouble signals. Verify ring-back feature for systems using a trouble-silencing switch that requires resetting.
-	(2) Disconnect switches	X	Annually	If control unit has disconnect or isolating switches, verify performance of intended function of each switch. Verify receipt of trouble signal when a supervised function is disconnected.
-	(3) Ground-fault monitoring circuit	X	Annually	If the system has a ground detection feature, verify the occurrence of ground-fault indication whenever any installation conductor is grounded.
-	(4) Transmission of signals to off-premises location	X	Annually	Actuate an initiating device and verify receipt of alarm signal at the off-premises location.
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
4. Supervising station alarm systems — transmission equipment	-	-	-	
-	(1) All equipment	X	Annually	[a]Test all system functions and features in accordance with the equipment manufacturer's published instructions for correct operation in conformance with the applicable sections of Chapter 26.
			-	-
			-	-
-	(2) Digital alarm communicator transmitter (DACT)	X	Annually	Except for DACTs installed prior to adoption of the 2013 edition of NFPA 72 that are connected to a telephone line

-	Component	Initial Acceptance	Periodic Frequency	Method
				(number) that is also supervised for adverse conditions by a derived local channel, ensure connection of the DACT to two separate means of transmission.
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(3) Digital alarm radio transmitter (DART)	X	Annually	Disconnect the primary telephone line. Verify transmission of a trouble signal to the supervising station by the DART occurs within 4 minutes.
-	(4) McCulloh transmitter	X	Annually	Actuate initiating device. Verify production of not less than three complete rounds of not less than three signal impulses each by the McCulloh transmitter.

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			(2) Ground	
			-	-
			-	-
			-	-
			-	-
			(2) Ground	
			-	-
-	(5) Radio alarm transmitter (RAT)	X	Annually	Cause a fault between elements of the transmitting equipment. Verify indication of the fault at the protected premises, or transmission of trouble signal to the supervising station.
-	(6) Performance-based technologies	X	Annually	Perform tests to ensure the monitoring of integrity of the transmission technology and technology path. Where shared communications equipment is used as permitted by 26.6.3.12, provided secondary (standby)

-	Component	Initial Acceptance	Periodic Frequency	Method
				power sources shall be tested in accordance with Table 14.4.3.2, item 7, 8, or 9, as applicable.

-		Component	Initial Acceptance	Periodic Frequency	Method
5.	Emergency communications equipment	-	-	-	
	-	(1) Amplifier/tone generators	X	Annually	Verify correct switching and operation of backup equipment.
	-	(2) Call-in signal silence	X	Annually	Operate/function and verify receipt of correct visual and audible signals at control unit.
	-	(3) Off-hook indicator (ring down)	X	Annually	Install phone set or remove phone from hook and verify receipt of signal at control unit.
	-	(4) Phone jacks	X	Annually	Visually inspect phone jack and initiate communications path through jack.
	-	(5) Phone set	X	Annually	Actuate each phone set and verify correct operation.
	-	(6) System performance	X	Annually	Operate the system with a minimum of any five handsets simultaneously. Verify voice quality and clarity.
6.	Engine-driven generator	X	Monthly	If an engine-driven generator dedicated to the system is used as a required power source, verify operation of the generator and transfer switch in accordance with NFPA 110 by the building owner.	
7.	Emergency power supply system/stored-emergency power supply system (EPSS/SEPSS)	X	Annually	If an EPSS/SEPSS dedicated to the system is used as a required power source, verify by the building owner operation of the	

-	Component	Initial Acceptance	Periodic Frequency	Method	
			EPSS/SEPSS in accordance with NFPA 111.		
8.	Secondary (standby) power supply[c]	X	Annually	Disconnect all primary (main) power supplies and verify the occurrence of required trouble indication for loss of primary power. Measure or verify the system's standby and alarm current demand using the equipment manufacturer's data and verify the battery's rated capacity exceeds the system's power demand, including the safety margin. Operate general alarm systems a minimum of 5 minutes and emergency voice communications systems for a minimum of 15 minutes. Reconnect primary (main) power supply at end of test.	
9.	VRLA battery and charger[d]	-	-		Prior t conduc any ba testing by the conduc test, th system softwa stored volatile memo protec loss.

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(1) Temperature test	X	Semiannually	Upon initially opening the cabinet door, measure the internal ambient temperature of the enclosure. Measure the temperature of each battery cell/unit at the negative terminal with an infrared thermometer. Replace any battery cell/unit if its temperature is greater than 18°F (10°C) above the measured internal ambient temperature of the enclosure.
-	(2) Charger test[e]	X	Semiannually	With the battery fully charged and connected to the charger, measure the voltage across the battery with a voltmeter. Verify the voltage is within the battery/alarm equipment manufacturer's recommendations. If the voltage is outside of the specified limits, either adjust the charger to within limits or replace the charger.
-	(3) Cell/Unit voltage test	X	Semiannually	With the battery fully charged and connected to the charger, measure the voltage of each cell/unit with a voltmeter. Replace the battery when any cell/unit measures a voltage less than 13.26 volts.
-	(4) Ohmic test[f]	X	N/A	When the battery is installed, establish a baseline ohmic value for each battery cell/unit or where available use baseline ohmic values provided by the battery or test equipment

-	Component	Initial Acceptance	Periodic Frequency	Method	
				manufacturer. In either case record the base line ohmic value on each battery cell/unit.	
		-	-	-	Semia
-	(5) Replacement/Load test[g]	-		3 years	Replac battery condu test of battery capaci test th based

-	Component	Initial Acceptance	Periodic Frequency	Method	
					manuf specifi for a d rate of or mor applyi curren indicat the se hourly discha contin until th termin voltag decrea the en voltag specifi the manuf Recor test du and ca the ba capaci includi adjust ambie tempe Repla battery capaci less th equal or at th sched interva battery capaci less th
10.	Public emergency alarm reporting system — wired system	X	Daily	Manual tests of the power supply for public reporting circuits shall be made and recorded at least once during each 24-hour period. Such tests shall include the following:	

-	Component	Initial Acceptance	Periodic Frequency	Method

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
11.	Remote annunciators	X	Annually	Verify the correct operation and identification of annunciators. If provided, verify the correct operation of annunciator under a fault condition.
12.	Reserved	-	-	-
13.	Reserved	-	-	-
14.	Wireless communications	X	Annually	Test per the manufacturer's published instructions.
15.	Conductors — metallic	-	-	-
-	(1) Stray voltage	X	N/A	Test all installation conductors with a volt/ohmmeter to verify that there are no stray (unwanted) voltages between installation conductors or between installation conductors and ground. Verify the maximum allowable stray voltage does not exceed 1 volt ac/dc, unless a different threshold is specified in the manufacturer's published instructions for the installed equipment.
-	(2) Ground faults	X	N/A	Test all installation conductors, other than those intentionally and permanently grounded, for isolation from ground per the installed equipment manufacturer's published instructions.
-	(3) Short-circuit faults	X	N/A	Test all installation conductors, other than those intentionally connected together, for conductor-to-

-	Component	Initial Acceptance	Periodic Frequency	Method	
				conductor isolation per the manufacturer's published instructions for the installed equipment. Also test these same circuits conductor-to-ground.	
-	(4) Loop resistance	X	N/A	With each initiating and indicating circuit installation conductor pair short-circuited at the far end, measure and record the resistance of each circuit. Verify that the loop resistance does not exceed the limits specified in the manufacturer's published instructions for the installed equipment.	
-	(5) Circuit integrity	X	N/A	For initial and reacceptance testing, confirm the introduction of a fault in any circuit monitored for integrity results in a trouble indication at the fire alarm control unit. Open one connection at not less than 10 percent of the initiating devices, notification appliances and controlled devices on every initiating device circuit, notification appliance circuit, and signaling line circuit. Confirm all circuits perform as indicated in Sections 23.5, 23.6, and 23.7.	
	-	-	N/A	Annually	For pe testing each i device notifica applia circuit, signali circuit correc

-	Component	Initial Acceptance	Periodic Frequency	Method	
					indicat the co unit. C all circ perfor indicat Sectio 23.6, a 23.7.
16. Nonmetallic pathways	-	-	-		
-	(1) Optical fiber cables	X	N/A	Test the transmission characteristics of optical fibers by the use of an optical power meter or by an optical time domain reflectometer used to measure the relative power loss of the line. Test result data must meet or exceed ANSI/TIA 568.3, *Optical Fiber Cabling and Components Standard*, related to fiber-optic lines and connection/splice losses and the control unit manufacturer's published specifications.	
-	(2) Circuit integrity	X	N/A	For initial and reacceptance testing, confirm the introduction of a fault in any circuit monitored for integrity results in a trouble indication at the fire alarm control unit. Open one connection at not less than 10 percent of the initiating devices, notification appliances, and controlled devices on every initiating device circuit, notification appliance circuit, and signaling line circuit. Confirm all circuits perform as indicated in Sections 23.5, 23.6, and 23.7.	

	Component	Initial Acceptance	Periodic Frequency	Method	
	-	-	N/A	Annually	For pe testing each i device notifica applia circuit, signali circuit correc indicat the co unit. C all circ perfor indicat Sectio 23.6, a 23.7.
17.	Initiating devices[i]	-	-	-	
-	(1) Electromechanical releasing device	-	-	-	
-	(a) Nonrestorable-type link	X	Annually	Verify correct operation by removal of the fusible link and operation of the associated device.	
-	(b) Restorable-type link[j]	X	Annually	Verify correct operation by removal of the fusible link and operation of the associated device.	
-	(2) Fire extinguishing system(s) or suppression system(s) alarm switch	X	Annually	Operate the switch mechanically or electrically and verify receipt of signal by the fire alarm control unit.	
-	(3) Fire–gas and other detectors	X	Annually	Test fire–gas detectors and other fire detectors as prescribed by the manufacturer and as necessary for the application.	
-	(4) Heat detectors	-	-	-	
-	(a) Fixed-temperature, rate-of-rise, rate of compensation, restorable line, spot type	X	Annually (see 14.4.4.5)	Perform heat test with a listed and labeled heat source or in accordance with the manufacturer's published instructions.	

		Component	Initial Acceptance	Periodic Frequency	Method
		(excluding pneumatic tube type)			Assure that the test method for the installed equipment does not damage the nonrestorable fixed-temperature element of a combination rate-of-rise/fixed-temperature element detector.
		(b) Fixed-temperature, nonrestorable line type	X	Annually	Do not perform heat test. Test functionality mechanically and electrically. Measure and record loop resistance. Investigate changes from acceptance test.
		(c) Fixed-temperature, nonrestorable spot type	X	See Method	After 15 years from initial installation, replace all devices or have 2 detectors per 100 laboratory tested. Replace the 2 detectors with new devices. If a failure occurs on any of the detectors removed, remove and test additional detectors to determine either a general problem involving faulty detectors or a localized problem involving 1 or 2 defective detectors.
		(d) Restorable line type, pneumatic tube only	X	Annually	Perform heat tests (where test chambers are in circuit), with a listed and labeled heat source or in accordance with the

-	Component	Initial Acceptance	Periodic Frequency	Method
				manufacturer's published instructions of the detector or conduct a test with pressure pump.
-	(e) Single- and multiple-station heat alarms	X	Annually	Conduct functional tests according to manufacturer's published instructions. Do not test nonrestorable heat detectors with heat.
-	(5) Manual fire alarm boxes	X	Annually	Operate manual fire alarm boxes per the manufacturer's published instructions. Test both key-operated presignal and general alarm manual fire alarm boxes.
-	(6) Radiant energy fire detectors	X	Semiannually	Test flame detectors and spark/ember detectors in accordance with the manufacturer's published instructions to determine that each detector is operative.
			-	-
			-	-
			-	-
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
-	(7) Smoke detectors — functional test	-	-	-
-	(a) In other than one- and two-family dwellings, system detectors	X	Annually	[k]Test smoke detectors in place to ensure smoke entry into the sensing chamber and an alarm response. Use smoke or a listed and labeled product acceptable to the manufacturer or in accordance with their published instructions. Other methods listed in the manufacturer's published instructions that ensure smoke entry from the protected area, through the vents, into

-	Component	Initial Acceptance	Periodic Frequency	Method
				the sensing chamber can be used.
-	(b) Single- and multiple-station smoke alarms connected to protected premises systems	X	Annually	Perform a functional test on all single- and multiple-station smoke alarms connected to a protected premises fire alarm system by putting the smoke alarm into an alarm condition.
-	(c) System smoke detectors used in one- and two-family dwellings	X	Annually	Conduct functional tests according to manufacturer's published instructions.
-	(d) Air sampling	X	Annually	Test with smoke or a listed and labeled product acceptable to the manufacturer or in accordance with their published instructions. In the absence of an automatic, listed airflow supervision feature, test from the end sampling port or point on each pipe run and verify airflow through all other ports or points.
-	(e) Duct type	X	Annually	In addition to the testing required in Table 14.4.3.2(17)(7)(a) and Table 14.4.3.2(17)(8), test duct smoke detectors that use sampling tubes to ensure that they will properly sample the airstream in the duct using a method acceptable to the manufacturer or in accordance with their published instructions.
-	(f) Projected beam type	X	Annually	Test the detector by introducing smoke, other aerosol, or an optical filter into the beam path.
-	(g) Smoke detector with built-in thermal element	X	Annually	Operate both portions of the detector independently as described for the

-	Component	Initial Acceptance	Periodic Frequency	Method
				respective devices.
-	(h) Smoke detectors with control output functions	X	Annually	Verify that the control capability remains operable even if all of the initiating devices connected to the same initiating device circuit or signaling line circuit are in an alarm state.
-	(8) Smoke detectors — sensitivity testing	-	-	-
-	In other than one- and two-family dwellings, system detectors	N/A	See 14.4.4.3	lPerform any of the following tests to ensure that each smoke detector is within its listed and marked sensitivity range:
			-	-
			-	-
			-	-
			-	-
			-	-
-	(9) Carbon monoxide detectors/carbon	-	-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
	monoxide alarms connected to protected premises systems			
-	(a) CO entry test	X	Annually	Test the devices in place to ensure CO entry to the sensing chamber by introduction through the vents, to the sensing chamber of listed and labeled product acceptable to the manufacturer or in accordance with manufacturer's published instructions
-	(b) Air sampling	X	Annually	Per test methods documented in the manufacturer's published instructions, verify detector alarm response through the end sampling port on each pipe run; verify airflow through all other ports as well.
-	(c) Duct type	X	Annually	Test or inspect air duct detectors to ensure that the device will sample the airstream in accordance with the manufacturer's published instructions.
-	(d) CO detector with control output functions	X	Annually	Within each protected space, verify that the control capability remains operable even if all of the initiating devices connected to the same initiating device circuit or signaling line circuit are in an alarm state.
-	(10) Initiating devices, supervisory	-	-	-
-	(a) Control valve switch	X	Semiannual	Operate valve and verify signal receipt to be within the first two revolutions of the handwheel or within one-fifth of the travel distance, or per the

-	Component	Initial Acceptance	Periodic Frequency	Method
				manufacturer's published instructions. Continue to cycle outside stem and yoke valves and verify switch does not reset during full travel of the valve stem.
-	(b) High- or low-air pressure switch	X	Annually	Operate switch and verify receipt of signal is obtained where the required pressure is increased or decreased a maximum 10 psi (70 kPa) from the required pressure level or in accordance with manufacturer's published instructions.
-	(c) Steam pressure	X	Annually	Operate switch and verify receipt of signal is obtained before pressure decreases to 110 percent of the minimum operating pressure of the steam-operated equipment.
-	(d) Pressure supervisory devices for other sources	X	Annually	Operate switch and verify receipt of signal is obtained where the required pressure is increased or decreased from the normal operating pressure by an amount specified in approved design documents.
-	(e) Room temperature switch	X	Annually	Operate switch and verify receipt of signal to indicate the decrease in room temperature to 40°F (4.4°C) and its restoration to above 40°F (4.4°C).
-	(f) Water level switch	X	Annually	Operate switch and verify receipt of signal indicating the water level raised or lowered a maximum 3 in. (70 mm) from the required level within a pressure tank, or a

-	Component	Initial Acceptance	Periodic Frequency	Method
				maximum 12 in. (300 mm) from the required level of a nonpressure tank. Also verify its restoral to required level.
-	(g) Water temperature switch	X	Annually	Operate switch and verify receipt of signal to indicate the decrease in water temperature to 40°F (4.4°C) and its restoration to above 40°F (4.4°C).
-	(11) Mechanical, electrosonic, or pressure-type waterflow device	X	Semiannually	Water shall be flowed through an inspector's test connection indicating the flow of water equal to that from a single sprinkler of the smallest orifice size installed in the system or other listed and approved waterflow switch test methods for wet-pipe systems, or an alarm test bypass connection for dry-pipe, pre-action, or deluge systems in accordance with NFPA 25.
-	(12) Multi-sensor fire detector or multi-criteria fire detector or combination fire detector	X	Annually	1. Test each detector in accordance with the manufacturer’s published instructions. Test each of the sensors present within the detector (e.g., smoke/heat/CO, etc.) independently for the specific detection principle, regardless of the configuration status at the time of testing, or individual sensors together if the technology allows individual sensor responses to be verified, or where sensors cannot be tested individually, test the primary sensor.[m]

	Component	Initial Acceptance	Periodic Frequency	Method
18.	Special hazard equipment			
	(1) Abort switch (dead-man type)	X	Annually	Operate abort switch and verify correct sequence and operation.

		Component	Initial Acceptance	Periodic Frequency	Method
-		(2) Abort switch (recycle type)	X	Annually	Operate abort switch and verify development of correct matrix with each sensor operated.
-		(3) Abort switch (special type)	X	Annually	Operate abort switch and verify correct sequence and operation in accordance with authority having jurisdiction. Observe sequencing as specified on as-built drawings or in system owner's manual.
-		(4) Cross-zone detection circuit	X	Annually	Operate one sensor or detector on each zone. Verify occurrence of correct sequence with operation of first zone and then with operation of second zone.
-		(5) Matrix-type circuit	X	Annually	Operate all sensors in system. Verify development of correct matrix with each sensor operated.
-		(6) Release solenoid circuit[n]	X	Annually	Verify operation of solenoid.
-		(7) Squibb release circuit	X	Annually	Use AGI flashbulb or other test light approved by the manufacturer. Verify operation of flashbulb or light.
-		(8) Verified, sequential, or counting zone circuit	X	Annually	Operate required sensors at a minimum of four locations in circuit. Verify correct sequence with both the first and second detector in alarm.
-		(9) All above devices or circuits or combinations thereof	X	Annually	Verify supervision of circuits by creating an open circuit.
19.	Combination systems	-	-	-	

	-	Component	Initial Acceptance	Periodic Frequency	Method
	-	(1) Fire extinguisher electronic monitoring device/system	X	Annually	Test communication between the device connecting the fire extinguisher electronic monitoring device/system and the fire alarm control unit to ensure proper signals are received at the fire alarm control unit and remote annunciator(s) if applicable.
	-	(2) Carbon monoxide device/system	X	Annually	Test communication between the device connecting the carbon monoxide device/system and the fire alarm control unit to ensure proper signals are received at the fire alarm control unit and remote annunciator(s) if applicable.
20.	Interface equipment[o]	X	See 14.4.4.4		Test interface equipment connections by operating or simulating the equipment being supervised. Verify signals required to be transmitted are received at the control unit. Test frequency for interface equipment is the same as the frequency required by the applicable NFPA standard(s) for the equipment being supervised.
21.	Guard's tour equipment	X	Annually		Test the device in accordance with the manufacturer's published instructions.

-	Component	Initial Acceptance	Periodic Frequency	Method	
22.	Alarm notification appliances	-	-	-	
-	(1) Audible[p]	X	N/A	For initial and reacceptance testing, measure sound pressure levels for alert tone signals and evacuation signal tones with a sound level meter meeting ANSI/ASAS1.4/Part 1, *Electroacoustics — Sound Level Meters — Part 1: Specifications,* Type 2 requirements. Measure sound pressure levels to determine if they are in compliance with Chapter 18 and the required performance, as documented per 7.3.4. Set the sound level meter in accordance with ANSI/ASA S3.41, *Audible Emergency Evacuation (E2) and Evacuation Signals with Relocation Instructions (ESRI),* using the time-weighted characteristic F (FAST).	
	-	-	N/A	Annually	[q]For p testing the op of the notifica applia
-	(2) Audible textual notification appliances (loudspeakers and other appliances to convey voice messages)	X	N/A	For initial and reacceptance testing, measure sound pressure levels for signals with a sound level meter meeting ANSI/ASAS1.4/Part 1, *Electroacoustics — Sound Level Meters — Part 1: Specifications,* Type 2 requirements. Measure sound	

-	Component	Initial Acceptance	Periodic Frequency	Method	
				pressure levels throughout the protected area to determine if they are in compliance with Chapter 18 and the required performance, as documented per 7.3.4. Set the sound level meter in accordance with ANSI/ASA S3.41, *Audible Emergency Evacuation (E2) and Evacuation Signals with Relocation Instructions (ESRI),* using the time-weighted characteristic F (FAST).	
			-	-	
	-	-	N/A	Annually	[q]For p testing the op of the notifica applia
-	(3) Visual	X	N/A	Perform initial and reacceptance testing in accordance with the manufacturer's published instructions. Verify appliance locations to be per approved layout and confirm that no floor plan changes affect the approved layout. Verify the candela rating or method of candela control marking on each visual appliance and rating when reported by the FACU agrees with the approved drawings. Confirm that each appliance flashes.	

		Component	Initial Acceptance	Periodic Frequency	Method	
	-	-	-	N/A	Annually	For pe testing that ea applia flashes
23.	Exit marking audible notification appliance	X	Annually	Perform tests in accordance with manufacturer's published instructions.		
24.	Emergency control functions[r]	X	Annually	For initial, reacceptance, and periodic testing, verify emergency control function interface device activation. Where an emergency control function interface device is disabled or disconnected during initiating device testing, verify that the disabled or disconnected emergency control function interface device has been properly restored, including electromagnetic devices used for door releasing services as part of a fire alarm system.		
25.	Two-way emergency communications systems	X	Annually	Use the manufacturer’s published instructions and the as-built drawings provided by the system supplier to verify correct operation after the initial testing phase has been		

-	Component	Initial Acceptance	Periodic Frequency	Method
			performed by the supplier or by the supplier's designated representative.	
			-	-
			-	-
			-	-
			-	-
			-	-
			-	-
			-	-

-		Component	Initial Acceptance	Periodic Frequency	Method
26.	Special procedures	-	-	-	
-		(1) Alarm verification	X	Annually	Verify time delay and alarm response for smoke detector circuits identified as having alarm verification.
-		(2) Multiplex systems	X	Annually	Verify communications between sending and receiving units under both primary and secondary power.
				-	-
				-	-
				-	-
				-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
27.	Supervising station alarm systems — receiving equipment	-	-	-
-	(1) All equipment	X	Monthly	Perform tests on all system functions and features in accordance with the equipment manufacturer's published instructions for correct operation in conformance with the applicable sections of Chapter 26.
			-	-
			-	-
-	(2) Digital alarm communicator receiver (DACR)	X	Monthly	Disconnect each transmission means in turn from the DACR, and verify audible and visual annunciation of a trouble signal in the supervising station.
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(3) Digital alarm radio receiver (DARR)	X	Monthly	Cause the following conditions of all DARRs on all subsidiary and repeater station receiving equipment. Verify receipt at the supervising station of correct signals for each of the following conditions:
			-	-
			-	-
			-	-
			-	-
			-	-
-	(4) McCulloh systems	X	Monthly	Test and record the current on each circuit at each supervising and subsidiary station under the following conditions:
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
			-	-
			-	-
			-	-
			-	-
-	(5) Radio alarm supervising station receiver (RASSR) and radio alarm repeater station receiver (RARSR)	X	Monthly	Cause each of the following conditions at each of the supervising or subsidiary stations and all repeater station radio transmitting and receiving equipment; verify receipt of correct signals at the supervising station:
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
-	(6) Private microwave radio systems	X	Monthly	Cause each of the following conditions at each of the supervising or subsidiary stations and all repeater station radio transmitting and receiving equipment; verify receipt of correct signals at the supervising station:
			-	-
			-	-
			-	-
			-	-
-	(7) Performance-based technologies	X	Monthly	Perform tests to ensure the monitoring of integrity of the transmission technology and technology path. Where a single communications path is used, disconnect the communication path. Verify that failure of the path is annunciated at the supervising station within 60 minutes of the failure (within 5 minutes for communication equipment installed prior to adoption of the 2013 edition of *NFPA 72*). Restore the communication path. Where multiple

	-	Component	Initial Acceptance	Periodic Frequency	Method
					communication paths are used, disconnect both communication paths and confirm that failure of the path is annunciated at the supervising station within not more than 6 hours of the failure (within 24 hours for communication equipment installed prior to adoption of the 2013 edition of *NFPA 72*). Restore both communication paths.
28.	Public emergency alarm reporting system transmission equipment	-	-	-	
	-	(1) Publicly accessible alarm box	X	Semiannually	Actuate publicly accessible initiating device(s) and verify receipt of not less than three complete rounds of signal impulses. Perform this test under normal circuit conditions. If the device is equipped for open circuit operation (ground return), test it in this condition as one of the semiannual tests.
	-	(2) Auxiliary box	X	Annually	Test each initiating circuit of the auxiliary box by actuation of a protected premises initiating device connected to that circuit. Verify receipt of not less than three complete rounds of signal impulses.
	-	(3) Master box	-	-	-
	-	(a) Manual operation	X	Semiannually	Perform the tests prescribed for 28(1).
	-	(b) Auxiliary operation	X	Annually	Perform the tests prescribed for 28(2).

-	Component	Initial Acceptance	Periodic Frequency	Method
29.	Low-power radio (wireless systems)	X	N/A	The following procedures describe additional acceptance and reacceptance test methods to verify wireless protection system operation:

-	Component	Initial Acceptance	Periodic Frequency	Method
-			-	-
-			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
30. Mass notification systems	-	-	-	
-	(1) Functions	X	Annually	~~At a minimum,~~ ~~test~~ Test control ~~unit~~ equipment to verify correct receipt of alarm, supervisory, and trouble signals (inputs); operation of evacuation signals

-	Component	Initial Acceptance	Periodic Frequency	Method
				and auxiliary functions (outputs); circuit supervision, including detection of open circuits and ground faults; and power supply supervision for detection of loss of ac power and disconnection of secondary batteries.
-	(2) Fuses	X	Annually	Verify the rating and supervision.
-	(3) Interfaced equipment	X	Annually	Verify integrity of single or multiple circuits providing interface between two or more control units. Test interfaced equipment connections by operating or simulating operation of the equipment being supervised. Verify signals required to be transmitted at the control unit.
-	(4) Lamps and LEDs	X	Annually	Illuminate lamps and LEDs.
-	(5) Primary (main) power supply	X	Annually	Disconnect all secondary (standby) power and test under maximum load, including all alarm appliances requiring simultaneous operation. Reconnect all secondary (standby) power at end of test. For redundant power supplies, test each separately.
-	(6) Audible textual notification appliances (loudspeakers and other appliances to convey voice messages)	X	Annually	Measure sound pressure level with a sound level meter meeting ANSI/ASAS1.4/Part 1, *Electroacoustics — Sound Level Meters — Part 1:*

-	Component	Initial Acceptance	Periodic Frequency	Method
				Specifications, Type 2 requirements. Measure and record levels throughout protected area. Set the sound level meter in accordance with ANSI/ASA S3.41, *Audible Emergency Evacuation (E2) and Evacuation Signals with Relocation Instructions (ESRI),* using the time-weighted characteristic F (FAST). Record the maximum output when the audible emergency evacuation signal is on.
			-	-
-	(7) Visual	X	Annually	Perform test in accordance with manufacturer's published instructions. Verify appliance locations to be per approved layout and confirm that no floor plan changes affect the approved layout. Verify the candela rating or method of candela control marking on each visual appliance and rating when reported by the FACU agrees with the approved drawings. Confirm that each appliance flashes.
-	(8) Control unit functions and no diagnostic failures are indicated	X	Annually	Review event log file and verify that the correct events were logged. Review system diagnostic log file; correct deficiencies noted in file. Delete unneeded

-	Component	Initial Acceptance	Periodic Frequency	Method
				log files. Delete unneeded error files. Verify that sufficient free disk space is available. Verify unobstructed flow of cooling air is available. Change/clean filters, cooling fans, and intake vents.
-	(9) Control unit reset	X	Annually	Power down the central control unit computer and restart it.
-	(10) Control unit security	X	Annually	If remote control software is loaded onto the system, verify that it is disabled to prevent unauthorized system access.
-	(11) Audible/visual functional test	X	Annually	Send out an alert to a diverse set of predesignated receiving devices and confirm receipt. Include at least one of each type of receiving device.
-	(12) Software backup	X	Annually	Make full system software backup. Rotate backups based on accepted practice at site.
-	(13) Secondary power test	X	Annually	Disconnect ac power. Verify the ac power failure alarm status on central control unit. With ac power disconnected, verify battery voltage under load.
-	(14) Wireless signals	X	Annually	Check forward/reflected radio power is within specifications.
-	(15) Antenna	X	Annually	Check forward/reflected radio power is within specifications. Verify solid electrical connections with no observable corrosion.

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(16) Transceivers	X	Annually	Verify proper operation and mounting is not compromised.

[a]Some transmission equipment (such as, but not limited to, cable modems, fiber-optic interface nodes, and VoIP interfaces) are typically powered by the building's electrical system using a secondary (standby) power supply that does not meet the requirements of this Code. This is intended to ensure that the testing authority verifies full secondary (standby) power as required by Chapter 10. Additionally, refer to Table 14.4.3.2, items 7 through 9, for secondary (standby) power supply testing.

[b]The automatic transmission of the check-in (handshake) signal can take up to 60 minutes to occur.

[c]See Table 14.4.3.2, Item 4(1) for the testing of transmission equipment.

[d]The battery tests in Table 14.4.3.2, Item 9, are based on VRLA batteries and it is the intent that the tests specified in (1) through (4) be performed in order. FACU automated load testing of VRLA batteries in accordance with Table 14.4.3.2, Item 9(5), with record of ambient temperature is an acceptable alternative to prescriptive manual methods using test equipment. For other secondary battery types, refer to the battery manufacturer’s published instructions or IEEE 450, *Recommended Practice for Maintenance, Testing, and Replacement of Vented Lead-Acid Batteries for Stationary Applications*, for vented lead-acid batteries, and IEEE 1106, *Recommended Practice for Installation, Maintenance, Testing, and Replacement of Vented Nickel-Cadmium Batteries for Stationary Applications*, for nickel-cadmium batteries.

[e]If the charger is adjustable, adjust the output voltage to 2.265 volts per cell ±0.015 volts at 77°F (25°C) or as specified by the alarm equipment manufacturer.

[f]See A.14.4.3.2 Item 9(4). A load test per Item 9(5) is permitted in lieu of an ohmic test.

[g]See A.14.4.3.2 Item 9(5).

[h]The voltmeter sensitivity has been changed from 1000 ohms per volt to 100 ohms per volt so that the false ground readings (caused by induced voltages) are minimized.

[i]Initiating devices such as smoke detectors used for elevator recall, closing dampers, or releasing doors held in the open position that are permitted by the Code *(see9.6.3 of NFPA 101)* to initiate supervisory signals at the fire alarm control unit (FACU) should be tested at the same frequency (annual) as those devices when they are generating an alarm signal. They are not supervisory devices, but they initiate a supervisory signal at the FACU.

[j]Fusible thermal link detectors are commonly used to close fire doors and fire dampers electrically connected to the fire alarm control unit. They are actuated by the presence of external heat, which causes a solder element in the link to fuse, or by an electric thermal device, which, when energized, generates heat within the body of the link, causing the link to fuse and separate.

[k]Note, it is customary for the manufacturer of the smoke detector to test a particular product from an aerosol provider to determine acceptability for use in smoke entry testing of their smoke detector/smoke alarm. Magnets are not acceptable for smoke entry tests.

[l] There are some detectors that use magnets as a manufacturer's calibrated sensitivity test instrument.

[m]For example, it might not be possible to individually test the heat sensor in a thermally enhanced smoke detector.

[n]Manufacturer's published instructions should be consulted to ensure a proper operational test.

No suppression gas or agent is expected to be discharged during the test of the solenoid. *See Test Plan of 14.2.10*.

[o]A monitor module installed on an interface device is not considered a supervisory device and therefore not subject to the quarterly testing frequency requirement. Test frequencies for interface devices should be in accordance with the applicable standard. For example, fire pump controller alarms such as phase reversal are required to be tested annually. If a monitor module is installed to identify phase reversal on the fire alarm control unit, it is not necessary to test for phase reversal four times a year.

[p]Chapter 18 would require 15 dB over average ambient sound for public mode spaces. Sometimes the ambient sound levels are different from what the design was based upon. Private operating mode would require 10 dB over average ambient at the location of the device.

[q]Where building, system, or occupancy changes have been observed, the owner should be notified of the changes. New devices might need to be installed and tested per the initial acceptance testing criteria.

[r]See A.14.4.3.2 and Table 14.4.3.2, Item 24.

Additional Proposed Changes

File Name	Description	Approved
NFPA_72_BS_SB_14_4_3_2_comments.docx		

Statement of Problem and Substantiation for Public Input

Deleted non enforceable language.

Submitter Information Verification

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Submittal Date: Fri May 27 11:27:38 EDT 2022
Committee: SIG-TMS

Committee Statement

Resolution: The Technical Committee does not agree with the submitter as the presence or absence of this language does not appear to have any effect on the test method either way.

Public Input No. 473-NFPA 72-2022 [Section No. 14.4.3.2]

14.4.3.2*

Systems and associated equipment shall be tested according to Table 14.4.3.2.

Table 14.4.3.2 Testing

	Component	Initial Acceptance	Periodic Frequency	Method
1. All equipment	X			See Table 14.3.1.
2. Control unit				
	(1) Functions	X	Annually	Verify correct receipt of alarm, supervisory, and trouble signals (inputs); operation of evacuation signals and auxiliary functions (outputs); circuit supervision, including detection of open circuits and ground faults; and power supply supervision for detection of loss of ac power and disconnection of secondary batteries.
	(2) Fuses	X	Annually	Verify rating and supervision.
	(3) Interfaced equipment	X	Annually	Verify integrity of single or multiple circuits providing interface between two or more control units. Test interfaced equipment connections by operating or simulating operation of the equipment being supervised. Verify signals required to be transmitted at the control unit.
	(4) Lamps and LEDs	X	Annually	Illuminate lamps and LEDs.
	(5) Primary (main) power supply	X	Annually	Disconnect all secondary (standby) power and test under maximum load, including all alarm appliances requiring simultaneous operation. Reconnect all secondary (standby) power at end of test. Test redundant power supplies separately.

-	Component	Initial Acceptance	Periodic Frequency	Method
3.	Alarm control unit trouble signals	-	-	-
-	(1) Audible and visual	X	Annually	Verify operation of control unit trouble signals. Verify ring-back feature for systems using a trouble-silencing switch that requires resetting.
-	(2) Disconnect switches	X	Annually	If control unit has disconnect or isolating switches, verify performance of intended function of each switch. Verify receipt of trouble signal when a supervised function is disconnected.
-	(3) Ground-fault monitoring circuit	X	Annually	If the system has a ground detection feature, verify the occurrence of ground-fault indication whenever any installation conductor is grounded.
-	(4) Transmission of signals to off-premises location	X	Annually	Actuate an initiating device and verify receipt of alarm signal at the off-premises location.
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
4. Supervising station alarm systems — transmission equipment	-	-	-	
-	(1) All equipment	X	Annually	[a]Test all system functions and features in accordance with the equipment manufacturer's published instructions for correct operation in conformance with the applicable sections of Chapter 26.
			-	-
			-	-
-	(2) Digital alarm communicator transmitter (DACT)	X	Annually	Except for DACTs installed prior to adoption of the 2013 edition of NFPA 72 that are connected to a telephone line

-	Component	Initial Acceptance	Periodic Frequency	Method
				(number) that is also supervised for adverse conditions by a derived local channel, ensure connection of the DACT to two separate means of transmission.
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(3) Digital alarm radio transmitter (DART)	X	Annually	Disconnect the primary telephone line. Verify transmission of a trouble signal to the supervising station by the DART occurs within 4 minutes.
-	(4) McCulloh transmitter	X	Annually	Actuate initiating device. Verify production of not less than three complete rounds of not less than three signal impulses each by the McCulloh transmitter.

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			(2) Ground	
			-	-
			-	-
			-	-
			-	-
			(2) Ground	
			-	-
-	(5) Radio alarm transmitter (RAT)	X	Annually	Cause a fault between elements of the transmitting equipment. Verify indication of the fault at the protected premises, or transmission of trouble signal to the supervising station.
-	(6) Performance-based technologies	X	Annually	Perform tests to ensure the monitoring of integrity of the transmission technology and technology path. Where shared communications equipment is used as permitted by 26.6.3.12, provided secondary (standby)

-	Component	Initial Acceptance	Periodic Frequency	Method
				power sources shall be tested in accordance with Table 14.4.3.2, item 7, 8, or 9, as applicable.

-	Component	Initial Acceptance	Periodic Frequency	Method
5.	Emergency communications equipment	-	-	-
-	(1) Amplifier/tone generators	X	Annually	Verify correct switching and operation of backup equipment.
-	(2) Call-in signal silence	X	Annually	Operate/function and verify receipt of correct visual and audible signals at control unit.
-	(3) Off-hook indicator (ring down)	X	Annually	Install phone set or remove phone from hook and verify receipt of signal at control unit.
-	(4) Phone jacks	X	Annually	Visually inspect phone jack and initiate communications path through jack.
-	(5) Phone set	X	Annually	Actuate each phone set and verify correct operation.
-	(6) System performance	X	Annually	Operate the system with a minimum of any five handsets simultaneously. Verify voice quality and clarity.
6.	Engine-driven generator	X	Monthly	If an engine-driven generator dedicated to the system is used as a required power source, verify operation of the generator and transfer switch in accordance with NFPA 110 by the building owner.
7.	Emergency power supply system/stored-emergency power supply system (EPSS/SEPSS)	X	Annually	If an EPSS/SEPSS dedicated to the system is used as a required power source, verify by the building owner operation of the

-	Component	Initial Acceptance	Periodic Frequency	Method	
			EPSS/SEPSS in accordance with NFPA 111.		
8.	Secondary (standby) power supply[c]	X	Annually	Disconnect all primary (main) power supplies and verify the occurrence of required trouble indication for loss of primary power. Measure or verify the system's standby and alarm current demand using the equipment manufacturer's data and verify the battery's rated capacity exceeds the system's power demand, including the safety margin. Operate general alarm systems a minimum of 5 minutes and emergency voice communications systems for a minimum of 15 minutes. Reconnect primary (main) power supply at end of test.	
9.	VRLA battery and charger[d]	-	-		Prior t conduc any ba testing by the conduc test, th system softwa stored volatile memo protec loss.

-		Component	Initial Acceptance	Periodic Frequency	Method
-		(1) Temperature test	X	Semiannually	Upon initially opening the cabinet door, measure the internal ambient temperature of the enclosure. Measure the temperature of each battery cell/unit at the negative terminal with an infrared thermometer. Replace any battery cell/unit if its temperature is greater than 18°F (10°C) above the measured internal ambient temperature of the enclosure.
-		(2) Charger test[e]	X	Semiannually	With the battery fully charged and connected to the charger, measure the voltage across the battery with a voltmeter. Verify the voltage is within the battery/alarm equipment manufacturer's recommendations. If the voltage is outside of the specified limits, either adjust the charger to within limits or replace the charger.
-		(3) Cell/Unit voltage test	X	Semiannually	With the battery fully charged and connected to the charger, measure the voltage of each cell/unit with a voltmeter. Replace the battery when any cell/unit measures a voltage less than 13.26 volts.
-		(4) Ohmic test[f]	X	N/A	When the battery is installed, establish a baseline ohmic value for each battery cell/unit or where available use baseline ohmic values provided by the battery or test equipment

-	Component	Initial Acceptance	Periodic Frequency	Method	
				manufacturer. In either case record the base line ohmic value on each battery cell/unit.	
		-	-	-	Semia
-	(5) Replacement/Load test[g]	-		3 years	Replac battery condu test of battery capaci test th based

-	Component	Initial Acceptance	Periodic Frequency	Method	
					manuf specifi for a d rate of or mor applyi curren indicat the se hourly discha contin until th termin voltag decrea the en voltag specifi the manuf Recor test du and ca the ba capaci includi adjust ambie tempe Repla battery capaci less th equal or at th sched interva battery capaci less th
10.	Public emergency alarm reporting system — wired system	X	Daily	Manual tests of the power supply for public reporting circuits shall be made and recorded at least once during each 24-hour period. Such tests shall include the following: - -	

-	Component	Initial Acceptance	Periodic Frequency	Method

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
11.	Remote annunciators	X	Annually	Verify the correct operation and identification of annunciators. If provided, verify the correct operation of annunciator under a fault condition.
12.	Reserved	-	-	-
13.	Reserved	-	-	-
14.	Wireless communications	X	Annually	Test per the manufacturer's published instructions.
15.	Conductors — metallic	-	-	-
-	(1) Stray voltage	X	N/A	Test all installation conductors with a volt/ohmmeter to verify that there are no stray (unwanted) voltages between installation conductors or between installation conductors and ground. Verify the maximum allowable stray voltage does not exceed 1 volt ac/dc, unless a different threshold is specified in the manufacturer's published instructions for the installed equipment.
-	(2) Ground faults	X	N/A	Test all installation conductors, other than those intentionally and permanently grounded, for isolation from ground per the installed equipment manufacturer's published instructions.
-	(3) Short-circuit faults	X	N/A	Test all installation conductors, other than those intentionally connected together, for conductor-to-

-	Component	Initial Acceptance	Periodic Frequency	Method	
				conductor isolation per the manufacturer's published instructions for the installed equipment. Also test these same circuits conductor-to-ground.	
-	(4) Loop resistance	X	N/A	With each initiating and indicating circuit installation conductor pair short-circuited at the far end, measure and record the resistance of each circuit. Verify that the loop resistance does not exceed the limits specified in the manufacturer's published instructions for the installed equipment.	
-	(5) Circuit integrity	X	N/A	For initial and reacceptance testing, confirm the introduction of a fault in any circuit monitored for integrity results in a trouble indication at the fire alarm control unit. Open one connection at not less than 10 percent of the initiating devices, notification appliances and controlled devices on every initiating device circuit, notification appliance circuit, and signaling line circuit. Confirm all circuits perform as indicated in Sections 23.5, 23.6, and 23.7.	
	-	-	N/A	Annually	For pe testing each i device notifica applia circuit, signali circuit correc

-	Component	Initial Acceptance	Periodic Frequency	Method	
					indicat the co unit. C all circ perfor indicat Sectio 23.6, a 23.7.
16. Nonmetallic pathways	-	-	-		
-	(1) Optical fiber cables	X	N/A	Test the transmission characteristics of optical fibers by the use of an optical power meter or by an optical time domain reflectometer used to measure the relative power loss of the line. Test result data must meet or exceed ANSI/TIA 568.3, *Optical Fiber Cabling and Components Standard*, related to fiber-optic lines and connection/splice losses and the control unit manufacturer's published specifications.	
-	(2) Circuit integrity	X	N/A	For initial and reacceptance testing, confirm the introduction of a fault in any circuit monitored for integrity results in a trouble indication at the fire alarm control unit. Open one connection at not less than 10 percent of the initiating devices, notification appliances, and controlled devices on every initiating device circuit, notification appliance circuit, and signaling line circuit. Confirm all circuits perform as indicated in Sections 23.5, 23.6, and 23.7.	

	Component	Initial Acceptance	Periodic Frequency	Method	
	-	-	N/A	Annually	For pe testing each i device notifica applia circuit, signali circuit correc indicat the co unit. C all circ perfor indicat Sectio 23.6, a 23.7.
17.	Initiating devices[i]	-	-	-	
-	(1) Electromechanical releasing device	-	-	-	
-	(a) Nonrestorable-type link	X	Annually	Verify correct operation by removal of the fusible link and operation of the associated device.	
-	(b) Restorable-type link[j]	X	Annually	Verify correct operation by removal of the fusible link and operation of the associated device.	
-	(2) Fire extinguishing system(s) or suppression system(s) alarm switch	X	Annually	Operate the switch mechanically or electrically and verify receipt of signal by the fire alarm control unit.	
-	(3) Fire–gas and other detectors	X	Annually	Test fire–gas detectors and other fire detectors as prescribed by the manufacturer and as necessary for the application.	
-	(4) Heat detectors	-	-	-	
-	(a) Fixed-temperature, rate-of-rise, rate of compensation, restorable line, spot type	X	Annually (see 14.4.4.5)	Perform heat test with a listed and labeled heat source or in accordance with the manufacturer's published instructions.	

		Component	Initial Acceptance	Periodic Frequency	Method
		(excluding pneumatic tube type)			Assure that the test method for the installed equipment does not damage the nonrestorable fixed-temperature element of a combination rate-of-rise/fixed-temperature element detector.
		(b) Fixed-temperature, nonrestorable line type	X	Annually	Do not perform heat test. Test functionality mechanically and electrically. Measure and record loop resistance. Investigate changes from acceptance test.
		(c) Fixed-temperature, nonrestorable spot type	X	See Method	After 15 years from initial installation, replace all devices or have 2 detectors per 100 laboratory tested. Replace the 2 detectors with new devices. If a failure occurs on any of the detectors removed, remove and test additional detectors to determine either a general problem involving faulty detectors or a localized problem involving 1 or 2 defective detectors.
		(d) Restorable line type, pneumatic tube only	X	Annually	Perform heat tests (where test chambers are in circuit), with a listed and labeled heat source or in accordance with the

-	Component	Initial Acceptance	Periodic Frequency	Method
				manufacturer's published instructions of the detector or conduct a test with pressure pump.
-	(e) Single- and multiple-station heat alarms	X	Annually	Conduct functional tests according to manufacturer's published instructions. Do not test nonrestorable heat detectors with heat.
-	(5) Manual fire alarm boxes	X	Annually	Operate manual fire alarm boxes per the manufacturer's published instructions. Test both key-operated presignal and general alarm manual fire alarm boxes.
-	(6) Radiant energy fire detectors	X	Semiannually	Test flame detectors and spark/ember detectors in accordance with the manufacturer's published instructions to determine that each detector is operative.
			-	-
			-	-
			-	-
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
-	(7) Smoke detectors — functional test	-	-	-
-	(a) In other than one- and two-family dwellings, system detectors	X	Annually	[k]Test smoke detectors in place to ensure smoke entry into the sensing chamber and an alarm response. Use smoke or a listed and labeled product acceptable to the manufacturer or in accordance with their published instructions. Other methods listed in the manufacturer's published instructions that ensure smoke entry from the protected area, through the vents, into

-	Component	Initial Acceptance	Periodic Frequency	Method
				the sensing chamber can be used.
-	(b) Single- and multiple-station smoke alarms connected to protected premises systems	X	Annually	Perform a functional test on all single- and multiple-station smoke alarms connected to a protected premises fire alarm system by putting the smoke alarm into an alarm condition.
-	(c) System smoke detectors used in one- and two-family dwellings	X	Annually	Conduct functional tests according to manufacturer's published instructions.
-	(d) Air sampling	X	Annually	Test with smoke or a listed and labeled product acceptable to the manufacturer or in accordance with their published instructions. In the absence of an automatic, listed airflow supervision feature, test from the end sampling port or point on each pipe run and verify airflow through all other ports or points.
-	(e) Duct type	X	Annually	In addition to the testing required in Table 14.4.3.2(17)(7)(a) and Table 14.4.3.2(17)(8), test duct smoke detectors that use sampling tubes to ensure that they will properly sample the airstream in the duct using a method acceptable to the manufacturer or in accordance with their published instructions.
-	(f) Projected beam type	X	Annually	Test the detector by introducing smoke, other aerosol, or an optical filter into the beam path.
-	(g) Smoke detector with built-in thermal element	X	Annually	Operate both portions of the detector independently as described for the

-	Component	Initial Acceptance	Periodic Frequency	Method
				respective devices.
-	(h) Smoke detectors with control output functions	X	Annually	Verify that the control capability remains operable even if all of the initiating devices connected to the same initiating device circuit or signaling line circuit are in an alarm state.
-	(8) Smoke detectors — sensitivity testing	-	-	-
-	In other than one- and two-family dwellings, system detectors	N/A	See 14.4.4.3	Perform any of the following tests to ensure that each smoke detector is within its listed and marked sensitivity range:
			-	-
			-	-
			-	-
			-	-
			-	-
-	(9) Carbon monoxide detectors/carbon	-	-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
	monoxide alarms connected to protected premises systems			
-	(a) CO entry test	X	Annually	Test the devices in place to ensure CO entry to the sensing chamber by introduction through the vents, to the sensing chamber of listed and labeled product acceptable to the manufacturer or in accordance with manufacturer's published instructions
-	(b) Air sampling	X	Annually	Per test methods documented in the manufacturer's published instructions, verify detector alarm response through the end sampling port on each pipe run; verify airflow through all other ports as well.
-	(c) Duct type	X	Annually	Test or inspect air duct detectors to ensure that the device will sample the airstream in accordance with the manufacturer's published instructions.
-	(d) CO detector with control output functions	X	Annually	Within each protected space, verify that the control capability remains operable even if all of the initiating devices connected to the same initiating device circuit or signaling line circuit are in an alarm state.
-	(10) Initiating devices, supervisory	-	-	-
-	(a) Control valve switch	X	Semiannual	Operate valve and verify signal receipt to be within the first two revolutions of the handwheel or within one-fifth of the travel distance, or per the

-	Component	Initial Acceptance	Periodic Frequency	Method
				manufacturer's published instructions. Continue to cycle outside stem and yoke valves and verify switch does not reset during full travel of the valve stem.
-	(b) High- or low-air pressure switch	X	Annually	Operate switch and verify receipt of signal is obtained where the required pressure is increased or decreased a maximum 10 psi (70 kPa) from the required pressure level or in accordance with manufacturer's published instructions.
-	(c) Steam pressure	X	Annually	Operate switch and verify receipt of signal is obtained before pressure decreases to 110 percent of the minimum operating pressure of the steam-operated equipment.
-	(d) Pressure supervisory devices for other sources	X	Annually	Operate switch and verify receipt of signal is obtained where the required pressure is increased or decreased from the normal operating pressure by an amount specified in approved design documents.
-	(e) Room temperature switch	X	Annually	Operate switch and verify receipt of signal to indicate the decrease in room temperature to 40°F (4.4°C) and its restoration to above 40°F (4.4°C).
-	(f) Water level switch	X	Annually	Operate switch and verify receipt of signal indicating the water level raised or lowered a maximum 3 in. (70 mm) from the required level within a pressure tank, or a

-	Component	Initial Acceptance	Periodic Frequency	Method
				maximum 12 in. (300 mm) from the required level of a nonpressure tank. Also verify its restoral to required level.
-	(g) Water temperature switch	X	Annually	Operate switch and verify receipt of signal to indicate the decrease in water temperature to 40°F (4.4°C) and its restoration to above 40°F (4.4°C).
-	(11) Mechanical, electrosonic, or pressure-type waterflow device	X	Semiannually	Water shall be flowed through an inspector's test connection indicating the flow of water equal to that from a single sprinkler of the smallest orifice size installed in the system or other listed and approved waterflow switch test methods for wet-pipe systems, or an alarm test bypass connection for dry-pipe, pre-action, or deluge systems in accordance with NFPA 25.
-	(12) Multi-sensor fire detector or multi-criteria fire detector or combination fire detector	X	Annually	1. Test each detector in accordance with the manufacturer’s published instructions. Test each of the sensors present within the detector (e.g., smoke/heat/CO, etc.) independently for the specific detection principle, regardless of the configuration status at the time of testing, or individual sensors together if the technology allows individual sensor responses to be verified, or where sensors cannot be tested individually, test the primary sensor.[m]

	Component	Initial Acceptance	Periodic Frequency	Method
18.	Special hazard equipment			
	(1) Abort switch (dead-man type)	X	Annually	Operate abort switch and verify correct sequence and operation.

-		Component	Initial Acceptance	Periodic Frequency	Method
-		(2) Abort switch (recycle type)	X	Annually	Operate abort switch and verify development of correct matrix with each sensor operated.
-		(3) Abort switch (special type)	X	Annually	Operate abort switch and verify correct sequence and operation in accordance with authority having jurisdiction. Observe sequencing as specified on as-built drawings or in system owner's manual.
-		(4) Cross-zone detection circuit	X	Annually	Operate one sensor or detector on each zone. Verify occurrence of correct sequence with operation of first zone and then with operation of second zone.
-		(5) Matrix-type circuit	X	Annually	Operate all sensors in system. Verify development of correct matrix with each sensor operated.
-		(6) Release solenoid circuit[n]	X	Annually	Verify operation of solenoid.
-		(7) Squibb release circuit	X	Annually	Use AGI flashbulb or other test light approved by the manufacturer. Verify operation of flashbulb or light.
-		(8) Verified, sequential, or counting zone circuit	X	Annually	Operate required sensors at a minimum of four locations in circuit. Verify correct sequence with both the first and second detector in alarm.
-		(9) All above devices or circuits or combinations thereof	X	Annually	Verify supervision of circuits by creating an open circuit.
19.	Combination systems	-	-	-	

	-	Component	Initial Acceptance	Periodic Frequency	Method
	-	(1) Fire extinguisher electronic monitoring device/system	X	Annually	Test communication between the device connecting the fire extinguisher electronic monitoring device/system and the fire alarm control unit to ensure proper signals are received at the fire alarm control unit and remote annunciator(s) if applicable.
	-	(2) Carbon monoxide device/system	X	Annually	Test communication between the device connecting the carbon monoxide device/system and the fire alarm control unit to ensure proper signals are received at the fire alarm control unit and remote annunciator(s) if applicable.
20.	Interface equipment[o]	X	See 14.4.4.4		Test interface equipment connections by operating or simulating the equipment being supervised. Verify signals required to be transmitted are received at the control unit. Test frequency for interface equipment is the same as the frequency required by the applicable NFPA standard(s) for the equipment being supervised.
21.	Guard's tour equipment	X	Annually		Test the device in accordance with the manufacturer's published instructions.

-	Component	Initial Acceptance	Periodic Frequency	Method	
22. Alarm notification appliances	-	-	-		
-	(1) Audible[p]	X	N/A	For initial and reacceptance testing, measure sound pressure levels for alert tone signals and evacuation signal tones with a sound level meter meeting ANSI/ASAS1.4/Part 1, *Electroacoustics — Sound Level Meters — Part 1: Specifications,* Type 2 requirements. Measure sound pressure levels to determine if they are in compliance with Chapter 18 and the required performance, as documented per 7.3.4. Set the sound level meter in accordance with ANSI/ASA S3.41, *Audible Emergency Evacuation (E2) and Evacuation Signals with Relocation Instructions (ESRI),* using the time-weighted characteristic F (FAST).	
	-	-	N/A	Annually	[q]For p testing the op of the notifica applia
-	(2) Audible textual notification appliances (loudspeakers and other appliances to convey voice messages)	X	N/A	For initial and reacceptance testing, measure sound pressure levels for signals with a sound level meter meeting ANSI/ASAS1.4/Part 1, *Electroacoustics — Sound Level Meters — Part 1: Specifications,* Type 2 requirements. Measure sound	

-	Component	Initial Acceptance	Periodic Frequency	Method	
				pressure levels throughout the protected area to determine if they are in compliance with Chapter 18 and the required performance, as documented per 7.3.4. Set the sound level meter in accordance with ANSI/ASA S3.41, *Audible Emergency Evacuation (E2) and Evacuation Signals with Relocation Instructions (ESRI),* using the time-weighted characteristic F (FAST).	
			-	-	
	-	-	N/A	Annually	[q]For p testing the op of the notifica applia
-	(3) Visual	X	N/A	Perform initial and reacceptance testing in accordance with the manufacturer's published instructions. Verify appliance locations to be per approved layout and confirm that no floor plan changes affect the approved layout. Verify the candela rating or method of candela control marking on each visual appliance and rating when reported by the FACU agrees with the approved drawings. Confirm that each appliance flashes.	

		Component	Initial Acceptance	Periodic Frequency	Method	
	-	-	-	N/A	Annually	For pe testing that ea applia flashes
23.	Exit marking audible notification appliance	X	Annually	Perform tests in accordance with manufacturer's published instructions.		
24.	Emergency control functions[r]	X	Annually	For initial, reacceptance, and periodic testing, verify emergency control function interface device activation. Where an emergency control function interface device is disabled or disconnected during initiating device testing, verify that the disabled or disconnected emergency control function interface device has been properly restored, including electromagnetic devices used for door releasing services as part of a fire alarm system.		
25.	Two-way emergency communications systems	X	Annually	Use the manufacturer’s published instructions and the as-built drawings provided by the system supplier to verify correct operation after the initial testing phase has been		

-	Component	Initial Acceptance	Periodic Frequency	Method
			performed by the supplier or by the supplier's designated representative.	
			-	-
			-	-
			-	-
			-	-
			-	-
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
26. Special procedures	-	-	-	
-	(1) Alarm verification	X	Annually	Verify time delay and alarm response for smoke detector circuits identified as having alarm verification.
-	(2) Multiplex systems	X	Annually	Verify communications between sending and receiving units under both primary and secondary power.
			-	-
			-	-
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
27.	Supervising station alarm systems — receiving equipment	-	-	-
-	(1) All equipment	X	Monthly	Perform tests on all system functions and features in accordance with the equipment manufacturer's published instructions for correct operation in conformance with the applicable sections of Chapter 26.
			-	-
			-	-
-	(2) Digital alarm communicator receiver (DACR)	X	Monthly	Disconnect each transmission means in turn from the DACR, and verify audible and visual annunciation of a trouble signal in the supervising station.
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(3) Digital alarm radio receiver (DARR)	X	Monthly	Cause the following conditions of all DARRs on all subsidiary and repeater station receiving equipment. Verify receipt at the supervising station of correct signals for each of the following conditions:
			-	-
			-	-
			-	-
			-	-
			-	-
-	(4) McCulloh systems	X	Monthly	Test and record the current on each circuit at each supervising and subsidiary station under the following conditions:
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
			-	-
			-	-
			-	-
			-	-
-	(5) Radio alarm supervising station receiver (RASSR) and radio alarm repeater station receiver (RARSR)	X	Monthly	Cause each of the following conditions at each of the supervising or subsidiary stations and all repeater station radio transmitting and receiving equipment; verify receipt of correct signals at the supervising station:
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
-	(6) Private microwave radio systems	X	Monthly	Cause each of the following conditions at each of the supervising or subsidiary stations and all repeater station radio transmitting and receiving equipment; verify receipt of correct signals at the supervising station:
			-	-
			-	-
			-	-
			-	-
-	(7) Performance-based technologies	X	Monthly	Perform tests to ensure the monitoring of integrity of the transmission technology and technology path. Where a single communications path is used, disconnect the communication path. Verify that failure of the path is annunciated at the supervising station within 60 minutes of the failure (within 5 minutes for communication equipment installed prior to adoption of the 2013 edition of *NFPA 72*). Restore the communication path. Where multiple

	-	Component	Initial Acceptance	Periodic Frequency	Method
					communication paths are used, disconnect both communication paths and confirm that failure of the path is annunciated at the supervising station within not more than 6 hours of the failure (within 24 hours for communication equipment installed prior to adoption of the 2013 edition of *NFPA 72*). Restore both communication paths.
28.	Public emergency alarm reporting system transmission equipment	-	-	-	
	-	(1) Publicly accessible alarm box	X	Semiannually	Actuate publicly accessible initiating device(s) and verify receipt of not less than three complete rounds of signal impulses. Perform this test under normal circuit conditions. If the device is equipped for open circuit operation (ground return), test it in this condition as one of the semiannual tests.
	-	(2) Auxiliary box	X	Annually	Test each initiating circuit of the auxiliary box by actuation of a protected premises initiating device connected to that circuit. Verify receipt of not less than three complete rounds of signal impulses.
	-	(3) Master box	-	-	-
	-	(a) Manual operation	X	Semiannually	Perform the tests prescribed for 28(1).
	-	(b) Auxiliary operation	X	Annually	Perform the tests prescribed for 28(2).

-	Component	Initial Acceptance	Periodic Frequency	Method
29.	Low-power radio (wireless systems)	X	N/A	The following procedures describe additional acceptance and reacceptance test methods to verify wireless protection system operation:

-	Component	Initial Acceptance	Periodic Frequency	Method

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
30. Mass notification systems	-	-	-	
-	(1) Functions	X	Annually	At a minimum, test control unit to verify correct receipt of alarm, supervisory, and trouble signals (inputs); operation of evacuation signals and auxiliary functions (outputs); circuit supervision, including detection of open circuits and ground faults; and power supply supervision for

-	Component	Initial Acceptance	Periodic Frequency	Method
				detection of loss of ac power and disconnection of secondary batteries.
-	(2) Fuses	X	Annually	Verify the rating and supervision.
-	(3) Interfaced equipment	X	Annually	Verify integrity of single or multiple circuits providing interface between two or more control units. Test interfaced equipment connections by operating or simulating operation of the equipment being supervised. Verify signals required to be transmitted at the control unit.
-	(4) Lamps and LEDs	X	Annually	Illuminate lamps and LEDs.
-	(5) Primary (main) power supply	X	Annually	Disconnect all secondary (standby) power and test under maximum load, including all alarm appliances requiring simultaneous operation. Reconnect all secondary (standby) power at end of test. For redundant power supplies, test each separately.
-	(6) Audible textual notification appliances (loudspeakers and other appliances to convey voice messages)	X	Annually	Measure sound pressure level with a sound level meter meeting ANSI/ASAS1.4/Part 1, *Electroacoustics — Sound Level Meters — Part 1: Specifications,* Type 2 requirements. Measure and record levels throughout protected area. Set the sound level meter in accordance with ANSI/ASA S3.41, *Audible Emergency Evacuation (E2) and Evacuation Signals*

-	Component	Initial Acceptance	Periodic Frequency	Method
				with Relocation Instructions (ESRI), using the time-weighted characteristic F (FAST). Record the maximum output when the audible emergency evacuation signal is on.
			-	-
-	(7) Visual	X	Annually	Perform test in accordance with manufacturer's published instructions. Verify appliance locations to be per approved layout and confirm that no floor plan changes affect the approved layout. Verify the candela rating or method of candela control marking on each visual appliance and rating when reported by the FACU agrees with the approved drawings. Confirm that each appliance flashes.
-	(8) Control unit functions and no diagnostic failures are indicated	X	Annually	Review event log file and verify that the correct events were logged. Review system diagnostic log file; correct deficiencies noted in file. Delete unneeded log files. Delete unneeded error files. Verify that sufficient free disk space is available. Verify unobstructed flow of cooling air is available. Change/clean filters, cooling fans, and intake vents.

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(9) Control unit reset	X	Annually	Power down the central control unit computer and restart it.
-	(10) Control unit security	X	Annually	If remote control software is loaded onto the system, verify that it is disabled to prevent unauthorized system access.
-	(11) Audible/visual functional test	X	Annually	Send out an alert to a diverse set of predesignated receiving devices and confirm receipt. Include at least one of each type of receiving device.
-	(12) Software backup	X	Annually	Make full system software backup. Rotate backups based on accepted practice at site.
-	(13) Secondary power test	X	Annually	Disconnect ac power. Verify the ac power failure alarm status on central control unit. With ac power disconnected, verify battery voltage under load.
-	(14) Wireless signals	X	Annually	Check forward/reflected radio power is within specifications.
-	(15) Antenna	X	Annually	Check forward/reflected radio power is within specifications. Verify solid electrical connections with no observable corrosion.
-	(16) Transceivers	X	Annually	Verify proper operation and mounting is not compromised.

Move the footnotes to the body of the code if they are enforceable or they should go into the Annex.

[a]Some transmission equipment (such as, but not limited to, cable modems, fiber-optic interface nodes, and VoIP interfaces) are typically powered by the building's electrical system using a secondary (standby) power supply that does not meet the requirements of this Code. This is intended to ensure that the testing authority verifies full secondary (standby) power as required by Chapter 10. Additionally, refer to Table 14.4.3.2, items 7 through 9, for secondary (standby)

power supply testing.

[b]The automatic transmission of the check-in (handshake) signal can take up to 60 minutes to occur.

[c]See Table 14.4.3.2, Item 4(1) for the testing of transmission equipment.

[d]The battery tests in Table 14.4.3.2, Item 9, are based on VRLA batteries and it is the intent that the tests specified in (1) through (4) be performed in order. FACU automated load testing of VRLA batteries in accordance with Table 14.4.3.2, Item 9(5), with record of ambient temperature is an acceptable alternative to prescriptive manual methods using test equipment. For other secondary battery types, refer to the battery manufacturer's published instructions or IEEE 450, *Recommended Practice for Maintenance, Testing, and Replacement of Vented Lead-Acid Batteries for Stationary Applications*, for vented lead-acid batteries, and IEEE 1106, *Recommended Practice for Installation, Maintenance, Testing, and Replacement of Vented Nickel-Cadmium Batteries for Stationary Applications*, for nickel-cadmium batteries.

[e]If the charger is adjustable, adjust the output voltage to 2.265 volts per cell ±0.015 volts at 77°F (25°C) or as specified by the alarm equipment manufacturer.

[f]See A.14.4.3.2 Item 9(4). A load test per Item 9(5) is permitted in lieu of an ohmic test.

[g]See A.14.4.3.2 Item 9(5).

[h]The voltmeter sensitivity has been changed from 1000 ohms per volt to 100 ohms per volt so that the false ground readings (caused by induced voltages) are minimized.

[i]Initiating devices such as smoke detectors used for elevator recall, closing dampers, or releasing doors held in the open position that are permitted by the Code *(see9.6.3 of NFPA 101)* to initiate supervisory signals at the fire alarm control unit (FACU) should be tested at the same frequency (annual) as those devices when they are generating an alarm signal. They are not supervisory devices, but they initiate a supervisory signal at the FACU.

[j]Fusible thermal link detectors are commonly used to close fire doors and fire dampers electrically connected to the fire alarm control unit. They are actuated by the presence of external heat, which causes a solder element in the link to fuse, or by an electric thermal device, which, when energized, generates heat within the body of the link, causing the link to fuse and separate.

[k]Note, it is customary for the manufacturer of the smoke detector to test a particular product from an aerosol provider to determine acceptability for use in smoke entry testing of their smoke detector/smoke alarm. Magnets are not acceptable for smoke entry tests.

[l] There are some detectors that use magnets as a manufacturer's calibrated sensitivity test instrument.

[m]For example, it might not be possible to individually test the heat sensor in a thermally enhanced smoke detector.

[n]Manufacturer's published instructions should be consulted to ensure a proper operational test. No suppression gas or agent is expected to be discharged during the test of the solenoid. *See Test Plan of 14.2.10*.

[o]A monitor module installed on an interface device is not considered a supervisory device and therefore not subject to the quarterly testing frequency requirement. Test frequencies for interface devices should be in accordance with the applicable standard. For example, fire pump controller alarms such as phase reversal are required to be tested annually. If a monitor module is installed to identify phase reversal on the fire alarm control unit, it is not necessary to test for phase reversal four times a year.

[p]Chapter 18 would require 15 dB over average ambient sound for public mode spaces. Sometimes the ambient sound levels are different from what the design was based upon. Private operating mode would require 10 dB over average ambient at the location of the device.

[q]Where building, system, or occupancy changes have been observed, the owner should be notified of the changes. New devices might need to be installed and tested per the initial acceptance testing criteria.

[r]See A.14.4.3.2 and Table 14.4.3.2, Item 24.

Additional Proposed Changes

File Name	Description	Approved
NFPA_72_BS_SB_14.4.3.2_comments.docx		

Statement of Problem and Substantiation for Public Input

Not many people read the footnotes and many question if they are enforceable.

Submitter Information Verification

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Submittal Date: Fri May 27 11:30:30 EDT 2022
Committee: SIG-TMS

Committee Statement

Resolution: FR-5349-NFPA 72-2022

Statement: Item 17(7)(A) - The new sentence is moved from footnote K to the table to make it more visible to the user.

Items 8 and 9, note c - Secondary batteries have become more of an issue for fire alarm systems. NFPA 72, during the last cycle, added requirements for batteries to be listed or component recognized. Chargers used today can offer so much more information, verification, testing data, etc. for the batteries connected to the system. This option allows manufacturers to have their FACUs listed to offer these functions and if a listing should be deemed equivalent to the use of battery testers. This is similar to smoke detector sensitivity testing where a FACU can provide that testing is listed for the purpose.

Items 9 (2) and 9(4), note e and note f - A task group was set up to conduct an extensive, detailed review of each table footnote and determined what could be moved into the testing table itself and what should remain as a table footnote. In accordance with the Manual of Style, mandatory language should reside in the table and not in the footnote.

Item 17(4)(c) - The sentence was revised to clarify the functional testing methods.

Item 18 - The testing of abort switches currently refers to the sequence of operation for development of and/or verification of the system sequence of operation for simple abort function. The test requirement is vague and the sequence of operation should have already been determined prior to acceptance testing. This revision clarifies the testing of an abort switch.

Items 4(6), 10, 17(11) - Manual of style does not permit requirements in tables.

Public Input No. 511-NFPA 72-2022 [Section No. 14.4.3.2]

14.4.3.2*

Systems and associated equipment shall be tested according to Table 14.4.3.2.

Table 14.4.3.2 Testing

	Component	Initial Acceptance	Periodic Frequency	Method
1. All equipment	X	-		See Table 14.3.1.
2. Control unit	-	-	-	
-	(1) Functions	X	Annually	Verify correct receipt of alarm, supervisory, and trouble signals (inputs); operation of evacuation signals and auxiliary functions (outputs); circuit supervision, including detection of open circuits and ground faults; and power supply supervision for detection of loss of ac power and disconnection of secondary batteries.
-	(2) Fuses	X	Annually	Verify rating and supervision.
-	(3) Interfaced equipment	X	Annually	Verify integrity of single or multiple circuits providing interface between two or more control units. Test interfaced equipment connections by operating or simulating operation of the equipment being supervised. Verify signals required to be transmitted at the control unit.
-	(4) Lamps and LEDs	X	Annually	Illuminate lamps and LEDs.
-	(5) Primary (main) power supply	X	Annually	Disconnect all secondary (standby) power and test under maximum load, including all alarm appliances requiring simultaneous operation. Reconnect all secondary (standby) power at end of test. Test redundant power supplies separately.

-	Component	Initial Acceptance	Periodic Frequency	Method
3.	Alarm control unit trouble signals	-	-	-
-	(1) Audible and visual	X	Annually	Verify operation of control unit trouble signals. Verify ring-back feature for systems using a trouble-silencing switch that requires resetting.
-	(2) Disconnect switches	X	Annually	If control unit has disconnect or isolating switches, verify performance of intended function of each switch. Verify receipt of trouble signal when a supervised function is disconnected.
-	(3) Ground-fault monitoring circuit	X	Annually	If the system has a ground detection feature, verify the occurrence of ground-fault indication whenever any installation conductor is grounded.
-	(4) Transmission of signals to off-premises location	X	Annually	Actuate an initiating device and verify receipt of alarm signal at the off-premises location.
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
4. Supervising station alarm systems — transmission equipment	-	-	-	
-	(1) All equipment	X	Annually	[a]Test all system functions and features in accordance with the equipment manufacturer's published instructions for correct operation in conformance with the applicable sections of Chapter 26.
			-	-
			-	-
-	(2) Digital alarm communicator transmitter (DACT)	X	Annually	Except for DACTs installed prior to adoption of the 2013 edition of NFPA 72 that are connected to a telephone line

-	Component	Initial Acceptance	Periodic Frequency	Method
				(number) that is also supervised for adverse conditions by a derived local channel, ensure connection of the DACT to two separate means of transmission.
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(3) Digital alarm radio transmitter (DART)	X	Annually	Disconnect the primary telephone line. Verify transmission of a trouble signal to the supervising station by the DART occurs within 4 minutes.
-	(4) McCulloh transmitter	X	Annually	Actuate initiating device. Verify production of not less than three complete rounds of not less than three signal impulses each by the McCulloh transmitter.

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			(2) Ground	
			-	-
			-	-
			-	-
			-	-
			(2) Ground	
			-	-
-	(5) Radio alarm transmitter (RAT)	X	Annually	Cause a fault between elements of the transmitting equipment. Verify indication of the fault at the protected premises, or transmission of trouble signal to the supervising station.
-	(6) Performance-based technologies	X	Annually	Perform tests to ensure the monitoring of integrity of the transmission technology and technology path. Where shared communications equipment is used as permitted by 26.6.3.12, provided secondary (standby)

-	Component	Initial Acceptance	Periodic Frequency	Method
				power sources shall be tested in accordance with Table 14.4.3.2, item 7, 8, or 9, as applicable.

-	Component	Initial Acceptance	Periodic Frequency	Method
5.	Emergency communications equipment	-	-	-
-	(1) Amplifier/tone generators	X	Annually	Verify correct switching and operation of backup equipment.
-	(2) Call-in signal silence	X	Annually	Operate/function and verify receipt of correct visual and audible signals at control unit.
-	(3) Off-hook indicator (ring down)	X	Annually	Install phone set or remove phone from hook and verify receipt of signal at control unit.
-	(4) Phone jacks	X	Annually	Visually inspect phone jack and initiate communications path through jack.
-	(5) Phone set	X	Annually	Actuate each phone set and verify correct operation.
-	(6) System performance	X	Annually	Operate the system with a minimum of any five handsets simultaneously. Verify voice quality and clarity.
6.	Engine-driven generator	X	Monthly	If an engine-driven generator dedicated to the system is used as a required power source, verify operation of the generator and transfer switch in accordance with NFPA 110 by the building owner.
7.	Emergency power supply system/stored-emergency power supply system (EPSS/SEPSS)	X	Annually	If an EPSS/SEPSS dedicated to the system is used as a required power source, verify by the building owner operation of the

-	Component	Initial Acceptance	Periodic Frequency	Method	
			EPSS/SEPSS in accordance with NFPA 111.		
8.	Secondary (standby) power supply[c]	X	Annually	Disconnect all primary (main) power supplies and verify the occurrence of required trouble indication for loss of primary power. Measure or verify the system's standby and alarm current demand using the equipment manufacturer's data and verify the battery's rated capacity exceeds the system's power demand, including the safety margin. Operate general alarm systems a minimum of 5 minutes and emergency voice communications systems for a minimum of 15 minutes. Reconnect primary (main) power supply at end of test.	
9.	VRLA battery and charger[d]	-	-		Prior t conduc any ba testing by the conduc test, th system softwa stored volatile memo protec loss.

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(1) Temperature test	X	Semiannually	Upon initially opening the cabinet door, measure the internal ambient temperature of the enclosure. Measure the temperature of each battery cell/unit at the negative terminal with an infrared thermometer. Replace any battery cell/unit if its temperature is greater than 18°F (10°C) above the measured internal ambient temperature of the enclosure.
-	(2) Charger test[e]	X	Semiannually	With the battery fully charged and connected to the charger, measure the voltage across the battery with a voltmeter. Verify the voltage is within the battery/alarm equipment manufacturer's recommendations. If the voltage is outside of the specified limits, either adjust the charger to within limits or replace the charger.
-	(3) Cell/Unit voltage test	X	Semiannually	With the battery fully charged and connected to the charger, measure the voltage of each cell/unit with a voltmeter. Replace the battery when any cell/unit measures a voltage less than 13.26 volts.
-	(4) Ohmic test[f]	X	N/A	When the battery is installed, establish a baseline ohmic value for each battery cell/unit or where available use baseline ohmic values provided by the battery or test equipment

-	Component	Initial Acceptance	Periodic Frequency	Method	
				manufacturer. In either case record the base line ohmic value on each battery cell/unit.	
		-	-	-	Semia
-	(5) Replacement/Load test[g]	-		3 years	Replac battery condu test of battery capaci test th based

-	Component	Initial Acceptance	Periodic Frequency	Method	
					manuf specifi for a d rate of or mor applyi curren indicat the se hourly discha contin until th termin voltag decrea the en voltag specifi the manuf Recor test du and ca the ba capaci includi adjust ambie tempe Repla battery capaci less th equal or at th sched interva battery capaci less th
10.	Public emergency alarm reporting system — wired system	X	Daily	Manual tests of the power supply for public reporting circuits shall be made and recorded at least once during each 24-hour period. Such tests shall include the following: - -	

-	Component	Initial Acceptance	Periodic Frequency	Method

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
11.	Remote annunciators	X	Annually	Verify the correct operation and identification of annunciators. If provided, verify the correct operation of annunciator under a fault condition.
12.	Reserved	-	-	-
13.	Reserved	-	-	-
14.	Wireless communications	X	Annually	Test per the manufacturer's published instructions.
15.	Conductors — metallic	-	-	-
-	(1) Stray voltage	X	N/A	Test all installation conductors with a volt/ohmmeter to verify that there are no stray (unwanted) voltages between installation conductors or between installation conductors and ground. Verify the maximum allowable stray voltage does not exceed 1 volt ac/dc, unless a different threshold is specified in the manufacturer's published instructions for the installed equipment.
-	(2) Ground faults	X	N/A	Test all installation conductors, other than those intentionally and permanently grounded, for isolation from ground per the installed equipment manufacturer's published instructions.
-	(3) Short-circuit faults	X	N/A	Test all installation conductors, other than those intentionally connected together, for conductor-to-

-	Component	Initial Acceptance	Periodic Frequency	Method	
				conductor isolation per the manufacturer's published instructions for the installed equipment. Also test these same circuits conductor-to-ground.	
-	(4) Loop resistance	X	N/A	With each initiating and indicating circuit installation conductor pair short-circuited at the far end, measure and record the resistance of each circuit. Verify that the loop resistance does not exceed the limits specified in the manufacturer's published instructions for the installed equipment.	
-	(5) Circuit integrity	X	N/A	For initial and reacceptance testing, confirm the introduction of a fault in any circuit monitored for integrity results in a trouble indication at the fire alarm control unit. Open one connection at not less than 10 percent of the initiating devices, notification appliances and controlled devices on every initiating device circuit, notification appliance circuit, and signaling line circuit. Confirm all circuits perform as indicated in Sections 23.5, 23.6, and 23.7.	
	-	-	N/A	Annually	For pe testing each i device notifica applia circuit, signali circuit correc

-	Component	Initial Acceptance	Periodic Frequency	Method	
					indicat the co unit. C all circ perfor indicat Sectio 23.6, a 23.7.
16. Nonmetallic pathways	-	-	-		
-	(1) Optical fiber cables	X	N/A	Test the transmission characteristics of optical fibers by the use of an optical power meter or by an optical time domain reflectometer used to measure the relative power loss of the line. Test result data must meet or exceed ANSI/TIA 568.3, *Optical Fiber Cabling and Components Standard*, related to fiber-optic lines and connection/splice losses and the control unit manufacturer's published specifications.	
-	(2) Circuit integrity	X	N/A	For initial and reacceptance testing, confirm the introduction of a fault in any circuit monitored for integrity results in a trouble indication at the fire alarm control unit. Open one connection at not less than 10 percent of the initiating devices, notification appliances, and controlled devices on every initiating device circuit, notification appliance circuit, and signaling line circuit. Confirm all circuits perform as indicated in Sections 23.5, 23.6, and 23.7.	

		Component	Initial Acceptance	Periodic Frequency	Method	
				N/A	Annually	For pe testing each i device notifica applia circuit, signali circuit correc indicat the co unit. C all circ perfor indicat Sectio 23.6, a 23.7.
17.	Initiating devices[i]					
		(1) Electromechanical releasing device				
		(a) Nonrestorable-type link	X	Annually	Verify correct operation by removal of the fusible link and operation of the associated device.	
		(b) Restorable-type link[j]	X	Annually	Verify correct operation by removal of the fusible link and operation of the associated device.	
		(2) Fire extinguishing system(s) or suppression system(s) alarm switch	X	Annually	Operate the switch mechanically or electrically and verify receipt of signal by the fire alarm control unit.	
		(3) Fire–gas and other detectors	X	Annually	Test fire–gas detectors and other fire detectors as prescribed by the manufacturer and as necessary for the application.	
		(4) Heat detectors				
		(a) Fixed-temperature, rate-of-rise, rate of compensation, restorable line, spot type	X	Annually (see 14.4.4.5)	Perform heat test with a listed and labeled heat source or in accordance with the manufacturer's published instructions.	

		Component	Initial Acceptance	Periodic Frequency	Method
		(excluding pneumatic tube type)			Assure that the test method for the installed equipment does not damage the nonrestorable fixed-temperature element of a combination rate-of-rise/fixed-temperature element detector.
		(b) Fixed-temperature, nonrestorable line type	X	Annually	Do not perform heat test. Test functionality mechanically and electrically. Measure and record loop resistance. Investigate changes from acceptance test.
		(c) Fixed-temperature, nonrestorable spot type	X	See Method	After 15 years from initial installation, replace all devices or have 2 detectors per 100 laboratory tested. Replace the 2 detectors with new devices. If a failure occurs on any of the detectors removed, remove and test additional detectors to determine either a general problem involving faulty detectors or a localized problem involving 1 or 2 defective detectors.
		(d) Restorable line type, pneumatic tube only	X	Annually	Perform heat tests (where test chambers are in circuit), with a listed and labeled heat source or in accordance with the

-	Component	Initial Acceptance	Periodic Frequency	Method
				manufacturer's published instructions of the detector or conduct a test with pressure pump.
-	(e) Single- and multiple-station heat alarms	X	Annually	Conduct functional tests according to manufacturer's published instructions. Do not test nonrestorable heat detectors with heat.
-	(5) Manual fire alarm boxes	X	Annually	Operate manual fire alarm boxes per the manufacturer's published instructions. Test both key-operated presignal and general alarm manual fire alarm boxes.
-	(6) Radiant energy fire detectors	X	Semiannually	Test flame detectors and spark/ember detectors in accordance with the manufacturer's published instructions to determine that each detector is operative.
			-	-
			-	-
			-	-
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
-	(7) Smoke detectors — functional test	-	-	-
-	(a) In other than one- and two-family dwellings, system detectors	X	Annually	[k]Test smoke detectors in place to ensure smoke entry into the sensing chamber and an alarm response. Use smoke or a listed and labeled product acceptable to the manufacturer or in accordance with their published instructions. Other methods listed in the manufacturer's published instructions that ensure smoke entry from the protected area, through the vents, into

-	Component	Initial Acceptance	Periodic Frequency	Method
				the sensing chamber can be used.
-	(b) Single- and multiple-station smoke alarms connected to protected premises systems	X	Annually	Perform a functional test on all single- and multiple-station smoke alarms connected to a protected premises fire alarm system by putting the smoke alarm into an alarm condition.
-	(c) System smoke detectors used in one- and two-family dwellings	X	Annually	Conduct functional tests according to manufacturer's published instructions.
-	(d) Air sampling	X	Annually	Test with smoke or a listed and labeled product acceptable to the manufacturer or in accordance with their published instructions. In the absence of an automatic, listed airflow supervision feature, test from the end sampling port or point on each pipe run and verify airflow through all other ports or points.
-	(e) Duct type	X	Annually	In addition to the testing required in Table 14.4.3.2(17)(7)(a) and Table 14.4.3.2(17)(8), test duct smoke detectors that use sampling tubes to ensure that they will properly sample the airstream in the duct using a method acceptable to the manufacturer or in accordance with their published instructions.
-	(f) Projected beam type	X	Annually	Test the detector by introducing smoke, other aerosol, or an optical filter into the beam path.
-	(g) Smoke detector with built-in thermal element	X	Annually	Operate both portions of the detector independently as described for the

-	Component	Initial Acceptance	Periodic Frequency	Method
				respective devices.
-	(h) Smoke detectors with control output functions	X	Annually	Verify that the control capability remains operable even if all of the initiating devices connected to the same initiating device circuit or signaling line circuit are in an alarm state.
-	(8) Smoke detectors — sensitivity testing	-	-	-
-	In other than one- and two-family dwellings, system detectors	N/A	See 14.4.4.3	lPerform any of the following tests to ensure that each smoke detector is within its listed and marked sensitivity range:
			-	-
			-	-
			-	-
			-	-
			-	-
-	(9) Carbon monoxide detectors/carbon	-	-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
	monoxide alarms connected to protected premises systems			
-	(a) CO entry test	X	Annually	Test the devices in place to ensure CO entry to the sensing chamber by introduction through the vents, to the sensing chamber of listed and labeled product acceptable to the manufacturer or in accordance with manufacturer's published instructions
-	(b) Air sampling	X	Annually	Per test methods documented in the manufacturer's published instructions, verify detector alarm response through the end sampling port on each pipe run; verify airflow through all other ports as well.
-	(c) Duct type	X	Annually	Test or inspect air duct detectors to ensure that the device will sample the airstream in accordance with the manufacturer's published instructions.
-	(d) CO detector with control output functions	X	Annually	Within each protected space, verify that the control capability remains operable even if all of the initiating devices connected to the same initiating device circuit or signaling line circuit are in an alarm state.
-	(10) Initiating devices, supervisory	-	-	-
-	(a) Control valve switch	X	Semiannual	Operate valve and verify signal receipt to be within the first two revolutions of the handwheel or within one-fifth of the travel distance, or per the

-	Component	Initial Acceptance	Periodic Frequency	Method
				manufacturer's published instructions. Continue to cycle outside stem and yoke valves and verify switch does not reset during full travel of the valve stem.
-	(b) High- or low-air pressure switch	X	Annually	Operate switch and verify receipt of signal is obtained where the required pressure is increased or decreased a maximum 10 psi (70 kPa) from the required pressure level or in accordance with manufacturer's published instructions.
-	(c) Steam pressure	X	Annually	Operate switch and verify receipt of signal is obtained before pressure decreases to 110 percent of the minimum operating pressure of the steam-operated equipment.
-	(d) Pressure supervisory devices for other sources	X	Annually	Operate switch and verify receipt of signal is obtained where the required pressure is increased or decreased from the normal operating pressure by an amount specified in approved design documents.
-	(e) Room temperature switch	X	Annually	Operate switch and verify receipt of signal to indicate the decrease in room temperature to 40°F (4.4°C) and its restoration to above 40°F (4.4°C).
-	(f) Water level switch	X	Annually	Operate switch and verify receipt of signal indicating the water level raised or lowered a maximum 3 in. (70 mm) from the required level within a pressure tank, or a

-	Component	Initial Acceptance	Periodic Frequency	Method
				maximum 12 in. (300 mm) from the required level of a nonpressure tank. Also verify its restoral to required level.
-	(g) Water temperature switch	X	Annually	Operate switch and verify receipt of signal to indicate the decrease in water temperature to 40°F (4.4°C) and its restoration to above 40°F (4.4°C).
-	(11) Mechanical, electrosonic, or pressure-type waterflow device	X	Semiannually	Water shall be flowed through an inspector's test connection indicating the flow of water equal to that from a single sprinkler of the smallest orifice size installed in the system or other listed and approved waterflow switch test methods for wet-pipe systems, or an alarm test bypass connection for dry-pipe, pre-action, or deluge systems in accordance with NFPA 25.
-	(12) Multi-sensor fire detector or multi-criteria fire detector or combination fire detector	X	Annually	1. Test each detector in accordance with the manufacturer’s published instructions. Test each of the sensors present within the detector (e.g., smoke/heat/CO, etc.) independently for the specific detection principle, regardless of the configuration status at the time of testing, or individual sensors together if the technology allows individual sensor responses to be verified, or where sensors cannot be tested individually, test the primary sensor.[m]

	Component	Initial Acceptance	Periodic Frequency	Method
18.	Special hazard equipment			
	(1) Abort switch (dead-man type)	X	Annually	Operate abort switch and verify correct sequence and operation.

		Component	Initial Acceptance	Periodic Frequency	Method
-		(2) Abort switch (recycle type)	X	Annually	Operate abort switch and verify development of correct matrix with each sensor operated.
-		(3) Abort switch (special type)	X	Annually	Operate abort switch and verify correct sequence and operation in accordance with authority having jurisdiction. Observe sequencing as specified on as-built drawings or in system owner's manual.
-		(4) Cross-zone detection circuit	X	Annually	Operate one sensor or detector on each zone. Verify occurrence of correct sequence with operation of first zone and then with operation of second zone.
-		(5) Matrix-type circuit	X	Annually	Operate all sensors in system. Verify development of correct matrix with each sensor operated.
-		(6) Release solenoid circuit[n]	X	Annually	Verify operation of solenoid.
-		(7) Squibb release circuit	X	Annually	Use AGI flashbulb or other test light approved by the manufacturer. Verify operation of flashbulb or light.
-		(8) Verified, sequential, or counting zone circuit	X	Annually	Operate required sensors at a minimum of four locations in circuit. Verify correct sequence with both the first and second detector in alarm.
-		(9) All above devices or circuits or combinations thereof	X	Annually	Verify supervision of circuits by creating an open circuit.
19.	Combination systems	-	-	-	

	-	Component	Initial Acceptance	Periodic Frequency	Method
	-	(1) Fire extinguisher electronic monitoring device/system	X	Annually	Test communication between the device connecting the fire extinguisher electronic monitoring device/system and the fire alarm control unit to ensure proper signals are received at the fire alarm control unit and remote annunciator(s) if applicable.
	-	(2) Carbon monoxide device/system	X	Annually	Test communication between the device connecting the carbon monoxide device/system and the fire alarm control unit to ensure proper signals are received at the fire alarm control unit and remote annunciator(s) if applicable.
20.	Interface equipment[o]	X	See 14.4.4.4		Test interface equipment connections by operating or simulating the equipment being supervised. Verify signals required to be transmitted are received at the control unit. Test frequency for interface equipment is the same as the frequency required by the applicable NFPA standard(s) for the equipment being supervised.
21.	Guard's tour equipment	X	Annually		Test the device in accordance with the manufacturer's published instructions.

-	Component	Initial Acceptance	Periodic Frequency	Method	
22.	Alarm notification appliances	-	-	-	
-	(1) Audible[p]	X	N/A	For initial and reacceptance testing, measure sound pressure levels for alert tone signals and evacuation signal tones with a sound level meter meeting ANSI/ASAS1.4/Part 1, *Electroacoustics — Sound Level Meters — Part 1: Specifications,* Type 2 requirements. Measure sound pressure levels to determine if they are in compliance with Chapter 18 and the required performance, as documented per 7.3.4. Set the sound level meter in accordance with ANSI/ASA S3.41, *Audible Emergency Evacuation (E2) and Evacuation Signals with Relocation Instructions (ESRI),* using the time-weighted characteristic F (FAST).	
	-	-	N/A	Annually	[q]For p testing the op of the notifica applia
-	(2) Audible textual notification appliances (loudspeakers and other appliances to convey voice messages)	X	N/A	For initial and reacceptance testing, measure sound pressure levels for signals with a sound level meter meeting ANSI/ASAS1.4/Part 1, *Electroacoustics — Sound Level Meters — Part 1: Specifications,* Type 2 requirements. Measure sound	

-	Component	Initial Acceptance	Periodic Frequency	Method	
				pressure levels throughout the protected area to determine if they are in compliance with Chapter 18 and the required performance, as documented per 7.3.4. Set the sound level meter in accordance with ANSI/ASA S3.41, *Audible Emergency Evacuation (E2) and Evacuation Signals with Relocation Instructions (ESRI),* using the time-weighted characteristic F (FAST).	
			-	-	
	-	-	N/A	Annually	[q]For p testing the op of the notifica applia
-	(3) Visual	X	N/A	Perform initial and reacceptance testing in accordance with the manufacturer's published instructions. Verify appliance locations to be per approved layout and confirm that no floor plan changes affect the approved layout. Verify the candela rating or method of candela control marking on each visual appliance and rating when reported by the FACU agrees with the approved drawings. Confirm that each appliance flashes.	

		Component	Initial Acceptance	Periodic Frequency	Method	
	-	-	-	N/A	Annually	For pe testing that ea applia flashes
23.	Exit marking audible notification appliance	X	Annually	Perform tests in accordance with manufacturer's published instructions.		
24.	Emergency control functions[r]	X	Annually	For initial, reacceptance, and periodic testing, verify emergency control function interface device activation. Where an emergency control function interface device is disabled or disconnected during initiating device testing, verify that the disabled or disconnected emergency control function interface device has been properly restored, including electromagnetic devices used for door releasing services as part of a fire alarm system.		
25.	Two-way emergency communications systems	X	Annually	Use the manufacturer's published instructions and the as-built drawings provided by the system supplier to verify correct operation after the initial testing phase has been		

-	Component	Initial Acceptance	Periodic Frequency	Method
			performed by the supplier or by the supplier's designated representative.	
			-	-
			-	-
			-	-
			-	-
			-	-
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
26. Special procedures	-	-	-	
-	(1) Alarm verification	X	Annually	Verify time delay and alarm response for smoke detector circuits identified as having alarm verification.
-	(2) Multiplex systems	X	Annually	Verify communications between sending and receiving units under both primary and secondary power.
			-	-
			-	-
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
27.	Supervising station alarm systems — receiving equipment	-	-	-
-	(1) All equipment	X	Monthly	Perform tests on all system functions and features in accordance with the equipment manufacturer's published instructions for correct operation in conformance with the applicable sections of Chapter 26.
			-	-
			-	-
-	(2) Digital alarm communicator receiver (DACR)	X	Monthly	Disconnect each transmission means in turn from the DACR, and verify audible and visual annunciation of a trouble signal in the supervising station.
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(3) Digital alarm radio receiver (DARR)	X	Monthly	Cause the following conditions of all DARRs on all subsidiary and repeater station receiving equipment. Verify receipt at the supervising station of correct signals for each of the following conditions:
			-	-
			-	-
			-	-
			-	-
			-	-
-	(4) McCulloh systems	X	Monthly	Test and record the current on each circuit at each supervising and subsidiary station under the following conditions:
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
			-	-
			-	-
			-	-
			-	-
-	(5) Radio alarm supervising station receiver (RASSR) and radio alarm repeater station receiver (RARSR)	X	Monthly	Cause each of the following conditions at each of the supervising or subsidiary stations and all repeater station radio transmitting and receiving equipment; verify receipt of correct signals at the supervising station:
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
-	(6) Private microwave radio systems	X	Monthly	Cause each of the following conditions at each of the supervising or subsidiary stations and all repeater station radio transmitting and receiving equipment; verify receipt of correct signals at the supervising station:
			-	-
			-	-
			-	-
			-	-
-	(7) Performance-based technologies	X	Monthly	Perform tests to ensure the monitoring of integrity of the transmission technology and technology path. Where a single communications path is used, disconnect the communication path. Verify that failure of the path is annunciated at the supervising station within 60 minutes of the failure (within 5 minutes for communication equipment installed prior to adoption of the 2013 edition of *NFPA 72*). Restore the communication path. Where multiple

-	Component	Initial Acceptance	Periodic Frequency	Method
				communication paths are used, disconnect both communication paths and confirm that failure of the path is annunciated at the supervising station within not more than 6 hours of the failure (within 24 hours for communication equipment installed prior to adoption of the 2013 edition of *NFPA 72*). Restore both communication paths.
28.	Public emergency alarm reporting system transmission equipment	-	-	-	
-	(1) Publicly accessible alarm box	X	Semiannually	Actuate publicly accessible initiating device(s) and verify receipt of not less than three complete rounds of signal impulses. Perform this test under normal circuit conditions. If the device is equipped for open circuit operation (ground return), test it in this condition as one of the semiannual tests.
-	(2) Auxiliary box	X	Annually	Test each initiating circuit of the auxiliary box by actuation of a protected premises initiating device connected to that circuit. Verify receipt of not less than three complete rounds of signal impulses.
-	(3) Master box	-	-	-
-	(a) Manual operation	X	Semiannually	Perform the tests prescribed for 28(1).
-	(b) Auxiliary operation	X	Annually	Perform the tests prescribed for 28(2).

-	Component	Initial Acceptance	Periodic Frequency	Method
29.	Low-power radio (wireless systems)	X	N/A	The following procedures describe additional acceptance and reacceptance test methods to verify wireless protection system operation:

-	Component	Initial Acceptance	Periodic Frequency	Method
-			-	-
-			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
30. Mass notification systems	-	-	-	
-	(1) Functions	X	Annually	~~At a minimum, test~~ Test control unit to verify correct receipt of alarm, supervisory, and trouble signals (inputs); operation of evacuation signals and auxiliary functions (outputs); circuit supervision, including detection of open circuits and ground faults; and power supply supervision for

-	Component	Initial Acceptance	Periodic Frequency	Method
				detection of loss of ac power and disconnection of secondary batteries.
-	(2) Fuses	X	Annually	Verify the rating and supervision.
-	(3) Interfaced equipment	X	Annually	Verify integrity of single or multiple circuits providing interface between two or more control units. Test interfaced equipment connections by operating or simulating operation of the equipment being supervised. Verify signals required to be transmitted at the control unit.
-	(4) Lamps and LEDs	X	Annually	Illuminate lamps and LEDs.
-	(5) Primary (main) power supply	X	Annually	Disconnect all secondary (standby) power and test under maximum load, including all alarm appliances requiring simultaneous operation. Reconnect all secondary (standby) power at end of test. For redundant power supplies, test each separately.
-	(6) Audible textual notification appliances (loudspeakers and other appliances to convey voice messages)	X	Annually	Measure sound pressure level with a sound level meter meeting ANSI/ASAS1.4/Part 1, *Electroacoustics — Sound Level Meters — Part 1: Specifications,* Type 2 requirements. Measure and record levels throughout protected area. Set the sound level meter in accordance with ANSI/ASA S3.41, *Audible Emergency Evacuation (E2) and Evacuation Signals*

-	Component	Initial Acceptance	Periodic Frequency	Method
				with Relocation Instructions (ESRI), using the time-weighted characteristic F (FAST). Record the maximum output when the audible emergency evacuation signal is on.
			-	-
-	(7) Visual	X	Annually	Perform test in accordance with manufacturer's published instructions. Verify appliance locations to be per approved layout and confirm that no floor plan changes affect the approved layout. Verify the candela rating or method of candela control marking on each visual appliance and rating when reported by the FACU agrees with the approved drawings. Confirm that each appliance flashes.
-	(8) Control unit functions and no diagnostic failures are indicated	X	Annually	Review event log file and verify that the correct events were logged. Review system diagnostic log file; correct deficiencies noted in file. Delete unneeded log files. Delete unneeded error files. Verify that sufficient free disk space is available. Verify unobstructed flow of cooling air is available. Change/clean filters, cooling fans, and intake vents.

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(9) Control unit reset	X	Annually	Power down the central control unit computer and restart it.
-	(10) Control unit security	X	Annually	If remote control software is loaded onto the system, verify that it is disabled to prevent unauthorized system access.
-	(11) Audible/visual functional test	X	Annually	Send out an alert to a diverse set of predesignated receiving devices and confirm receipt. Include at least one of each type of receiving device.
-	(12) Software backup	X	Annually	Make full system software backup. Rotate backups based on accepted practice at site.
-	(13) Secondary power test	X	Annually	Disconnect ac power. Verify the ac power failure alarm status on central control unit. With ac power disconnected, verify battery voltage under load.
-	(14) Wireless signals	X	Annually	Check forward/reflected radio power is within specifications.
-	(15) Antenna	X	Annually	Check forward/reflected radio power is within specifications. Verify solid electrical connections with no observable corrosion.
-	(16) Transceivers	X	Annually	Verify proper operation and mounting is not compromised.

[a]Some transmission equipment (such as, but not limited to, cable modems, fiber-optic interface nodes, and VoIP interfaces) are typically powered by the building's electrical system using a secondary (standby) power supply that does not meet the requirements of this Code. This is intended to ensure that the testing authority verifies full secondary (standby) power as required by Chapter 10. Additionally, refer to Table 14.4.3.2, items 7 through 9, for secondary (standby) power supply testing.

[b]The automatic transmission of the check-in (handshake) signal can take up to 60 minutes to occur.

[c]See Table 14.4.3.2, Item 4(1) for the testing of transmission equipment.

[d]The battery tests in Table 14.4.3.2, Item 9, are based on VRLA batteries and it is the intent that the tests specified in (1) through (4) be performed in order. FACU automated load testing of VRLA batteries in accordance with Table 14.4.3.2, Item 9(5), with record of ambient temperature is an acceptable alternative to prescriptive manual methods using test equipment. For other secondary battery types, refer to the battery manufacturer's published instructions or IEEE 450, *Recommended Practice for Maintenance, Testing, and Replacement of Vented Lead-Acid Batteries for Stationary Applications*, for vented lead-acid batteries, and IEEE 1106, *Recommended Practice for Installation, Maintenance, Testing, and Replacement of Vented Nickel-Cadmium Batteries for Stationary Applications*, for nickel-cadmium batteries.

[e]If the charger is adjustable, adjust the output voltage to 2.265 volts per cell ±0.015 volts at 77°F (25°C) or as specified by the alarm equipment manufacturer.

[f]See A.14.4.3.2 Item 9(4). A load test per Item 9(5) is permitted in lieu of an ohmic test.

[g]See A.14.4.3.2 Item 9(5).

[h]The voltmeter sensitivity has been changed from 1000 ohms per volt to 100 ohms per volt so that the false ground readings (caused by induced voltages) are minimized.

[i]Initiating devices such as smoke detectors used for elevator recall, closing dampers, or releasing doors held in the open position that are permitted by the Code *(see9.6.3 of NFPA 101)* to initiate supervisory signals at the fire alarm control unit (FACU) should be tested at the same frequency (annual) as those devices when they are generating an alarm signal. They are not supervisory devices, but they initiate a supervisory signal at the FACU.

[j]Fusible thermal link detectors are commonly used to close fire doors and fire dampers electrically connected to the fire alarm control unit. They are actuated by the presence of external heat, which causes a solder element in the link to fuse, or by an electric thermal device, which, when energized, generates heat within the body of the link, causing the link to fuse and separate.

[k]Note, it is customary for the manufacturer of the smoke detector to test a particular product from an aerosol provider to determine acceptability for use in smoke entry testing of their smoke detector/smoke alarm. Magnets are not acceptable for smoke entry tests.

[l] There are some detectors that use magnets as a manufacturer's calibrated sensitivity test instrument.

[m]For example, it might not be possible to individually test the heat sensor in a thermally enhanced smoke detector.

[n]Manufacturer's published instructions should be consulted to ensure a proper operational test. No suppression gas or agent is expected to be discharged during the test of the solenoid. *See Test Plan of 14.2.10*.

[o]A monitor module installed on an interface device is not considered a supervisory device and therefore not subject to the quarterly testing frequency requirement. Test frequencies for interface devices should be in accordance with the applicable standard. For example, fire pump controller alarms such as phase reversal are required to be tested annually. If a monitor module is installed to identify phase reversal on the fire alarm control unit, it is not necessary to test for phase reversal four times a year.

[p]Chapter 18 would require 15 dB over average ambient sound for public mode spaces. Sometimes the ambient sound levels are different from what the design was based upon. Private operating mode would require 10 dB over average ambient at the location of the device.

[q]Where building, system, or occupancy changes have been observed, the owner should be

notified of the changes. New devices might need to be installed and tested per the initial acceptance testing criteria.

[r]See A.14.4.3.2 and Table 14.4.3.2, Item 24.

Statement of Problem and Substantiation for Public Input

Deleted non enforceable language

Submitter Information Verification

Submitter Full Name: Megan Hayes
Organization: Nema
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City:
State:
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Submittal Date: Mon May 30 17:46:04 EDT 2022
Committee: SIG-TMS

Committee Statement

Resolution: The Technical Committee does not agree with the submitter as the presence or absence of this language does not appear to have any effect on the test method either way.

Public Input No. 512-NFPA 72-2022 [Section No. 14.4.3.2]

Move the footnotes to the body of the code if they are enforceable or they should go into the Annex.

14.4.3.2*

Systems and associated equipment shall be tested according to Table 14.4.3.2.

Table 14.4.3.2 Testing

	Component	Initial Acceptance	Periodic Frequency	Method
1. All equipment	X			See Table 14.3.1.
2. Control unit				
	(1) Functions	X	Annually	Verify correct receipt of alarm, supervisory, and trouble signals (inputs); operation of evacuation signals and auxiliary functions (outputs); circuit supervision, including detection of open circuits and ground faults; and power supply supervision for detection of loss of ac power and disconnection of secondary batteries.
	(2) Fuses	X	Annually	Verify rating and supervision.
	(3) Interfaced equipment	X	Annually	Verify integrity of single or multiple circuits providing interface between two or more control units. Test interfaced equipment connections by operating or simulating operation of the equipment being supervised. Verify signals required to be transmitted at the control unit.
	(4) Lamps and LEDs	X	Annually	Illuminate lamps and LEDs.
	(5) Primary (main) power supply	X	Annually	Disconnect all secondary (standby) power and test under maximum load, including all alarm appliances requiring simultaneous operation. Reconnect all secondary (standby) power at end of test. Test redundant power supplies separately.

-	Component	Initial Acceptance	Periodic Frequency	Method
3.	Alarm control unit trouble signals	-	-	-
-	(1) Audible and visual	X	Annually	Verify operation of control unit trouble signals. Verify ring-back feature for systems using a trouble-silencing switch that requires resetting.
-	(2) Disconnect switches	X	Annually	If control unit has disconnect or isolating switches, verify performance of intended function of each switch. Verify receipt of trouble signal when a supervised function is disconnected.
-	(3) Ground-fault monitoring circuit	X	Annually	If the system has a ground detection feature, verify the occurrence of ground-fault indication whenever any installation conductor is grounded.
-	(4) Transmission of signals to off-premises location	X	Annually	Actuate an initiating device and verify receipt of alarm signal at the off-premises location.
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
4. Supervising station alarm systems — transmission equipment	-	-	-	
-	(1) All equipment	X	Annually	[a]Test all system functions and features in accordance with the equipment manufacturer's published instructions for correct operation in conformance with the applicable sections of Chapter 26.
			-	-
			-	-
-	(2) Digital alarm communicator transmitter (DACT)	X	Annually	Except for DACTs installed prior to adoption of the 2013 edition of NFPA 72 that are connected to a telephone line

-	Component	Initial Acceptance	Periodic Frequency	Method
				(number) that is also supervised for adverse conditions by a derived local channel, ensure connection of the DACT to two separate means of transmission.
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(3) Digital alarm radio transmitter (DART)	X	Annually	Disconnect the primary telephone line. Verify transmission of a trouble signal to the supervising station by the DART occurs within 4 minutes.
-	(4) McCulloh transmitter	X	Annually	Actuate initiating device. Verify production of not less than three complete rounds of not less than three signal impulses each by the McCulloh transmitter.

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			(2) Ground	
			-	-
			-	-
			-	-
			-	-
			(2) Ground	
			-	-
-	(5) Radio alarm transmitter (RAT)	X	Annually	Cause a fault between elements of the transmitting equipment. Verify indication of the fault at the protected premises, or transmission of trouble signal to the supervising station.
-	(6) Performance-based technologies	X	Annually	Perform tests to ensure the monitoring of integrity of the transmission technology and technology path. Where shared communications equipment is used as permitted by 26.6.3.12, provided secondary (standby)

-	Component	Initial Acceptance	Periodic Frequency	Method
				power sources shall be tested in accordance with Table 14.4.3.2, item 7, 8, or 9, as applicable.

-	Component	Initial Acceptance	Periodic Frequency	Method
5.	Emergency communications equipment	-	-	-
-	(1) Amplifier/tone generators	X	Annually	Verify correct switching and operation of backup equipment.
-	(2) Call-in signal silence	X	Annually	Operate/function and verify receipt of correct visual and audible signals at control unit.
-	(3) Off-hook indicator (ring down)	X	Annually	Install phone set or remove phone from hook and verify receipt of signal at control unit.
-	(4) Phone jacks	X	Annually	Visually inspect phone jack and initiate communications path through jack.
-	(5) Phone set	X	Annually	Actuate each phone set and verify correct operation.
-	(6) System performance	X	Annually	Operate the system with a minimum of any five handsets simultaneously. Verify voice quality and clarity.
6.	Engine-driven generator	X	Monthly	If an engine-driven generator dedicated to the system is used as a required power source, verify operation of the generator and transfer switch in accordance with NFPA 110 by the building owner.
7.	Emergency power supply system/stored-emergency power supply system (EPSS/SEPSS)	X	Annually	If an EPSS/SEPSS dedicated to the system is used as a required power source, verify by the building owner operation of the

-	Component	Initial Acceptance	Periodic Frequency	Method	
			EPSS/SEPSS in accordance with NFPA 111.		
8.	Secondary (standby) power supply[c]	X	Annually	Disconnect all primary (main) power supplies and verify the occurrence of required trouble indication for loss of primary power. Measure or verify the system's standby and alarm current demand using the equipment manufacturer's data and verify the battery's rated capacity exceeds the system's power demand, including the safety margin. Operate general alarm systems a minimum of 5 minutes and emergency voice communications systems for a minimum of 15 minutes. Reconnect primary (main) power supply at end of test.	
9.	VRLA battery and charger[d]	-	-		Prior t conduc any ba testing by the conduc test, th system softwa stored volatile memo protec loss.

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(1) Temperature test	X	Semiannually	Upon initially opening the cabinet door, measure the internal ambient temperature of the enclosure. Measure the temperature of each battery cell/unit at the negative terminal with an infrared thermometer. Replace any battery cell/unit if its temperature is greater than 18°F (10°C) above the measured internal ambient temperature of the enclosure.
-	(2) Charger test[e]	X	Semiannually	With the battery fully charged and connected to the charger, measure the voltage across the battery with a voltmeter. Verify the voltage is within the battery/alarm equipment manufacturer's recommendations. If the voltage is outside of the specified limits, either adjust the charger to within limits or replace the charger.
-	(3) Cell/Unit voltage test	X	Semiannually	With the battery fully charged and connected to the charger, measure the voltage of each cell/unit with a voltmeter. Replace the battery when any cell/unit measures a voltage less than 13.26 volts.
-	(4) Ohmic test[f]	X	N/A	When the battery is installed, establish a baseline ohmic value for each battery cell/unit or where available use baseline ohmic values provided by the battery or test equipment

-	Component	Initial Acceptance	Periodic Frequency	Method	
				manufacturer. In either case record the base line ohmic value on each battery cell/unit.	
		-	-	-	Semia
-	(5) Replacement/Load test[g]	-		3 years	Replac battery condu test of battery capaci test th based

-	Component	Initial Acceptance	Periodic Frequency	Method	
					manuf specifi for a d rate of or mor applyi curren indicat the se hourly discha contin until th termin voltag decrea the en voltag specifi the manuf Recor test du and ca the ba capaci includi adjust ambie tempe Repla battery capaci less th equal or at th sched interva battery capaci less th
10.	Public emergency alarm reporting system — wired system	X	Daily	Manual tests of the power supply for public reporting circuits shall be made and recorded at least once during each 24-hour period. Such tests shall include the following: - -	

-	Component	Initial Acceptance	Periodic Frequency	Method

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
11.	Remote annunciators	X	Annually	Verify the correct operation and identification of annunciators. If provided, verify the correct operation of annunciator under a fault condition.
12.	Reserved	-	-	-
13.	Reserved	-	-	-
14.	Wireless communications	X	Annually	Test per the manufacturer's published instructions.
15.	Conductors — metallic	-	-	-
-	(1) Stray voltage	X	N/A	Test all installation conductors with a volt/ohmmeter to verify that there are no stray (unwanted) voltages between installation conductors or between installation conductors and ground. Verify the maximum allowable stray voltage does not exceed 1 volt ac/dc, unless a different threshold is specified in the manufacturer's published instructions for the installed equipment.
-	(2) Ground faults	X	N/A	Test all installation conductors, other than those intentionally and permanently grounded, for isolation from ground per the installed equipment manufacturer's published instructions.
-	(3) Short-circuit faults	X	N/A	Test all installation conductors, other than those intentionally connected together, for conductor-to-

-	Component	Initial Acceptance	Periodic Frequency	Method	
				conductor isolation per the manufacturer's published instructions for the installed equipment. Also test these same circuits conductor-to-ground.	
-	(4) Loop resistance	X	N/A	With each initiating and indicating circuit installation conductor pair short-circuited at the far end, measure and record the resistance of each circuit. Verify that the loop resistance does not exceed the limits specified in the manufacturer's published instructions for the installed equipment.	
-	(5) Circuit integrity	X	N/A	For initial and reacceptance testing, confirm the introduction of a fault in any circuit monitored for integrity results in a trouble indication at the fire alarm control unit. Open one connection at not less than 10 percent of the initiating devices, notification appliances and controlled devices on every initiating device circuit, notification appliance circuit, and signaling line circuit. Confirm all circuits perform as indicated in Sections 23.5, 23.6, and 23.7.	
	-	-	N/A	Annually	For pe testing each i device notifica applia circuit, signali circuit correc

-	Component	Initial Acceptance	Periodic Frequency	Method	
					indicat the co unit. C all circ perfor indicat Sectio 23.6, a 23.7.
16.	Nonmetallic pathways	-	-	-	
-	(1) Optical fiber cables	X	N/A	Test the transmission characteristics of optical fibers by the use of an optical power meter or by an optical time domain reflectometer used to measure the relative power loss of the line. Test result data must meet or exceed ANSI/TIA 568.3, *Optical Fiber Cabling and Components Standard*, related to fiber-optic lines and connection/splice losses and the control unit manufacturer's published specifications.	
-	(2) Circuit integrity	X	N/A	For initial and reacceptance testing, confirm the introduction of a fault in any circuit monitored for integrity results in a trouble indication at the fire alarm control unit. Open one connection at not less than 10 percent of the initiating devices, notification appliances, and controlled devices on every initiating device circuit, notification appliance circuit, and signaling line circuit. Confirm all circuits perform as indicated in Sections 23.5, 23.6, and 23.7.	

		Component	Initial Acceptance	Periodic Frequency	Method	
		-	-	N/A	Annually	For pe testing each i device notifica applia circuit, signali circuit correc indicat the co unit. C all circ perfor indicat Sectio 23.6, a 23.7.
17.	Initiating devices[i]	-	-	-		
	-	(1) Electromechanical releasing device	-	-	-	
	-	(a) Nonrestorable-type link	X	Annually	Verify correct operation by removal of the fusible link and operation of the associated device.	
	-	(b) Restorable-type link[j]	X	Annually	Verify correct operation by removal of the fusible link and operation of the associated device.	
	-	(2) Fire extinguishing system(s) or suppression system(s) alarm switch	X	Annually	Operate the switch mechanically or electrically and verify receipt of signal by the fire alarm control unit.	
	-	(3) Fire–gas and other detectors	X	Annually	Test fire–gas detectors and other fire detectors as prescribed by the manufacturer and as necessary for the application.	
	-	(4) Heat detectors	-	-	-	
	-	(a) Fixed-temperature, rate-of-rise, rate of compensation, restorable line, spot type	X	Annually (see 14.4.4.5)	Perform heat test with a listed and labeled heat source or in accordance with the manufacturer's published instructions.	

		Component	Initial Acceptance	Periodic Frequency	Method
		(excluding pneumatic tube type)			Assure that the test method for the installed equipment does not damage the nonrestorable fixed-temperature element of a combination rate-of-rise/fixed-temperature element detector.
		(b) Fixed-temperature, nonrestorable line type	X	Annually	Do not perform heat test. Test functionality mechanically and electrically. Measure and record loop resistance. Investigate changes from acceptance test.
		(c) Fixed-temperature, nonrestorable spot type	X	See Method	After 15 years from initial installation, replace all devices or have 2 detectors per 100 laboratory tested. Replace the 2 detectors with new devices. If a failure occurs on any of the detectors removed, remove and test additional detectors to determine either a general problem involving faulty detectors or a localized problem involving 1 or 2 defective detectors.
		(d) Restorable line type, pneumatic tube only	X	Annually	Perform heat tests (where test chambers are in circuit), with a listed and labeled heat source or in accordance with the

-	Component	Initial Acceptance	Periodic Frequency	Method
				manufacturer's published instructions of the detector or conduct a test with pressure pump.
-	(e) Single- and multiple-station heat alarms	X	Annually	Conduct functional tests according to manufacturer's published instructions. Do not test nonrestorable heat detectors with heat.
-	(5) Manual fire alarm boxes	X	Annually	Operate manual fire alarm boxes per the manufacturer's published instructions. Test both key-operated presignal and general alarm manual fire alarm boxes.
-	(6) Radiant energy fire detectors	X	Semiannually	Test flame detectors and spark/ember detectors in accordance with the manufacturer's published instructions to determine that each detector is operative.
			-	-
			-	-
			-	-
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
-	(7) Smoke detectors — functional test	-	-	-
-	(a) In other than one- and two-family dwellings, system detectors	X	Annually	[k]Test smoke detectors in place to ensure smoke entry into the sensing chamber and an alarm response. Use smoke or a listed and labeled product acceptable to the manufacturer or in accordance with their published instructions. Other methods listed in the manufacturer's published instructions that ensure smoke entry from the protected area, through the vents, into

-	Component	Initial Acceptance	Periodic Frequency	Method
				the sensing chamber can be used.
-	(b) Single- and multiple-station smoke alarms connected to protected premises systems	X	Annually	Perform a functional test on all single- and multiple-station smoke alarms connected to a protected premises fire alarm system by putting the smoke alarm into an alarm condition.
-	(c) System smoke detectors used in one- and two-family dwellings	X	Annually	Conduct functional tests according to manufacturer's published instructions.
-	(d) Air sampling	X	Annually	Test with smoke or a listed and labeled product acceptable to the manufacturer or in accordance with their published instructions. In the absence of an automatic, listed airflow supervision feature, test from the end sampling port or point on each pipe run and verify airflow through all other ports or points.
-	(e) Duct type	X	Annually	In addition to the testing required in Table 14.4.3.2(17)(7)(a) and Table 14.4.3.2(17)(8), test duct smoke detectors that use sampling tubes to ensure that they will properly sample the airstream in the duct using a method acceptable to the manufacturer or in accordance with their published instructions.
-	(f) Projected beam type	X	Annually	Test the detector by introducing smoke, other aerosol, or an optical filter into the beam path.
-	(g) Smoke detector with built-in thermal element	X	Annually	Operate both portions of the detector independently as described for the

-	Component	Initial Acceptance	Periodic Frequency	Method
				respective devices.
-	(h) Smoke detectors with control output functions	X	Annually	Verify that the control capability remains operable even if all of the initiating devices connected to the same initiating device circuit or signaling line circuit are in an alarm state.
-	(8) Smoke detectors — sensitivity testing	-	-	-
-	In other than one- and two-family dwellings, system detectors	N/A	See 14.4.4.3	lPerform any of the following tests to ensure that each smoke detector is within its listed and marked sensitivity range:
			-	-
			-	-
			-	-
			-	-
			-	-
-	(9) Carbon monoxide detectors/carbon	-	-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
	monoxide alarms connected to protected premises systems			
-	(a) CO entry test	X	Annually	Test the devices in place to ensure CO entry to the sensing chamber by introduction through the vents, to the sensing chamber of listed and labeled product acceptable to the manufacturer or in accordance with manufacturer's published instructions
-	(b) Air sampling	X	Annually	Per test methods documented in the manufacturer's published instructions, verify detector alarm response through the end sampling port on each pipe run; verify airflow through all other ports as well.
-	(c) Duct type	X	Annually	Test or inspect air duct detectors to ensure that the device will sample the airstream in accordance with the manufacturer's published instructions.
-	(d) CO detector with control output functions	X	Annually	Within each protected space, verify that the control capability remains operable even if all of the initiating devices connected to the same initiating device circuit or signaling line circuit are in an alarm state.
-	(10) Initiating devices, supervisory	-	-	-
-	(a) Control valve switch	X	Semiannual	Operate valve and verify signal receipt to be within the first two revolutions of the handwheel or within one-fifth of the travel distance, or per the

-	Component	Initial Acceptance	Periodic Frequency	Method
				manufacturer's published instructions. Continue to cycle outside stem and yoke valves and verify switch does not reset during full travel of the valve stem.
-	(b) High- or low-air pressure switch	X	Annually	Operate switch and verify receipt of signal is obtained where the required pressure is increased or decreased a maximum 10 psi (70 kPa) from the required pressure level or in accordance with manufacturer's published instructions.
-	(c) Steam pressure	X	Annually	Operate switch and verify receipt of signal is obtained before pressure decreases to 110 percent of the minimum operating pressure of the steam-operated equipment.
-	(d) Pressure supervisory devices for other sources	X	Annually	Operate switch and verify receipt of signal is obtained where the required pressure is increased or decreased from the normal operating pressure by an amount specified in approved design documents.
-	(e) Room temperature switch	X	Annually	Operate switch and verify receipt of signal to indicate the decrease in room temperature to 40°F (4.4°C) and its restoration to above 40°F (4.4°C).
-	(f) Water level switch	X	Annually	Operate switch and verify receipt of signal indicating the water level raised or lowered a maximum 3 in. (70 mm) from the required level within a pressure tank, or a

-	Component	Initial Acceptance	Periodic Frequency	Method
				maximum 12 in. (300 mm) from the required level of a nonpressure tank. Also verify its restoral to required level.
-	(g) Water temperature switch	X	Annually	Operate switch and verify receipt of signal to indicate the decrease in water temperature to 40°F (4.4°C) and its restoration to above 40°F (4.4°C).
-	(11) Mechanical, electrosonic, or pressure-type waterflow device	X	Semiannually	Water shall be flowed through an inspector's test connection indicating the flow of water equal to that from a single sprinkler of the smallest orifice size installed in the system or other listed and approved waterflow switch test methods for wet-pipe systems, or an alarm test bypass connection for dry-pipe, pre-action, or deluge systems in accordance with NFPA 25.
-	(12) Multi-sensor fire detector or multi-criteria fire detector or combination fire detector	X	Annually	1. Test each detector in accordance with the manufacturer’s published instructions. Test each of the sensors present within the detector (e.g., smoke/heat/CO, etc.) independently for the specific detection principle, regardless of the configuration status at the time of testing, or individual sensors together if the technology allows individual sensor responses to be verified, or where sensors cannot be tested individually, test the primary sensor.[m]

	Component	Initial Acceptance	Periodic Frequency	Method
18.	Special hazard equipment			
	(1) Abort switch (dead-man type)	X	Annually	Operate abort switch and verify correct sequence and operation.

		Component	Initial Acceptance	Periodic Frequency	Method
-		(2) Abort switch (recycle type)	X	Annually	Operate abort switch and verify development of correct matrix with each sensor operated.
-		(3) Abort switch (special type)	X	Annually	Operate abort switch and verify correct sequence and operation in accordance with authority having jurisdiction. Observe sequencing as specified on as-built drawings or in system owner's manual.
-		(4) Cross-zone detection circuit	X	Annually	Operate one sensor or detector on each zone. Verify occurrence of correct sequence with operation of first zone and then with operation of second zone.
-		(5) Matrix-type circuit	X	Annually	Operate all sensors in system. Verify development of correct matrix with each sensor operated.
-		(6) Release solenoid circuit[n]	X	Annually	Verify operation of solenoid.
-		(7) Squibb release circuit	X	Annually	Use AGI flashbulb or other test light approved by the manufacturer. Verify operation of flashbulb or light.
-		(8) Verified, sequential, or counting zone circuit	X	Annually	Operate required sensors at a minimum of four locations in circuit. Verify correct sequence with both the first and second detector in alarm.
-		(9) All above devices or circuits or combinations thereof	X	Annually	Verify supervision of circuits by creating an open circuit.
19.	Combination systems	-	-	-	

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(1) Fire extinguisher electronic monitoring device/system	X	Annually	Test communication between the device connecting the fire extinguisher electronic monitoring device/system and the fire alarm control unit to ensure proper signals are received at the fire alarm control unit and remote annunciator(s) if applicable.
-	(2) Carbon monoxide device/system	X	Annually	Test communication between the device connecting the carbon monoxide device/system and the fire alarm control unit to ensure proper signals are received at the fire alarm control unit and remote annunciator(s) if applicable.
20.	Interface equipment[o]	X	See 14.4.4.4	Test interface equipment connections by operating or simulating the equipment being supervised. Verify signals required to be transmitted are received at the control unit. Test frequency for interface equipment is the same as the frequency required by the applicable NFPA standard(s) for the equipment being supervised.
21.	Guard's tour equipment	X	Annually	Test the device in accordance with the manufacturer's published instructions.

-	Component	Initial Acceptance	Periodic Frequency	Method	
22.	Alarm notification appliances	-	-	-	
-	(1) Audible[p]	X	N/A	For initial and reacceptance testing, measure sound pressure levels for alert tone signals and evacuation signal tones with a sound level meter meeting ANSI/ASAS1.4/Part 1, *Electroacoustics — Sound Level Meters — Part 1: Specifications,* Type 2 requirements. Measure sound pressure levels to determine if they are in compliance with Chapter 18 and the required performance, as documented per 7.3.4. Set the sound level meter in accordance with ANSI/ASA S3.41, *Audible Emergency Evacuation (E2) and Evacuation Signals with Relocation Instructions (ESRI),* using the time-weighted characteristic F (FAST).	
	-	-	N/A	Annually	[q]For p testing the op of the notifica applia
-	(2) Audible textual notification appliances (loudspeakers and other appliances to convey voice messages)	X	N/A	For initial and reacceptance testing, measure sound pressure levels for signals with a sound level meter meeting ANSI/ASAS1.4/Part 1, *Electroacoustics — Sound Level Meters — Part 1: Specifications,* Type 2 requirements. Measure sound	

-	Component	Initial Acceptance	Periodic Frequency	Method	
				pressure levels throughout the protected area to determine if they are in compliance with Chapter 18 and the required performance, as documented per 7.3.4. Set the sound level meter in accordance with ANSI/ASA S3.41, *Audible Emergency Evacuation (E2) and Evacuation Signals with Relocation Instructions (ESRI),* using the time-weighted characteristic F (FAST).	
			-	-	
	-	-	N/A	Annually	[q]For p testing the op of the notifica applia
-	(3) Visual	X	N/A	Perform initial and reacceptance testing in accordance with the manufacturer's published instructions. Verify appliance locations to be per approved layout and confirm that no floor plan changes affect the approved layout. Verify the candela rating or method of candela control marking on each visual appliance and rating when reported by the FACU agrees with the approved drawings. Confirm that each appliance flashes.	

		Component	Initial Acceptance	Periodic Frequency	Method	
	-	-	-	N/A	Annually	For pe testing that ea applia flashes
23.	Exit marking audible notification appliance	X	Annually	Perform tests in accordance with manufacturer's published instructions.		
24.	Emergency control functions[r]	X	Annually	For initial, reacceptance, and periodic testing, verify emergency control function interface device activation. Where an emergency control function interface device is disabled or disconnected during initiating device testing, verify that the disabled or disconnected emergency control function interface device has been properly restored, including electromagnetic devices used for door releasing services as part of a fire alarm system.		
25.	Two-way emergency communications systems	X	Annually	Use the manufacturer’s published instructions and the as-built drawings provided by the system supplier to verify correct operation after the initial testing phase has been		

-	Component	Initial Acceptance	Periodic Frequency	Method
			performed by the supplier or by the supplier's designated representative.	
			-	-
			-	-
			-	-
			-	-
			-	-
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
26. Special procedures	-	-	-	
-	(1) Alarm verification	X	Annually	Verify time delay and alarm response for smoke detector circuits identified as having alarm verification.
-	(2) Multiplex systems	X	Annually	Verify communications between sending and receiving units under both primary and secondary power.
			-	-
			-	-
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
27.	Supervising station alarm systems — receiving equipment	-	-	-
-	(1) All equipment	X	Monthly	Perform tests on all system functions and features in accordance with the equipment manufacturer's published instructions for correct operation in conformance with the applicable sections of Chapter 26.
			-	-
			-	-
-	(2) Digital alarm communicator receiver (DACR)	X	Monthly	Disconnect each transmission means in turn from the DACR, and verify audible and visual annunciation of a trouble signal in the supervising station.
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(3) Digital alarm radio receiver (DARR)	X	Monthly	Cause the following conditions of all DARRs on all subsidiary and repeater station receiving equipment. Verify receipt at the supervising station of correct signals for each of the following conditions:
			-	-
			-	-
			-	-
			-	-
			-	-
-	(4) McCulloh systems	X	Monthly	Test and record the current on each circuit at each supervising and subsidiary station under the following conditions:
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
			-	-
			-	-
			-	-
			-	-
-	(5) Radio alarm supervising station receiver (RASSR) and radio alarm repeater station receiver (RARSR)	X	Monthly	Cause each of the following conditions at each of the supervising or subsidiary stations and all repeater station radio transmitting and receiving equipment; verify receipt of correct signals at the supervising station:
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
-	(6) Private microwave radio systems	X	Monthly	Cause each of the following conditions at each of the supervising or subsidiary stations and all repeater station radio transmitting and receiving equipment; verify receipt of correct signals at the supervising station:
			-	-
			-	-
			-	-
			-	-
-	(7) Performance-based technologies	X	Monthly	Perform tests to ensure the monitoring of integrity of the transmission technology and technology path. Where a single communications path is used, disconnect the communication path. Verify that failure of the path is annunciated at the supervising station within 60 minutes of the failure (within 5 minutes for communication equipment installed prior to adoption of the 2013 edition of *NFPA 72*). Restore the communication path. Where multiple

-	Component	Initial Acceptance	Periodic Frequency	Method
				communication paths are used, disconnect both communication paths and confirm that failure of the path is annunciated at the supervising station within not more than 6 hours of the failure (within 24 hours for communication equipment installed prior to adoption of the 2013 edition of *NFPA 72*). Restore both communication paths.
28.	Public emergency alarm reporting system transmission equipment	-	-	-	
-	(1) Publicly accessible alarm box	X	Semiannually	Actuate publicly accessible initiating device(s) and verify receipt of not less than three complete rounds of signal impulses. Perform this test under normal circuit conditions. If the device is equipped for open circuit operation (ground return), test it in this condition as one of the semiannual tests.
-	(2) Auxiliary box	X	Annually	Test each initiating circuit of the auxiliary box by actuation of a protected premises initiating device connected to that circuit. Verify receipt of not less than three complete rounds of signal impulses.
-	(3) Master box	-	-	-
-	(a) Manual operation	X	Semiannually	Perform the tests prescribed for 28(1).
-	(b) Auxiliary operation	X	Annually	Perform the tests prescribed for 28(2).

-	Component	Initial Acceptance	Periodic Frequency	Method
29.	Low-power radio (wireless systems)	X	N/A	The following procedures describe additional acceptance and reacceptance test methods to verify wireless protection system operation:

-	Component	Initial Acceptance	Periodic Frequency	Method
-			-	-
-			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
30. Mass notification systems	-	-	-	
-	(1) Functions	X	Annually	At a minimum, test control unit to verify correct receipt of alarm, supervisory, and trouble signals (inputs); operation of evacuation signals and auxiliary functions (outputs); circuit supervision, including detection of open circuits and ground faults; and power supply supervision for

-	Component	Initial Acceptance	Periodic Frequency	Method
				detection of loss of ac power and disconnection of secondary batteries.
-	(2) Fuses	X	Annually	Verify the rating and supervision.
-	(3) Interfaced equipment	X	Annually	Verify integrity of single or multiple circuits providing interface between two or more control units. Test interfaced equipment connections by operating or simulating operation of the equipment being supervised. Verify signals required to be transmitted at the control unit.
-	(4) Lamps and LEDs	X	Annually	Illuminate lamps and LEDs.
-	(5) Primary (main) power supply	X	Annually	Disconnect all secondary (standby) power and test under maximum load, including all alarm appliances requiring simultaneous operation. Reconnect all secondary (standby) power at end of test. For redundant power supplies, test each separately.
-	(6) Audible textual notification appliances (loudspeakers and other appliances to convey voice messages)	X	Annually	Measure sound pressure level with a sound level meter meeting ANSI/ASAS1.4/Part 1, *Electroacoustics — Sound Level Meters — Part 1: Specifications,* Type 2 requirements. Measure and record levels throughout protected area. Set the sound level meter in accordance with ANSI/ASA S3.41, *Audible Emergency Evacuation (E2) and Evacuation Signals*

	Component	Initial Acceptance	Periodic Frequency	Method
				with Relocation Instructions (ESRI), using the time-weighted characteristic F (FAST). Record the maximum output when the audible emergency evacuation signal is on.
	(7) Visual	X	Annually	Perform test in accordance with manufacturer's published instructions. Verify appliance locations to be per approved layout and confirm that no floor plan changes affect the approved layout. Verify the candela rating or method of candela control marking on each visual appliance and rating when reported by the FACU agrees with the approved drawings. Confirm that each appliance flashes.
	(8) Control unit functions and no diagnostic failures are indicated	X	Annually	Review event log file and verify that the correct events were logged. Review system diagnostic log file; correct deficiencies noted in file. Delete unneeded log files. Delete unneeded error files. Verify that sufficient free disk space is available. Verify unobstructed flow of cooling air is available. Change/clean filters, cooling fans, and intake vents.

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(9) Control unit reset	X	Annually	Power down the central control unit computer and restart it.
-	(10) Control unit security	X	Annually	If remote control software is loaded onto the system, verify that it is disabled to prevent unauthorized system access.
-	(11) Audible/visual functional test	X	Annually	Send out an alert to a diverse set of predesignated receiving devices and confirm receipt. Include at least one of each type of receiving device.
-	(12) Software backup	X	Annually	Make full system software backup. Rotate backups based on accepted practice at site.
-	(13) Secondary power test	X	Annually	Disconnect ac power. Verify the ac power failure alarm status on central control unit. With ac power disconnected, verify battery voltage under load.
-	(14) Wireless signals	X	Annually	Check forward/reflected radio power is within specifications.
-	(15) Antenna	X	Annually	Check forward/reflected radio power is within specifications. Verify solid electrical connections with no observable corrosion.
-	(16) Transceivers	X	Annually	Verify proper operation and mounting is not compromised.

[a]Some transmission equipment (such as, but not limited to, cable modems, fiber-optic interface nodes, and VoIP interfaces) are typically powered by the building's electrical system using a secondary (standby) power supply that does not meet the requirements of this Code. This is intended to ensure that the testing authority verifies full secondary (standby) power as required by Chapter 10. Additionally, refer to Table 14.4.3.2, items 7 through 9, for secondary (standby) power supply testing.

[b]The automatic transmission of the check-in (handshake) signal can take up to 60 minutes to occur.

[c]See Table 14.4.3.2, Item 4(1) for the testing of transmission equipment.

[d]The battery tests in Table 14.4.3.2, Item 9, are based on VRLA batteries and it is the intent that the tests specified in (1) through (4) be performed in order. FACU automated load testing of VRLA batteries in accordance with Table 14.4.3.2, Item 9(5), with record of ambient temperature is an acceptable alternative to prescriptive manual methods using test equipment. For other secondary battery types, refer to the battery manufacturer's published instructions or IEEE 450, *Recommended Practice for Maintenance, Testing, and Replacement of Vented Lead-Acid Batteries for Stationary Applications*, for vented lead-acid batteries, and IEEE 1106, *Recommended Practice for Installation, Maintenance, Testing, and Replacement of Vented Nickel-Cadmium Batteries for Stationary Applications*, for nickel-cadmium batteries.

[e]If the charger is adjustable, adjust the output voltage to 2.265 volts per cell ±0.015 volts at 77°F (25°C) or as specified by the alarm equipment manufacturer.

[f]See A.14.4.3.2 Item 9(4). A load test per Item 9(5) is permitted in lieu of an ohmic test.

[g]See A.14.4.3.2 Item 9(5).

[h]The voltmeter sensitivity has been changed from 1000 ohms per volt to 100 ohms per volt so that the false ground readings (caused by induced voltages) are minimized.

[i]Initiating devices such as smoke detectors used for elevator recall, closing dampers, or releasing doors held in the open position that are permitted by the Code *(see9.6.3 of NFPA 101)* to initiate supervisory signals at the fire alarm control unit (FACU) should be tested at the same frequency (annual) as those devices when they are generating an alarm signal. They are not supervisory devices, but they initiate a supervisory signal at the FACU.

[j]Fusible thermal link detectors are commonly used to close fire doors and fire dampers electrically connected to the fire alarm control unit. They are actuated by the presence of external heat, which causes a solder element in the link to fuse, or by an electric thermal device, which, when energized, generates heat within the body of the link, causing the link to fuse and separate.

[k]Note, it is customary for the manufacturer of the smoke detector to test a particular product from an aerosol provider to determine acceptability for use in smoke entry testing of their smoke detector/smoke alarm. Magnets are not acceptable for smoke entry tests.

[l] There are some detectors that use magnets as a manufacturer's calibrated sensitivity test instrument.

[m]For example, it might not be possible to individually test the heat sensor in a thermally enhanced smoke detector.

[n]Manufacturer's published instructions should be consulted to ensure a proper operational test. No suppression gas or agent is expected to be discharged during the test of the solenoid. *See Test Plan of 14.2.10*.

[o]A monitor module installed on an interface device is not considered a supervisory device and therefore not subject to the quarterly testing frequency requirement. Test frequencies for interface devices should be in accordance with the applicable standard. For example, fire pump controller alarms such as phase reversal are required to be tested annually. If a monitor module is installed to identify phase reversal on the fire alarm control unit, it is not necessary to test for phase reversal four times a year.

[p]Chapter 18 would require 15 dB over average ambient sound for public mode spaces. Sometimes the ambient sound levels are different from what the design was based upon. Private operating mode would require 10 dB over average ambient at the location of the device.

[q]Where building, system, or occupancy changes have been observed, the owner should be

notified of the changes. New devices might need to be installed and tested per the initial acceptance testing criteria.

[r]See A.14.4.3.2 and Table 14.4.3.2, Item 24.

Statement of Problem and Substantiation for Public Input

Not many people read the footnotes and many question if they are enforceable

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Committee Statement

Resolution: FR-5349-NFPA 72-2022

Statement: Item 17(7)(A) - The new sentence is moved from footnote K to the table to make it more visible to the user.

Items 8 and 9, note c - Secondary batteries have become more of an issue for fire alarm systems. NFPA 72, during the last cycle, added requirements for batteries to be listed or component recognized. Chargers used today can offer so much more information, verification, testing data, etc. for the batteries connected to the system. This option allows manufacturers to have their FACUs listed to offer these functions and if a listing should be deemed equivalent to the use of battery testers. This is similar to smoke detector sensitivity testing where a FACU can provide that testing is listed for the purpose.

Items 9 (2) and 9(4), note e and note f - A task group was set up to conduct an extensive, detailed review of each table footnote and determined what could be moved into the testing table itself and what should remain as a table footnote. In accordance with the Manual of Style, mandatory language should reside in the table and not in the footnote.

Item 17(4)(c) - The sentence was revised to clarify the functional testing methods.

Item 18 - The testing of abort switches currently refers to the sequence of operation for development of and/or verification of the system sequence of operation for simple abort function. The test requirement is vague and the sequence of operation should have already been determined prior to acceptance testing. This revision clarifies the testing of an abort switch.

Items 4(6), 10, 17(11) - Manual of style does not permit requirements in tables.

Public Input No. 58-NFPA 72-2022 [Section No. 14.4.3.2]

14.4.3.2*

Systems and associated equipment shall be tested according to Table 14.4.3.2.

Table 14.4.3.2 Testing

-	Component	Initial Acceptance	Periodic Frequency	Method
1. All equipment	X	-		See Table 14.3.1.
2. Control unit	-	-	-	
-	(1) Functions	X	Annually	Verify correct receipt of alarm, supervisory, and trouble signals (inputs); operation of evacuation signals and auxiliary functions (outputs); circuit supervision, including detection of open circuits and ground faults; and power supply supervision for detection of loss of ac power and disconnection of secondary batteries.
-	(2) Fuses	X	Annually	Verify rating and supervision.
-	(3) Interfaced equipment	X	Annually	Verify integrity of single or multiple circuits providing interface between two or more control units. Test interfaced equipment connections by operating or simulating operation of the equipment being supervised. Verify signals required to be transmitted at the control unit.
-	(4) Lamps and LEDs	X	Annually	Illuminate lamps and LEDs.
-	(5) Primary (main) power supply	X	Annually	Disconnect all secondary (standby) power and test under maximum load, including all alarm appliances requiring simultaneous operation. Reconnect all secondary (standby) power at end of test. Test redundant power supplies separately.

-	Component	Initial Acceptance	Periodic Frequency	Method
3.	Alarm control unit trouble signals	-	-	-
-	(1) Audible and visual	X	Annually	Verify operation of control unit trouble signals. Verify ring-back feature for systems using a trouble-silencing switch that requires resetting.
-	(2) Disconnect switches	X	Annually	If control unit has disconnect or isolating switches, verify performance of intended function of each switch. Verify receipt of trouble signal when a supervised function is disconnected.
-	(3) Ground-fault monitoring circuit	X	Annually	If the system has a ground detection feature, verify the occurrence of ground-fault indication whenever any installation conductor is grounded.
-	(4) Transmission of signals to off-premises location	X	Annually	Actuate an initiating device and verify receipt of alarm signal at the off-premises location.
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
4. Supervising station alarm systems — transmission equipment	-	-	-	
-	(1) All equipment	X	Annually	[a]Test all system functions and features in accordance with the equipment manufacturer's published instructions for correct operation in conformance with the applicable sections of Chapter 26.
			-	-
			-	-
-	(2) Digital alarm communicator transmitter (DACT)	X	Annually	Except for DACTs installed prior to adoption of the 2013 edition of NFPA 72 that are connected to a telephone line

-	Component	Initial Acceptance	Periodic Frequency	Method
				(number) that is also supervised for adverse conditions by a derived local channel, ensure connection of the DACT to two separate means of transmission.
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(3) Digital alarm radio transmitter (DART)	X	Annually	Disconnect the primary telephone line. Verify transmission of a trouble signal to the supervising station by the DART occurs within 4 minutes.
-	(4) McCulloh transmitter	X	Annually	Actuate initiating device. Verify production of not less than three complete rounds of not less than three signal impulses each by the McCulloh transmitter.

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			(2) Ground	
			-	-
			-	-
			-	-
			-	-
			(2) Ground	
			-	-
-	(5) Radio alarm transmitter (RAT)	X	Annually	Cause a fault between elements of the transmitting equipment. Verify indication of the fault at the protected premises, or transmission of trouble signal to the supervising station.
-	(6) Performance-based technologies	X	Annually	Perform tests to ensure the monitoring of integrity of the transmission technology and technology path. Where shared communications equipment is used as permitted by 26.6.3.12, ~~provided~~ test secondary

-	Component	Initial Acceptance	Periodic Frequency	Method
				(standby) power ~~sources shall be tested in~~ sources in accordance with Table 14.4.3.2, item 7, 8, or 9, as applicable.

-	Component	Initial Acceptance	Periodic Frequency	Method
5.	Emergency communications equipment	-	-	-
-	(1) Amplifier/tone generators	X	Annually	Verify correct switching and operation of backup equipment.
-	(2) Call-in signal silence	X	Annually	Operate/function and verify receipt of correct visual and audible signals at control unit.
-	(3) Off-hook indicator (ring down)	X	Annually	Install phone set or remove phone from hook and verify receipt of signal at control unit.
-	(4) Phone jacks	X	Annually	Visually inspect phone jack and initiate communications path through jack.
-	(5) Phone set	X	Annually	Actuate each phone set and verify correct operation.
-	(6) System performance	X	Annually	Operate the system with a minimum of any five handsets simultaneously. Verify voice quality and clarity.
6.	Engine-driven generator	X	Monthly	If an engine-driven generator dedicated to the system is used as a required power source, verify operation of the generator and transfer switch in accordance with NFPA 110 by the building owner.
7.	Emergency power supply system/stored-emergency power supply system (EPSS/SEPSS)	X	Annually	If an EPSS/SEPSS dedicated to the system is used as a required power source, verify by the building owner operation of the

-	Component	Initial Acceptance	Periodic Frequency	Method	
			EPSS/SEPSS in accordance with NFPA 111.		
8.	Secondary (standby) power supply[c]	X	Annually	Disconnect all primary (main) power supplies and verify the occurrence of required trouble indication for loss of primary power. Measure or verify the system's standby and alarm current demand using the equipment manufacturer's data and verify the battery's rated capacity exceeds the system's power demand, including the safety margin. Operate general alarm systems a minimum of 5 minutes and emergency voice communications systems for a minimum of 15 minutes. Reconnect primary (main) power supply at end of test.	
9.	VRLA battery and charger[d]	-	-		Prior t conduc any ba testing by the conduc test, th system softwa stored volatile memo protec loss.

-		Component	Initial Acceptance	Periodic Frequency	Method
-		(1) Temperature test	X	Semiannually	Upon initially opening the cabinet door, measure the internal ambient temperature of the enclosure. Measure the temperature of each battery cell/unit at the negative terminal with an infrared thermometer. Replace any battery cell/unit if its temperature is greater than 18°F (10°C) above the measured internal ambient temperature of the enclosure.
-		(2) Charger test[e]	X	Semiannually	With the battery fully charged and connected to the charger, measure the voltage across the battery with a voltmeter. Verify the voltage is within the battery/alarm equipment manufacturer's recommendations. If the voltage is outside of the specified limits, either adjust the charger to within limits or replace the charger.
-		(3) Cell/Unit voltage test	X	Semiannually	With the battery fully charged and connected to the charger, measure the voltage of each cell/unit with a voltmeter. Replace the battery when any cell/unit measures a voltage less than 13.26 volts.
-		(4) Ohmic test[f]	X	N/A	When the battery is installed, establish a baseline ohmic value for each battery cell/unit or where available use baseline ohmic values provided by the battery or test equipment

-	Component	Initial Acceptance	Periodic Frequency	Method	
				manufacturer. In either case record the base line ohmic value on each battery cell/unit.	
		-	-	-	Semia
-	(5) Replacement/Load test[g]	-		3 years	Replac battery condu test of battery capaci test th based

-	Component	Initial Acceptance	Periodic Frequency	Method	
					manuf specifi for a d rate of or mor applyi curren indicat the se hourly discha contin until th termin voltag decrea the en voltag specifi the manuf Recor test du and ca the ba capaci includi adjust ambie tempe Repla battery capaci less th equal or at th sched interva battery capaci less th
10.	Public emergency alarm reporting system — wired system	X	Daily	~~Manual tests of the~~ Manually test the power supply for public reporting circuits ~~shall be made and recorded at~~ and document the tests at least once during each 24-hour period. ~~Such tests shall include~~ Test the	

-	Component	Initial Acceptance	Periodic Frequency	Method
			following:	
			-	-
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
			-	-
11.	Remote annunciators	X	Annually	Verify the correct operation and identification of annunciators. If provided, verify the correct operation of annunciator under a fault condition.
12.	Reserved	-	-	-
13.	Reserved	-	-	-
14.	Wireless communications	X	Annually	Test per the manufacturer's published instructions.
15.	Conductors — metallic	-	-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(1) Stray voltage	X	N/A	Test all installation conductors with a volt/ohmmeter to verify that there are no stray (unwanted) voltages between installation conductors or between installation conductors and ground. Verify the maximum allowable stray voltage does not exceed 1 volt ac/dc, unless a different threshold is specified in the manufacturer's published instructions for the installed equipment.
-	(2) Ground faults	X	N/A	Test all installation conductors, other than those intentionally and permanently grounded, for isolation from ground per the installed equipment manufacturer's published instructions.
-	(3) Short-circuit faults	X	N/A	Test all installation conductors, other than those intentionally connected together, for conductor-to-conductor isolation per the manufacturer's published instructions for the installed equipment. Also test these same circuits conductor-to-ground.
-	(4) Loop resistance	X	N/A	With each initiating and indicating circuit installation conductor pair short-circuited at the far end, measure and record the resistance of each circuit. Verify that the loop resistance does not exceed the limits specified in the manufacturer's published instructions for the installed

-	Component	Initial Acceptance	Periodic Frequency	Method	
				equipment.	
-	(5) Circuit integrity	X	N/A	For initial and reacceptance testing, confirm the introduction of a fault in any circuit monitored for integrity results in a trouble indication at the fire alarm control unit. Open one connection at not less than 10 percent of the initiating devices, notification appliances and controlled devices on every initiating device circuit, notification appliance circuit, and signaling line circuit. Confirm all circuits perform as indicated in Sections 23.5, 23.6, and 23.7.	
	-	-	N/A	Annually	For pe testing each i device notifica applia circuit, signali circuit correc indicat the co unit. C all circ perfor indicat Sectio 23.6, a 23.7.
16. Nonmetallic pathways	-	-	-		
-	(1) Optical fiber cables	X	N/A	Test the transmission characteristics of optical fibers by the use of an optical power meter or by an optical time domain reflectometer used to measure the relative power loss of the line. Test result data must	

		Component	Initial Acceptance	Periodic Frequency	Method	
					meet or exceed ANSI/TIA 568.3, *Optical Fiber Cabling and Components Standard*, related to fiber-optic lines and connection/splice losses and the control unit manufacturer's published specifications.	
		(2) Circuit integrity	X	N/A	For initial and reacceptance testing, confirm the introduction of a fault in any circuit monitored for integrity results in a trouble indication at the fire alarm control unit. Open one connection at not less than 10 percent of the initiating devices, notification appliances, and controlled devices on every initiating device circuit, notification appliance circuit, and signaling line circuit. Confirm all circuits perform as indicated in Sections 23.5, 23.6, and 23.7.	
				N/A	Annually	For pe testing each i device notifica applia circuit, signali circuit correc indicat the co unit. C all circ perfor indicat Sectio 23.6, a 23.7.
17.	Initiating devices[i]					

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(1) Electromechanical releasing device	-	-	-
-	(a) Nonrestorable-type link	X	Annually	Verify correct operation by removal of the fusible link and operation of the associated device.
-	(b) Restorable-type link[j]	X	Annually	Verify correct operation by removal of the fusible link and operation of the associated device.
-	(2) Fire extinguishing system(s) or suppression system(s) alarm switch	X	Annually	Operate the switch mechanically or electrically and verify receipt of signal by the fire alarm control unit.
-	(3) Fire–gas and other detectors	X	Annually	Test fire–gas detectors and other fire detectors as prescribed by the manufacturer and as necessary for the application.
-	(4) Heat detectors	-	-	-
-	(a) Fixed-temperature, rate-of-rise, rate of compensation, restorable line, spot type (excluding pneumatic tube type)	X	Annually (see 14.4.4.5)	Perform heat test with a listed and labeled heat source or in accordance with the manufacturer's published instructions. Assure that the test method for the installed equipment does not damage the nonrestorable fixed-temperature element of a combination rate-of-rise/fixed-temperature element detector.
-	(b) Fixed-temperature, nonrestorable line type	X	Annually	Do not perform heat test. Test functionality mechanically and electrically. Measure and record loop resistance. Investigate changes from acceptance test.
-	(c) Fixed-temperature, nonrestorable spot	X	See Method	After 15 years from initial installation, replace all devices or

	Component	Initial Acceptance	Periodic Frequency	Method
	type			have 2 detectors per 100 laboratory tested. Replace the 2 detectors with new devices. If a failure occurs on any of the detectors removed, remove and test additional detectors to determine either a general problem involving faulty detectors or a localized problem involving 1 or 2 defective detectors.
	(d) Restorable line type, pneumatic tube only	X	Annually	Perform heat tests (where test chambers are in circuit), with a listed and labeled heat source or in accordance with the manufacturer's published instructions of the detector or conduct a test with pressure pump.
	(e) Single- and multiple-station heat alarms	X	Annually	Conduct functional tests according to manufacturer’s published instructions. Do not test nonrestorable heat detectors with heat.
	(5) Manual fire alarm boxes	X	Annually	Operate manual fire alarm boxes per the manufacturer’s published instructions. Test both key-operated presignal and general alarm manual fire alarm boxes.

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(6) Radiant energy fire detectors	X	Semiannually	Test flame detectors and spark/ember detectors in accordance with the manufacturer's published instructions to determine that each detector is operative.
			-	-
			-	-
			-	-
			-	-
			-	-
			-	-

	Component	Initial Acceptance	Periodic Frequency	Method
	(7) Smoke detectors — functional test			
	(a) In other than one- and two-family dwellings, system detectors	X	Annually	[k]Test smoke detectors in place to ensure smoke entry into the sensing chamber and an alarm response. Use smoke or a listed and labeled product acceptable to the manufacturer or in accordance with their published instructions. Other methods listed in the manufacturer's published instructions that ensure smoke entry from the protected area, through the vents, into the sensing chamber can be used.
	(b) Single- and multiple-station smoke alarms connected to protected premises systems	X	Annually	Perform a functional test on all single- and multiple-station smoke alarms connected to a protected premises fire alarm system by putting the smoke alarm into an alarm condition.
	(c) System smoke detectors used in one- and two-family dwellings	X	Annually	Conduct functional tests according to manufacturer’s published instructions.

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(d) Air sampling	X	Annually	Test with smoke or a listed and labeled product acceptable to the manufacturer or in accordance with their published instructions. In the absence of an automatic, listed airflow supervision feature, test from the end sampling port or point on each pipe run and verify airflow through all other ports or points.
-	(e) Duct type	X	Annually	In addition to the testing required in Table 14.4.3.2(17)(7)(a) and Table 14.4.3.2(17)(8), test duct smoke detectors that use sampling tubes to ensure that they will properly sample the airstream in the duct using a method acceptable to the manufacturer or in accordance with their published instructions.
-	(f) Projected beam type	X	Annually	Test the detector by introducing smoke, other aerosol, or an optical filter into the beam path.
-	(g) Smoke detector with built-in thermal element	X	Annually	Operate both portions of the detector independently as described for the respective devices.
-	(h) Smoke detectors with control output functions	X	Annually	Verify that the control capability remains operable even if all of the initiating devices connected to the same initiating device circuit or signaling line circuit are in an alarm state.
-	(8) Smoke detectors — sensitivity testing	-	-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
-	In other than one- and two-family dwellings, system detectors	N/A	See 14.4.4.3	Perform any of the following tests to ensure that each smoke detector is within its listed and marked sensitivity range:
			-	-
			-	-
			-	-
			-	-
			-	-
-	(9) Carbon monoxide detectors/carbon monoxide alarms connected to protected premises systems	-	-	-
-	(a) CO entry test	X	Annually	Test the devices in place to ensure CO entry to the sensing chamber by introduction through the vents, to the sensing chamber of listed and labeled product acceptable to the manufacturer or in

-	Component	Initial Acceptance	Periodic Frequency	Method
				accordance with manufacturer's published instructions
-	(b) Air sampling	X	Annually	Per test methods documented in the manufacturer's published instructions, verify detector alarm response through the end sampling port on each pipe run; verify airflow through all other ports as well.
-	(c) Duct type	X	Annually	Test or inspect air duct detectors to ensure that the device will sample the airstream in accordance with the manufacturer's published instructions.
-	(d) CO detector with control output functions	X	Annually	Within each protected space, verify that the control capability remains operable even if all of the initiating devices connected to the same initiating device circuit or signaling line circuit are in an alarm state.
-	(10) Initiating devices, supervisory	-	-	-
-	(a) Control valve switch	X	Semiannual	Operate valve and verify signal receipt to be within the first two revolutions of the handwheel or within one-fifth of the travel distance, or per the manufacturer's published instructions. Continue to cycle outside stem and yoke valves and verify switch does not reset during full travel of the valve stem.
-	(b) High- or low-air pressure switch	X	Annually	Operate switch and verify receipt of signal is obtained where the required pressure is increased or decreased a

-	Component	Initial Acceptance	Periodic Frequency	Method
				maximum 10 psi (70 kPa) from the required pressure level or in accordance with manufacturer's published instructions.
-	(c) Steam pressure	X	Annually	Operate switch and verify receipt of signal is obtained before pressure decreases to 110 percent of the minimum operating pressure of the steam-operated equipment.
-	(d) Pressure supervisory devices for other sources	X	Annually	Operate switch and verify receipt of signal is obtained where the required pressure is increased or decreased from the normal operating pressure by an amount specified in approved design documents.
-	(e) Room temperature switch	X	Annually	Operate switch and verify receipt of signal to indicate the decrease in room temperature to 40°F (4.4°C) and its restoration to above 40°F (4.4°C).
-	(f) Water level switch	X	Annually	Operate switch and verify receipt of signal indicating the water level raised or lowered a maximum 3 in. (70 mm) from the required level within a pressure tank, or a maximum 12 in. (300 mm) from the required level of a nonpressure tank. Also verify its restoral to required level.
-	(g) Water temperature switch	X	Annually	Operate switch and verify receipt of signal to indicate the decrease in water temperature to 40°F (4.4°C) and its restoration to above 40°F (4.4°C).

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(11) Mechanical, electrosonic, or pressure-type waterflow device	X	Semiannually	~~Water shall be flowed~~ Flow water through an inspector's test connection indicating the flow of water equal to that from a single sprinkler of the smallest orifice size installed in the system or other listed and approved waterflow switch test methods for wet-pipe systems, or an alarm test bypass connection for dry-pipe, pre-action, or deluge systems in accordance with NFPA 25.
-	(12) Multi-sensor fire detector or multi-criteria fire detector or combination fire detector	X	Annually	1. Test each detector in accordance with the manufacturer's published instructions. Test each of the sensors present within the detector (e.g., smoke/heat/CO, etc.) independently for the specific detection principle, regardless of the configuration status at the time of testing, or individual sensors together if the technology allows individual sensor responses to be verified, or where sensors cannot be tested individually, test the primary sensor.[m]
-	-	-	-	-
-		-	-	

		Component	Initial Acceptance	Periodic Frequency	Method

-		Component	Initial Acceptance	Periodic Frequency	Method
					owner's manual.
-		(4) Cross-zone detection circuit	X	Annually	Operate one sensor or detector on each zone. Verify occurrence of correct sequence with operation of first zone and then with operation of second zone.
-		(5) Matrix-type circuit	X	Annually	Operate all sensors in system. Verify development of correct matrix with each sensor operated.
-		(6) Release solenoid circuit[n]	X	Annually	Verify operation of solenoid.
-		(7) Squibb release circuit	X	Annually	Use AGI flashbulb or other test light approved by the manufacturer. Verify operation of flashbulb or light.
-		(8) Verified, sequential, or counting zone circuit	X	Annually	Operate required sensors at a minimum of four locations in circuit. Verify correct sequence with both the first and second detector in alarm.
-		(9) All above devices or circuits or combinations thereof	X	Annually	Verify supervision of circuits by creating an open circuit.
19.	Combination systems	-	-	-	
-		(1) Fire extinguisher electronic monitoring device/system	X	Annually	Test communication between the device connecting the fire extinguisher electronic monitoring device/system and the fire alarm control unit to ensure proper signals are received at the fire alarm control unit and remote annunciator(s) if applicable.
-		(2) Carbon monoxide device/system	X	Annually	Test communication between the device connecting the carbon monoxide

-	Component	Initial Acceptance	Periodic Frequency	Method
				device/system and the fire alarm control unit to ensure proper signals are received at the fire alarm control unit and remote annunciator(s) if applicable.
20.	Interface equipment[o]	X	See 14.4.4.4	Test interface equipment connections by operating or simulating the equipment being supervised. Verify signals required to be transmitted are received at the control unit. Test frequency for interface equipment is the same as the frequency required by the applicable NFPA standard(s) for the equipment being supervised.
21.	Guard's tour equipment	X	Annually	Test the device in accordance with the manufacturer's published instructions.
22.	Alarm notification appliances	-	-	-	
-		(1) Audible[p]	X	N/A	For initial and reacceptance testing, measure sound pressure levels for alert tone signals and evacuation signal tones with a sound level meter meeting ANSI/ASAS1.4/Part 1, *Electroacoustics — Sound Level Meters — Part 1: Specifications,* Type 2 requirements.

-	Component	Initial Acceptance	Periodic Frequency	Method	
				Measure sound pressure levels to determine if they are in compliance with Chapter 18 and the required performance, as documented per 7.3.4. Set the sound level meter in accordance with ANSI/ASA S3.41, *Audible Emergency Evacuation (E2) and Evacuation Signals with Relocation Instructions (ESRI),* using the time-weighted characteristic F (FAST).	
	-	-	N/A	Annually	[q]For p testing the op of the notifica applia
-	(2) Audible textual notification appliances (loudspeakers and other appliances to convey voice messages)	X	N/A	For initial and reacceptance testing, measure sound pressure levels for signals with a sound level meter meeting ANSI/ASAS1.4/Part 1, *Electroacoustics — Sound Level Meters — Part 1: Specifications,* Type 2 requirements. Measure sound pressure levels throughout the protected area to determine if they are in compliance with Chapter 18 and the required performance, as documented per 7.3.4. Set the sound level meter in accordance with ANSI/ASA S3.41, *Audible Emergency Evacuation (E2) and Evacuation Signals with Relocation Instructions (ESRI),* using the time-	

		Component	Initial Acceptance	Periodic Frequency	Method	
					weighted characteristic F (FAST).	
				N/A	Annually	[q]For p testing the op of the notifica applia
		(3) Visual	X	N/A	Perform initial and reacceptance testing in accordance with the manufacturer's published instructions. Verify appliance locations to be per approved layout and confirm that no floor plan changes affect the approved layout. Verify the candela rating or method of candela control marking on each visual appliance and rating when reported by the FACU agrees with the approved drawings. Confirm that each appliance flashes.	
				N/A	Annually	For pe testing that ea applia flashes
23.	Exit marking audible notification appliance	X	Annually	Perform tests in accordance with manufacturer's published instructions.		
24.	Emergency control functions[r]	X	Annually	For initial, reacceptance, and periodic testing, verify emergency control function interface device		

-	Component	Initial Acceptance	Periodic Frequency	Method
			activation. Where an emergency control function interface device is disabled or disconnected during initiating device testing, verify that the disabled or disconnected emergency control function interface device has been properly restored, including electromagnetic devices used for door releasing services as part of a fire alarm system.	
25.	Two-way emergency communications systems	X	Annually	Use the manufacturer's published instructions and the as-built drawings provided by the system supplier to verify correct operation after the initial testing phase has been performed by the supplier or by the supplier's designated representative.

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
			-	-
			-	-
			-	-
26.	Special procedures	-	-	-
-	(1) Alarm verification	X	Annually	Verify time delay and alarm response for smoke detector circuits identified as having alarm verification.
-	(2) Multiplex systems	X	Annually	Verify communications between sending and receiving units under

-	Component	Initial Acceptance	Periodic Frequency	Method
				both primary and secondary power.
			-	-
			-	-
			-	-
			-	-
27.	Supervising station alarm systems — receiving equipment	-	-	-	
-		(1) All equipment	X	Monthly	Perform tests on all system functions and features in accordance with the equipment manufacturer's published instructions for correct operation in conformance with the applicable sections of Chapter 26.

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
-	(2) Digital alarm communicator receiver (DACR)	X	Monthly	Disconnect each transmission means in turn from the DACR, and verify audible and visual annunciation of a trouble signal in the supervising station.
			-	-
-	(3) Digital alarm radio receiver (DARR)	X	Monthly	Cause the following conditions of all DARRs on all subsidiary and repeater station receiving equipment. Verify receipt at the supervising station of correct signals for each of the following

-	Component	Initial Acceptance	Periodic Frequency	Method
				conditions:
			-	-
			-	-
			-	-
			-	-
			-	-
-	(4) McCulloh systems	X	Monthly	Test and record the current on each circuit at each supervising and subsidiary station under the following conditions:
			-	-
			-	-
			-	-
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
			-	-
			-	-
			-	-
-	(5) Radio alarm supervising station receiver (RASSR) and radio alarm repeater station receiver (RARSR)	X	Monthly	Cause each of the following conditions at each of the supervising or subsidiary stations and all repeater station radio transmitting and receiving equipment; verify receipt of correct signals at the supervising station:
			-	-
			-	-
			-	-
-	(6) Private microwave radio systems	X	Monthly	Cause each of the following conditions at each of the supervising or subsidiary stations and all repeater station radio transmitting and receiving equipment; verify receipt of

-	Component	Initial Acceptance	Periodic Frequency	Method
				correct signals at the supervising station:
			-	-
			-	-
			-	-
			-	-
-	(7) Performance-based technologies	X	Monthly	Perform tests to ensure the monitoring of integrity of the transmission technology and technology path. Where a single communications path is used, disconnect the communication path. Verify that failure of the path is annunciated at the supervising station within 60 minutes of the failure (within 5 minutes for communication equipment installed prior to adoption of the 2013 edition of *NFPA 72*). Restore the communication path. Where multiple communication paths are used, disconnect both communication paths and confirm that failure of the path is annunciated at the supervising station within not more than 6 hours of the failure (within 24 hours for communication equipment installed prior to adoption of the 2013 edition of *NFPA 72*). Restore both communication paths.

-	Component	Initial Acceptance	Periodic Frequency	Method
28.	Public emergency alarm reporting system transmission equipment	-	-	-	
-	(1) Publicly accessible alarm box	X	Semiannually	Actuate publicly accessible initiating device(s) and verify receipt of not less than three complete rounds of signal impulses. Perform this test under normal circuit conditions. If the device is equipped for open circuit operation (ground return), test it in this condition as one of the semiannual tests.
-	(2) Auxiliary box	X	Annually	Test each initiating circuit of the auxiliary box by actuation of a protected premises initiating device connected to that circuit. Verify receipt of not less than three complete rounds of signal impulses.
-	(3) Master box	-	-	-
-	(a) Manual operation	X	Semiannually	Perform the tests prescribed for 28(1).
-	(b) Auxiliary operation	X	Annually	Perform the tests prescribed for 28(2).
29.	Low-power radio (wireless systems)	X	N/A	The following procedures describe additional acceptance and reacceptance test methods to verify wireless protection system operation:
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method

-	Component	Initial Acceptance	Periodic Frequency	Method

-	Component	Initial Acceptance	Periodic Frequency	Method
			-	-
30. Mass notification systems	-	-	-	
-	(1) Functions	X	Annually	At a minimum, test control unit to verify correct receipt of alarm, supervisory, and trouble signals (inputs); operation of evacuation signals and auxiliary functions (outputs); circuit supervision, including detection of open circuits and ground faults; and power supply supervision for detection of loss of ac power and disconnection of secondary batteries.
-	(2) Fuses	X	Annually	Verify the rating and supervision.
-	(3) Interfaced equipment	X	Annually	Verify integrity of single or multiple circuits providing interface between two or more control units. Test interfaced equipment connections by operating or simulating operation of the equipment being supervised.

-	Component	Initial Acceptance	Periodic Frequency	Method
				Verify signals required to be transmitted at the control unit.
-	(4) Lamps and LEDs	X	Annually	Illuminate lamps and LEDs.
-	(5) Primary (main) power supply	X	Annually	Disconnect all secondary (standby) power and test under maximum load, including all alarm appliances requiring simultaneous operation. Reconnect all secondary (standby) power at end of test. For redundant power supplies, test each separately.
-	(6) Audible textual notification appliances (loudspeakers and other appliances to convey voice messages)	X	Annually	Measure sound pressure level with a sound level meter meeting ANSI/ASAS1.4/Part 1, *Electroacoustics — Sound Level Meters — Part 1: Specifications,* Type 2 requirements. Measure and record levels throughout protected area. Set the sound level meter in accordance with ANSI/ASA S3.41, *Audible Emergency Evacuation (E2) and Evacuation Signals with Relocation Instructions (ESRI),* using the time-weighted characteristic F (FAST). Record the maximum output when the audible emergency evacuation signal is on.
			-	-

-	Component	Initial Acceptance	Periodic Frequency	Method
-	(7) Visual	X	Annually	Perform test in accordance with manufacturer's published instructions. Verify appliance locations to be per approved layout and confirm that no floor plan changes affect the approved layout. Verify the candela rating or method of candela control marking on each visual appliance and rating when reported by the FACU agrees with the approved drawings. Confirm that each appliance flashes.
-	(8) Control unit functions and no diagnostic failures are indicated	X	Annually	Review event log file and verify that the correct events were logged. Review system diagnostic log file; correct deficiencies noted in file. Delete unneeded log files. Delete unneeded error files. Verify that sufficient free disk space is available. Verify unobstructed flow of cooling air is available. Change/clean filters, cooling fans, and intake vents.
-	(9) Control unit reset	X	Annually	Power down the central control unit computer and restart it.
-	(10) Control unit security	X	Annually	If remote control software is loaded onto the system, verify that it is disabled to prevent unauthorized system access.
-	(11) Audible/visual functional test	X	Annually	Send out an alert to a diverse set of predesignated receiving devices and confirm receipt.

-	Component	Initial Acceptance	Periodic Frequency	Method
				Include at least one of each type of receiving device.
-	(12) Software backup	X	Annually	Make full system software backup. Rotate backups based on accepted practice at site.
-	(13) Secondary power test	X	Annually	Disconnect ac power. Verify the ac power failure alarm status on central control unit. With ac power disconnected, verify battery voltage under load.
-	(14) Wireless signals	X	Annually	Check forward/reflected radio power is within specifications.
-	(15) Antenna	X	Annually	Check forward/reflected radio power is within specifications. Verify solid electrical connections with no observable corrosion.
-	(16) Transceivers	X	Annually	Verify proper operation and mounting is not compromised.

[a]Some transmission equipment (such as, but not limited to, cable modems, fiber-optic interface nodes, and VoIP interfaces) are typically powered by the building's electrical system using a secondary (standby) power supply that does not meet the requirements of this Code. This is intended to ensure that the testing authority verifies full secondary (standby) power as required by Chapter 10. Additionally, refer to Table 14.4.3.2, items 7 through 9, for secondary (standby) power supply testing.

[b]The automatic transmission of the check-in (handshake) signal can take up to 60 minutes to occur.

[c]See Table 14.4.3.2, Item 4(1) for the testing of transmission equipment.

[d]The battery tests in Table 14.4.3.2, Item 9, are based on VRLA batteries and it is the intent that the tests specified in (1) through (4) be performed in order. FACU automated load testing of VRLA batteries in accordance with Table 14.4.3.2, Item 9(5), with record of ambient temperature is an acceptable alternative to prescriptive manual methods using test equipment. For other secondary battery types, refer to the battery manufacturer's published instructions or IEEE 450, *Recommended Practice for Maintenance, Testing, and Replacement of Vented Lead-Acid Batteries for Stationary Applications*, for vented lead-acid batteries, and IEEE 1106, *Recommended Practice for Installation, Maintenance, Testing, and Replacement of Vented Nickel-Cadmium Batteries for Stationary Applications*, for nickel-cadmium batteries.

[e]If the charger is adjustable, adjust the output voltage to 2.265 volts per cell ±0.015 volts at 77°F (25°C) or as specified by the alarm equipment manufacturer.

[f]See A.14.4.3.2 Item 9(4). A load test per Item 9(5) is permitted in lieu of an ohmic test.

[g]See A.14.4.3.2 Item 9(5).

[h]The voltmeter sensitivity has been changed from 1000 ohms per volt to 100 ohms per volt so that the false ground readings (caused by induced voltages) are minimized.

[i]Initiating devices such as smoke detectors used for elevator recall, closing dampers, or releasing doors held in the open position that are permitted by the Code *(see9.6.3 of NFPA 101)* to initiate supervisory signals at the fire alarm control unit (FACU) should be tested at the same frequency (annual) as those devices when they are generating an alarm signal. They are not supervisory devices, but they initiate a supervisory signal at the FACU.

[j]Fusible thermal link detectors are commonly used to close fire doors and fire dampers electrically connected to the fire alarm control unit. They are actuated by the presence of external heat, which causes a solder element in the link to fuse, or by an electric thermal device, which, when energized, generates heat within the body of the link, causing the link to fuse and separate.

[k]Note, it is customary for the manufacturer of the smoke detector to test a particular product from an aerosol provider to determine acceptability for use in smoke entry testing of their smoke detector/smoke alarm. Magnets are not acceptable for smoke entry tests.

[l] There are some detectors that use magnets as a manufacturer's calibrated sensitivity test instrument.

[m]For example, it might not be possible to individually test the heat sensor in a thermally enhanced smoke detector.

[n]Manufacturer's published instructions should be consulted to ensure a proper operational test. No suppression gas or agent is expected to be discharged during the test of the solenoid. *See Test Plan of 14.2.10*.

[o]A monitor module installed on an interface device is not considered a supervisory device and therefore not subject to the quarterly testing frequency requirement. Test frequencies for interface devices should be in accordance with the applicable standard. For example, fire pump controller alarms such as phase reversal are required to be tested annually. If a monitor module is installed to identify phase reversal on the fire alarm control unit, it is not necessary to test for phase reversal four times a year.

[p]Chapter 18 would require 15 dB over average ambient sound for public mode spaces. Sometimes the ambient sound levels are different from what the design was based upon. Private operating mode would require 10 dB over average ambient at the location of the device.

[q]Where building, system, or occupancy changes have been observed, the owner should be notified of the changes. New devices might need to be installed and tested per the initial acceptance testing criteria.

[r]See A.14.4.3.2 and Table 14.4.3.2, Item 24.

Statement of Problem and Substantiation for Public Input

PI submitted by Manual of Style Task Group to improve adherence to MOS requirements.
To facilitate locating these changes in such a large table, changes were made to:
Line Item 4 (6)
Line Item 10
Line Item 17 (11)

Submitter Information Verification

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Submittal Date: Wed Jan 12 09:20:14 EST 2022
Committee: SIG-TMS

Committee Statement

Resolution: FR-5349-NFPA 72-2022

Statement: Item 17(7)(A) - The new sentence is moved from footnote K to the table to make it more visible to the user.

Items 8 and 9, note c - Secondary batteries have become more of an issue for fire alarm systems. NFPA 72, during the last cycle, added requirements for batteries to be listed or component recognized. Chargers used today can offer so much more information, verification, testing data, etc. for the batteries connected to the system. This option allows manufacturers to have their FACUs listed to offer these functions and if a listing should be deemed equivalent to the use of battery testers. This is similar to smoke detector sensitivity testing where a FACU can provide that testing is listed for the purpose.

Items 9 (2) and 9(4), note e and note f - A task group was set up to conduct an extensive, detailed review of each table footnote and determined what could be moved into the testing table itself and what should remain as a table footnote. In accordance with the Manual of Style, mandatory language should reside in the table and not in the footnote.

Item 17(4)(c) - The sentence was revised to clarify the functional testing methods.

Item 18 - The testing of abort switches currently refers to the sequence of operation for development of and/or verification of the system sequence of operation for simple abort function. The test requirement is vague and the sequence of operation should have already been determined prior to acceptance testing. This revision clarifies the testing of an abort switch.

Items 4(6), 10, 17(11) - Manual of style does not permit requirements in tables.

Public Input No. 275-NFPA 72-2022 [New Section after 14.4.3.3]

14.4.3.4 Thermal image fire detectors shall be inspected, tested, and maintained in accordance with the manufacturer's published instructions.

Statement of Problem and Substantiation for Public Input

Thermal image fire detectors are much like video image smoke and flame detectors and they should be inspected, tested, and maintenance in accordance with manufacturer's instructions. As these products become more mainstream, specific guidance can be developed. I have also submitted a definition for these products and guidance for Chapter 17.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 177-NFPA 72-2022 [New Section after 3.3.77.23]	new definition
Public Input No. 178-NFPA 72-2022 [New Section after 17.10.2.4]	new requirements

Submitter Information Verification

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Submittal Date: Fri May 06 14:37:41 EDT 2022
Committee: SIG-TMS

Committee Statement

Resolution: FR-5336-NFPA 72-2022
Statement: Thermal image fire detectors are much like video image smoke and flame detectors and they should be inspected, tested, and maintained in accordance with manufacturer's instructions.

Public Input No. 492-NFPA 72-2022 [New Section after 14.4.3.5]

TITLE OF NEW CONTENT

14.4.4 Inspection of Carbon Monoxide Alarms. Carbon monoxide alarms installed in an area or room of a commercial building that is remote from dwelling units, sleeping units, guest rooms, or guest suites shall be visually inspected according to Table 14.3.1.

14.4.5 Testing of Carbon Monoxide Alarms. Carbon monoxide alarms installed in an area or room of a commercial building that is remote from dwelling units, sleeping units, guest rooms, or guest suites shall be tested according to Table 14.4.3.2.

Table 14.3.1 Visual Inspection

Component: 17(10) Carbon monoxide alarms installed in an area or room of a commercial building that is remote from dwelling units, sleeping units, guest rooms, or guest suites

Initial Acceptance: X

Periodic Frequency: Semiannual

Method: Verify the CO alarm is installed in its *approved* location, and the CO alarm has not reached it's EOL

Reference: 14.4.4

Table 14.4.3.2 Testing

Component: 17(10)* Carbon monoxide alarms installed in an area or room of a commercial building that is remote from dwelling units, sleeping units, guest rooms, or guest suites

Initial Acceptance: X

Periodic Frequency: Annually

Method: Functionally test the device in place by using a test button ~~or by the introduction of CO gas into the sensing chamber~~ .

Reference: 14.4.5

Statement of Problem and Substantiation for Public Input

Provides methods and frequencies for the inspection and testing of Carbon Monoxide Alarms that are installed in commercial buildings.

New requirements in the 2024 edition of the International Fire Code and International Building Code will permit carbon monoxide alarms to be installed in commercial buildings that are not required to have a fire alarm system if there is a known carbon monoxide source.

Submitter Information Verification

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Submittal Date: Mon May 30 09:29:26 EDT 2022
Committee: SIG-TMS

Committee Statement

Resolution: The requirements are already addressed in 29.13.

Public Input No. 59-NFPA 72-2022 [Section No. 14.4.4.1]

14.4.4.1*

Devices or equipment that are inaccessible for safety considerations (e.g., continuous process operations, energized electrical equipment, radiation, and excessive height) shall be permitted to be tested during scheduled shutdowns if approved by the authority having jurisdiction~~.~~ ~~Extended intervals shall~~ , provided the extended intervals do not exceed 18 months.

Statement of Problem and Substantiation for Public Input

PI submitted by Manual of Style Task Group to improve adherence to MOS requirements.

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Committee: SIG-TMS

Committee Statement

Resolution: FR-5339-NFPA 72-2022
Statement: The Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text.

Public Input No. 60-NFPA 72-2022 [Section No. 14.4.4.2]

14.4.4.2

If automatic testing is performed at least weekly by a remotely monitored fire alarm control unit specifically listed for the application, the manual testing frequency shall be permitted to be extended to annually ~~.~~ and Table 14.4.3.2 ~~shall apply~~ applies .

Statement of Problem and Substantiation for Public Input

PI submitted by Manual of Style Task Group to improve adherence to MOS requirements.

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Committee: SIG-TMS

Committee Statement

Resolution: FR-5340-NFPA 72-2022
Statement: The Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text.

Public Input No. 256-NFPA 72-2022 [Section No. 14.4.4.5.5]

14.4.4.~~5.5~~ – 6

Carbon monoxide apparatus that require resetting to maintain normal operation shall be restored to normal as promptly as possible after each test and alarm and kept in normal condition for operation. All test signals received shall be recorded to indicate date and time.

Statement of Problem and Substantiation for Public Input

This clause needs to be renumbered to be 14.4.4.6 because it does not relate to heat detectors as described in the main clause (14.4.4.5). Then 14.4.4.6 and subsequent paragraphs need to be renumbered as well.

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Committee: SIG-TMS

Committee Statement

Resolution: FR-5341-NFPA 72-2022
Statement: The section number was corrected. In addition, the Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text.

Public Input No. 61-NFPA 72-2022 [Section No. 14.4.4.5.5]

14.4.4.~~5.5~~ 6

Carbon monoxide apparatus that require resetting to maintain normal operation shall be restored to normal as promptly as possible after each test and alarm and kept in normal condition for operation.

14.4.4.6.1 _

All carbon monoxide test signals received shall be recorded to indicate date and time.

Statement of Problem and Substantiation for Public Input

PI submitted by Manual of Style Task Group to improve adherence to MOS requirements.
This will require re-numbering current 14.4.4.6 to 14.4.4.7

Submitter Information Verification

Submitter Full Name: Joe Scibetta
Organization: BuildingReports
Street Address:
City:
State:
Zip:
Submittal Date: Wed Jan 12 09:54:00 EST 2022
Committee: SIG-TMS

Committee Statement

Resolution: FR-5341-NFPA 72-2022
Statement: The section number was corrected. In addition, the Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text.

Public Input No. 262-NFPA 72-2022 [Section No. 14.4.10]

14.4.10 In-Building Emergency Radio Communication Systems. (SIG-ECS)

In-building emergency radio communication systems shall be inspected and operationally tested in accordance with the requirements of ~~NFPA 1221~~ NFPA 1225 .

Statement of Problem and Substantiation for Public Input

As part of the Emergency Response and Responder Safety Document Consolidation Plan (consolidation plan) as approved by the NFPA Standards Council, NFPA 1221 has been combined into a new consolidated Standard, NFPA 1225.

Submitter Information Verification

Submitter Full Name: Rodger Reiswig
Organization: Johnson Controls
Street Address:
City:
State:
Zip:
Submittal Date: Fri Apr 29 08:57:34 EDT 2022
Committee: SIG-ECS

Committee Statement

Resolution: FR-5342-NFPA 72-2022
Statement: As part of the Emergency Response and Responder Safety Document Consolidation Plan (consolidation plan) as approved by the NFPA Standards Council, NFPA 1221 has been combined into a new consolidated Standard, NFPA 1225.

Public Input No. 20-NFPA 72-2021 [New Section after 14.4.11]

NFPA 72 - 5 year testing requirement

NFPA 72 Proposed

Additions to the 2022 Edition for 2025 edition

New code requirement / section

14.4.12- Fire Alarm 5 year ITM – ***New Section***

14.4.12.1

- **Frequency** : Every 5 years under the annual requirements of 14:14.3 and 14:14.4 additional inspection and testing as listed below shall be performed by qualified personnel in accordance with 72:10.5.3.

*14.4.12.2**

- All wiring is to be inspected in all areas, including above T-bar ceilings.

  Non accessible areas shall not be included.

  Fire Alarm wiring that is found not to be installed in accordance with NFPA 70 [70:760.24(A)(B)] and other governing codes shall be reinstalled correctly.

  A.14.4.12.2: Wiring is removed from supports for service reasons and not re-installed correctly per { **70** :760.24}

  A.14.4.12.2: Wiring installed correctly above T-Bar or Gypsum board ceilings is only checked on rough in and acceptance testing. In the following weeks, month, years, service repairs, building changes and retrofits are done to the building or structure, sometimes during the reworks, the initial installation of the fire alarm wiring is removed.

14.4.12.3

- Abandoned Fire Alarm wiring shall be tagged for future use or removed. [**70** :760.25]

*14.4.12.4**

- Accessibility of duct detectors is to be inspected. Duct Detectors that are found to be located above T-Bar ceilings that do not have visible alarm indicators as stated in 72:10.18, or meet the requirements of 72:17.4.6, 72:17.4.6.1 and 72:17.4.6.2 or a test switch installed for location identification, a remote indicator or remote indicator with test switch shall be installed.
- **Exception:** Detectors installed in concealed locations where the specific detector alarm or supervisory signal is indicated at the control unit (and on the drawings with its specific location and function) shall not be required to be provided with a remote alarm indicators as specified in [72:17.4.6.3]

  A.14.4.12.4 : Duct detectors should be installed by qualified personnel.

14.4.12.5*

- Battery Testing shall be done under full load of the fire alarm system. Testing to be performed per NFPA 72; current edition; Chapter 14, Table 14.4.3.2, subsection #8: Secondary (standby) power supply.

Secondary (standby) power supply: Disconnect all primary (main) power supplies and verify the occurrence of required trouble indication for loss of primary power. Measure or verify the system's standby and alarm current demand using the equipment manufacturer's data and verify the battery's rated capacity exceeds the system's power demand, including the safety margin. Operate general alarm systems a minimum of 5 minutes and emergency voice communications systems for a minimum of 15 minutes. Reconnect primary (main) power supply at end of test.

A.14.4.12.5: Batteries should be checked with load testers and /or meters during the annual ITM.

14.4.12.6

- All Inspection and testing methods as shown in Tables 14.3.1 and 14.4.3.2 shall be followed during the 5 year ITM.

14.4.12.6.1

- All devices shall be installed, inspected and tested as shown in tables 14.3.1 and 14.4.3.2 during the 5 year ITM.

14.4.12.6.2

- If required by the AHJ, 5 year ITM shall include the requirements of NFPA 4: Standard for Integrated Fire Protection and Life Safety System Testing.

14.4.12.6.3

- Documentation of integrated equipment testing shall be as required in 4:7.2
- Documentation of inspection and testing shall be as required in 72:7.6 14.4.12.7.1

14.4.12.7.1

- ITM tags shall be installed (placed) at the main control panel or at the documents box indicating the status of the buildings fire alarm system upon completion of the 5 year ITM.
- ITM tags shall be color coded and completed as adopted and approved by the AHJ.
- ITM tags shall be made of durable, weatherproof, colorfast materials.

..

Statement of Problem and Substantiation for Public Input

By approving the 5 year fire alarm testing requirement would ensure that the service technicians and retro / replacement installers have a good record of the existing fire alarms wiring, interconnections and operation . When most replacements are done existing wiring and devices are used / reused to lower the expense to the end user, this requirement will assist in reduction of change orders and troubleshooting of technicians thus lower site time and costs.

The end user, owner of the FA system will have confidence in their fire alarm system.

We do this for sprinkler systems for the same reasons, to ensure the system is complaint.

Submitter Information Verification

Submitter Full Name: Steven Schwartz
Organization: Consolidated Fire Protection
Street Address:

City:
State:
Zip:
Submittal Date: Mon Nov 08 18:33:40 EST 2021
Committee: SIG-TMS

Committee Statement

Resolution: No data was submitted to suggest that owners do not have confidence in their fire alarm systems with the existing inspection, testing and maintenance requirements.

Public Input No. 156-NFPA 72-2022 [New Section after 14.4.11.3]

Additions to the 2019 Edition for 2022 edition

New code requirement / section

14.4.12- Fire Alarm 5 year ITM – New Section

14.4.12.1

Frequency : Every 5 years under the annual requirements of 14:14.3 and 14:14.4 additional inspection and testing as listed below shall be performed by qualified personnel in accordance with 72:10.5.3.

14.4.12.2*

All wiring is to be inspected in all areas, including above T-bar ceilings.

Non accessible areas shall not be included.

Fire Alarm wiring that is found not to be installed in accordance with NFPA 70 [70:760.24(A)(B)] and other governing codes shall be reinstalled correctly.

A.14.4.12.2: Wiring is removed from supports for service reasons and not re-installed correctly in accordance with 70:760.24

A.14.4.12.2: Wiring installed correctly above T-Bar or Gypsum board ceilings is only checked on rough in and acceptance testing. In the following weeks, month, years, service repairs, building changes and retrofits are done to the building or structure, sometimes during the reworks, the initial installation of the fire alarm wiring is removed.

14.4.12.3

Abandoned Fire Alarm wiring shall be tagged for future use or removed. [70 :760.25]

14.4.12.4*

Accessibility of duct detectors is to be inspected. Duct Detectors that are found to be located above T-Bar ceilings that do not have visible alarm indicators as stated in 72:10.18 or 72:17.4.6., 17.4.6.1 and 17.4.6.2 or test switch installed for location identification, a remote indicator shall be installed.

Exception: Detectors installed in concealed locations where the specific detector alarm or supervisory signal is indicated at the control unit (and on the drawings with its specific location and function) shall not be required to be provided with a remote alarm indicators as specified in [72:17.4.6.3]

A.14.4.12.4 : Duct detectors should be installed by qualified personnel.

14.4.12.5*

Battery Testing shall be done under full load of the fire alarm system. (find section of full load battery testing)

A.14.4.12.5 : Batteries should be checked with load testers and /or meters during the annual ITM.

14.4.12.6

All Inspection and testing methods as shown in Tables 14.3.1 and 14.4.3.2 shall be followed during the 5 year ITM.

14.4.12.6.1

All devices shall be installed, inspected and tested as shown in tables 14.3.1 and 14.4.3.2 during the 5 year ITM.

14.4.12.6.2

Documentation of inspection and testing shall be as required in 72:7.6

Additional Proposed Changes

File Name	Description	Approved
72_Held_PC_101_SIG-TMS_.pdf		

Statement of Problem and Substantiation for Public Input

NOTE: This Public Input appeared as “Rejected but Held” in Public Comment No. 101 of the A2021 Second Draft Report for NFPA 72 and per the Regs. at 4.4.8.3.1.

SUBSTANTIATION:

NFPA 25 has a 5 year requirements for Sprinkler Systems yet NFPA 72 does not have 5 year requirements for fire alarm systems.

By adding the requirements the fire alarm system life span will be increased and should reduce nuisance alarms and costly repairs.

As a technician for 30+ years, there have been several instances where fire alarm system problems were found due to the lack of inspecting wiring above ceilings, verifying accessibility of duct detectors and checking batteries under system loads.

If NFPA deices to add these requirements, the end user will have verification that their fire alarms systems are maintained and operating the same as when installed.

Submitter Information Verification

Submitter Full Name: TC on SIG_TMS
Organization: NFPA
Street Address:
City:
State:
Zip:
Submittal Date: Thu Feb 24 16:53:00 EST 2022
Committee: SIG-TMS

Committee Statement

Resolution: No data was submitted to suggest that owners do not have confidence in their fire alarm systems with the existing inspection, testing and maintenance requirements.

Public Input No. 62-NFPA 72-2022 [Section No. 14.4.11.3]

14.4.11.3

~~Quantitative~~ Although not required by this Code, quantitative measurements as described in Annex D shall be permitted ~~but shall not be required~~ .

Statement of Problem and Substantiation for Public Input

PI submitted by Manual of Style Task Group to improve adherence to MOS requirements.

Submitter Information Verification

Submitter Full Name: Joe Scibetta
Organization: BuildingReports
Street Address:
City:
State:
Zip:
Submittal Date: Wed Jan 12 09:57:41 EST 2022
Committee: SIG-TMS

Committee Statement

Resolution: FR-5353-NFPA 72-2022
Statement: The Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text.

Public Input No. 63-NFPA 72-2022 [Section No. 14.6.1.3]

14.6.1.3

The system owner shall be responsible for maintaining these records for the life of the system for examination by any authority having jurisdiction.

14.6.1.4

Paper or electronic media shall be permitted.

Statement of Problem and Substantiation for Public Input

PI submitted by Manual of Style Task Group to improve adherence to MOS requirements.

Submitter Information Verification

Submitter Full Name: Joe Scibetta
Organization: BuildingReports
Street Address:
City:
State:
Zip:
Submittal Date: Wed Jan 12 10:00:01 EST 2022
Committee: SIG-TMS

Committee Statement

Resolution: FR-5354-NFPA 72-2022
Statement: The Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text.

Public Input No. 561-NFPA 72-2022 [Section No. 14.6.2.1]

14.6.2.1

~~Records shall be retained until~~ The system owner shall be responsible for retaining maintenance, inspection, and testing records until the next test and for 1 year thereafter.

Statement of Problem and Substantiation for Public Input

Permanent Records are identified as the responsibility of the building owner to maintain. ITM records, however, are not assigned to any entity for retention. This PI assigns the responsibility for these types of records to the same entity as for permanent records in order to eliminate any uncertainty as to who is ultimately responsible for retention, especially when examination of these records is required by the AHJ.

Submitter Information Verification

Submitter Full Name: Joe Scibetta
Organization: BuildingReports
Street Address:
City:
State:
Zip:
Submittal Date: Wed Jun 01 12:58:19 EDT 2022
Committee: SIG-TMS

Committee Statement

Resolution: FR-5355-NFPA 72-2022

Statement: Permanent Records are identified as the responsibility of the building owner to maintain. ITM records, however, are not assigned to any entity for retention. This revision assigns the responsibility for these types of records to the same entity as for permanent records in order to eliminate any uncertainty as to who is ultimately responsible for retention, especially when examination of these records is required by the AHJ.

Public Input No. 64-NFPA 72-2022 [Section No. 14.6.2.3]

14.6.2.3

The records shall be on a medium that will survive the retention period. ~~Paper or electronic media shall be permitted.~~

Statement of Problem and Substantiation for Public Input

PI submitted by Manual of Style Task Group to improve adherence to MOS requirements.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 65-NFPA 72-2022 [Section No. 14.6.2.4]	
Public Input No. 65-NFPA 72-2022 [Section No. 14.6.2.4]	

Submitter Information Verification

Submitter Full Name: Joe Scibetta
Organization: BuildingReports
Street Address:
City:
State:
Zip:
Submittal Date: Wed Jan 12 11:09:47 EST 2022
Committee: SIG-TMS

Committee Statement

Resolution: FR-5356-NFPA 72-2022
Statement: The Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text.

Public Input No. 65-NFPA 72-2022 [Section No. 14.6.2.4]

14.6.2.4 Paper or electronic media shall be permitted.

14.6.2.5

A record of all inspections, testing, and maintenance shall be provided in accordance with 7.6.6.

Statement of Problem and Substantiation for Public Input

PI submitted by Manual of Style Task Group to improve adherence to MOS requirements.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 64-NFPA 72-2022 [Section No. 14.6.2.3]	
Public Input No. 64-NFPA 72-2022 [Section No. 14.6.2.3]	

Submitter Information Verification

Submitter Full Name: Joe Scibetta
Organization: BuildingReports
Street Address:
City:
State:
Zip:
Submittal Date: Wed Jan 12 11:11:29 EST 2022
Committee: SIG-TMS

Committee Statement

Resolution: FR-5356-NFPA 72-2022
Statement: The Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text.

Public Input No. 484-NFPA 72-2022 [New Section after 17.4]

17.X Initiating Device Circuits

17.x.1 A hard wired initiating device circuit shall comply with requirements in this Chapter and sections 23.5 or 23.6.

17.x.2 (move current 17.4.6 to here as it pertains to interconnection requirements needed for supervising a initiating device circuit) Duplicate terminals, leads, or connectors that provide for the connection of installation wiring shall be provided on each initiating device for the express purpose of connecting into the fire alarm system to monitor the integrity of the signaling and power wiring unless the initiating devices are connected to a system that provides the required monitoring.

17.x.3 The selection of wire size and material shall meet the requirements of this Code and the applicable sections in NFPA70, article 760.

17.x.4 The interconnection of an initiating device with fire resistant wiring shall be in accordance with the manufacturers installation instructions and comply with NFPA 70, articles 728 and 760.

17.x.5 A low power wireless initiating device shall comply with the performance requirements in section 23.16.

Statement of Problem and Substantiation for Public Input

We have nothing in this chapter that references the interconnection of initiating devices with other chapters and sections in this Code. Chapter 12 describes the circuits and pathway requirements, Section 23.5 references connections to initiating devices, and section 23.16 describes the wireless performance of devices.
This proposal adds a new section 17.X for initiating device circuits that correlates this chapter with the other above chapters and requirements.

Submitter Information Verification

Submitter Full Name: Daniel Grosch
Organization: UL LLC
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 27 13:18:44 EDT 2022
Committee: SIG-IDS

Committee Statement

Resolution: The public input is resolved because the requirements for wiring devices already exists in NFPA 70. It is unclear how the addition of the submitted material will provide additional clarification or added value. The submitter is duplicating normative texts that already exists in 17.4.6.

Public Input No. 436-NFPA 72-2022 [Section No. 17.5.3.1.1]

17.5.3.1.1

Where inaccessible areas are constructed of or contain combustible material, unless otherwise specified in 17.5.3.1.2 ~~, they shall be made accessible and shall be~~ and 17.5.3.1.3 , both of the following shall apply:

(1) Be made accessible

(2) Be protected by a detector(s)~~.~~

Statement of Problem and Substantiation for Public Input

Manual of style issue. The previous text had shall apply twice in the section. The section was altered to meet the MOS.

Submitter Information Verification

Submitter Full Name: Samuel Rokowski
Organization: Maddox Electric Co Inc
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 26 14:44:51 EDT 2022
Committee: SIG-IDS

Committee Statement

Resolution: FR-5275-NFPA 72-2022
Statement: The revision corrects a NFPA Manual of Style issue by removing second “shall” and clarifying the existing requirement.

Public Input No. 438-NFPA 72-2022 [New Section after 17.5.3.1.2]

17.5.3.1.4

Detectors shall not be required in combustible blind spaces where the concealed space is entirely filled with a noncombustible insulation.

Statement of Problem and Substantiation for Public Input

Manual of Style issue. Creating new section to address the two separate conditions in a single section.

Worked with MOS TG.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 437-NFPA 72-2022 [Section No. 17.5.3.1.2]	

Submitter Information Verification

Submitter Full Name: Samuel Rokowski
Organization: Maddox Electric Co Inc
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 26 14:55:28 EDT 2022
Committee: SIG-IDS

Committee Statement

Resolution: Renumbering of text will occur automatically, and no action is necessary.

Public Input No. 439-NFPA 72-2022 [New Section after 17.5.3.1.2]

17.5.3.1.4

Where the concealed space is entirely filled with a noncombustible insulation in solid joist construction as described in 17.5.3.1.3, the insulation shall be required to fill only the space from the ceiling to the bottom edge of the joist of the roof or floor deck.

Statement of Problem and Substantiation for Public Input

Manual of style issue. Adding the second section of Public Input 438.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 440-NFPA 72-2022 [Section No. 17.5.3.1.3]	
Public Input No. 441-NFPA 72-2022 [Section No. 17.5.3.1.4]	
Public Input No. 442-NFPA 72-2022 [Section No. 17.5.3.1.5]	

Submitter Information Verification

Submitter Full Name: Samuel Rokowski
Organization: Maddox Electric Co Inc
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 26 14:59:42 EDT 2022
Committee: SIG-IDS

Committee Statement

Resolution: FR-5364-NFPA 72-2022
Statement: The first revision addresses a NFPA Manual of Style issue. Creating the second section of PI438 to address the two separate conditions in a single section, and revised to exclude an unnecessary article.

Public Input No. 437-NFPA 72-2022 [Section No. 17.5.3.1.2]

17.5.3.1.2

Detectors shall not be required in combustible blind spaces if any of the following conditions exist:

(1) Where the ceiling is attached directly to the underside of the supporting beams of a combustible roof or floor deck~~.~~

(2) Where

~~the concealed space is entirely filled with a noncombustible insulation. (In solid joist construction, the insulation shall be required to fill only the space from the ceiling to the bottom edge of the joist of the roof or floor deck.)~~

(3) ~~Where~~ there are small concealed spaces over rooms, provided that any space in question does not exceed 50 ft^2 (4.6 m^2) in area.

(4) In spaces formed by sets of facing studs or solid joists in walls, floors, or ceilings, where the distance between the facing studs or solid joists is less than 6 in. (150 mm).

Statement of Problem and Substantiation for Public Input

Manual of style issue. Sub section (2) is being removed and placed into another section. The single sub section had two existing requirements and didn't really fit as a sub section.

Worked with SIG IDS TG.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 438-NFPA 72-2022 [New Section after 17.5.3.1.2]	

Submitter Information Verification

Submitter Full Name: Samuel Rokowski
Organization: Maddox Electric Co Inc
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 26 14:50:02 EDT 2022
Committee: SIG-IDS

Committee Statement

Resolution: FR-5277-NFPA 72-2022

Statement: The revision is for compliance with the NFPA Manual of Style. Subsection (2) is being removed and placed into another section.

Public Input No. 440-NFPA 72-2022 [Section No. 17.5.3.1.3]

17.5.3.1.~~3~~ – 5

Detectors shall not be required below open grid ceilings if all of the following conditions exist:

(1) Openings of the grid are ¼ in. (6.4 mm) or larger in the least dimension.

(2) Thickness of the material does not exceed the least dimension.

(3) Openings constitute at least 70 percent of the area of the ceiling material.

Statement of Problem and Substantiation for Public Input

Renumbering issue. With Public Inputs 438 & 439, section renumbering will be required.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 439-NFPA 72-2022 [New Section after 17.5.3.1.2]	Renumbering will only be required if accepted

Submitter Information Verification

Submitter Full Name: Samuel Rokowski
Organization: Maddox Electric Co Inc
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 26 15:03:17 EDT 2022
Committee: SIG-IDS

Committee Statement

Resolution: Renumbering of text will occur automatically, and no action is necessary.

Public Input No. 277-NFPA 72-2022 [Section No. 17.5.3.1.4]

17.5.3.1.4*

Where concealed accessible spaces above suspended ceilings are used as a return air plenum,_ meeting the requirements of NFPA 90A,_ detection shall be provided in one of the following means:

(1) Smoke detection shall be provided in accordance with 17.7.5.2, or

(2) Smoke detection shall be provided at each connection from the return air plenum to the central air-handling system.

Statement of Problem and Substantiation for Public Input

Missing commas in the clause make it hard to read.

Submitter Information Verification

Submitter Full Name: Scott Lang
Organization: Honeywell International
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 12 09:43:22 EDT 2022
Committee: SIG-IDS

Committee Statement

Resolution: FR-5281-NFPA 72-2022
Statement: The punctuation has been revised to clarify the requirement and the list items have been revised to comply with the NFPA Manual of Style. Relocate 17.5.3.1.4 to 17.5.3.1.6.

Public Input No. 441-NFPA 72-2022 [Section No. 17.5.3.1.4]

17.5.3.1.4 6 *

Where concealed accessible spaces above suspended ceilings are used as a return air plenum meeting the requirements of NFPA 90A detection shall be provided in one of the following means:

(1) Smoke detection shall be provided in accordance with 17.7.5.2, or

(2) Smoke detection shall be provided at each connection from the return air plenum to the central air-handling system.

Statement of Problem and Substantiation for Public Input

Renumbering issue. If attached PI's are accepted the section numbers will need to be revised.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 439-NFPA 72-2022 [New Section after 17.5.3.1.2]	
Public Input No. 443-NFPA 72-2022 [Section No. A.17.5.3.1.4]	

Submitter Information Verification

Submitter Full Name: Samuel Rokowski
Organization: Maddox Electric Co Inc
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 26 15:05:38 EDT 2022
Committee: SIG-IDS

Committee Statement

Resolution: FR-5281-NFPA 72-2022

Statement: The punctuation has been revised to clarify the requirement and the list items have been revised to comply with the NFPA Manual of Style. Relocate 17.5.3.1.4 to 17.5.3.1.6.

Public Input No. 442-NFPA 72-2022 [Section No. 17.5.3.1.5]

17.5.3.1.~~5~~ 7

Detectors shall not be required underneath open loading docks or platforms and their covers and for accessible underfloor spaces if all of the following conditions exist:

(1) Space is not accessible for storage purposes or entrance of unauthorized persons and is protected against the accumulation of windborne debris.

(2) Space contains no equipment such as steam pipes, electric wiring, shafting, or conveyors.

(3) Floor over the space is tight.

(4) No flammable liquids are processed, handled, or stored on the floor above.

Statement of Problem and Substantiation for Public Input

Renumbering issue. If previous sections are approved the section numbers will need to be renumbered.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 439-NFPA 72-2022 [New Section after 17.5.3.1.2]	

Submitter Information Verification

Submitter Full Name: Samuel Rokowski
Organization: Maddox Electric Co Inc
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 26 15:07:35 EDT 2022
Committee: SIG-IDS

Committee Statement

Resolution: Renumbering is done automatically. No action necessary on this public input.

Public Input No. 529-NFPA 72-2022 [Section No. 17.6.1.2]

17.6.1.2

Designs not in accordance with 17.6.1.3 shall be deemed prescriptive designs ~~and~~ .

17.6.1.3

Designs not in accordance with 17.6.1.3 shall be designed in accordance with the prescriptive requirements of this chapter.

17.6.1.4*

Performance-based designs shall be executed in accordance with Section 17.3

17.6.1.5

Heat sensing fire detectors shall be listed in accordance with applicable standards such as UL 521, *Heat Detectors for Fire Protective Signaling Systems* .

17.6.1.6

Spot-type heat detectors shall include in their installation instructions, technical data, and listing documentation the operating temperature and response time index (RTI) as determined by the organization listing the device.

Statement of Problem and Substantiation for Public Input

Manual of style issue. Section 17.6.1.2 had shall in the normative texts two times. The TG agreed to break it into two different sections. The remainder of the PI was to renumber the existing sections.

Submitter Information Verification

Submitter Full Name: Samuel Rokowski
Organization: Maddox Electric Co Inc
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 13:24:43 EDT 2022
Committee: SIG-IDS

Committee Statement

Resolution: FR-5282-NFPA 72-2022
Statement: This first revision addresses a NFPA Manual of Style issue. Section 17.6.1.2 had shall in the normative texts two times. This revision aligns with the same revision made to Section 17.7.1.2.

Public Input No. 530-NFPA 72-2022 [Section No. 17.6.3.1.1]

17.6.3.1.1 * – ~~Spacing.~~

~~One of the following requirements shall apply:~~

Detector spacing shall comply with 17.6.3.1.1.1 or 17.6.3.1.1.2.

17.6.3.1.1.1

The distance between detectors shall

~~not~~

be both of the following:

(1) Not exceed their listed spacing

~~, and there shall be detectors~~

(2) D etectors located within a distance of one-half the listed spacing, measured at right angles from all walls or partitions extending upward to within the top 15 percent of the ceiling height.

One of the following requirements shall apply:

17.6.3.1.1.2

All points on the ceiling shall have a detector within a distance equal to or less than 0.7 times the listed spacing (0.7 *S*).

Statement of Problem and Substantiation for Public Input

Manual of style issue. The existing text had both shall and shall not in normative text. In addition there was text that needed to be placed in another sub section. MOS TG agreed.

Submitter Information Verification

Submitter Full Name: Samuel Rokowski
Organization: Maddox Electric Co Inc
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 13:44:02 EDT 2022
Committee: SIG-IDS

Committee Statement

Resolution: FR-5283-NFPA 72-2022

Statement: The first revision addresses a NFPA Manual of Style issue. The existing text had both shall and shall not in normative text. In addition there was text that needed to be placed in another sub section. Also, added back in the heading, and updated the wording to be consistent with the recommended action.

Public Input No. 531-NFPA 72-2022 [Section No. 17.6.3.5.2]

17.6.3.5.2

For line-type electrical conductivity detectors *(see 3.3.77.12)* and pneumatic rate-of-rise tubing heat detectors (*see 3.3.77.16)*, which rely on the integration effect, the derating required by Table 17.6.3.5.1 shall not apply~~, and the~~ .

17.6.3.5.3

For heat detectors described in 17.6.3.5.2, the manufacturer's published instructions shall be followed for appropriate alarm point and spacing.

17.6.3.5.4*

The spacing of heat detectors shall not be required to be less than 0.4 times the height of the ceiling.

A.17.6.3.5.4*

The width of uniform temperature of the plume when it impinges on the ceiling is approximately 0.4 times the height above the fire, so reducing spacing below this level will not increase response time. For example, a detector with a listed spacing of 15 ft (4.6 m) or 225 ft^2 (21 m^2) need not be spaced closer than 12 ft (3.7 m) on a 30 ft (9.1 m) ceiling, even though Table 17.6.3.5.1 states that the spacing should be 0.34 × 15 ft (0.34 × 4.6 m), which equals 5.1 ft (1.6 m).

Statement of Problem and Substantiation for Public Input

Manual of style issue. Section 17.6.3.5.2 has both shall and shall not in the normative text in addition to multiple requirements. The MOS TG separated the sections to meet the MOS requirements.

Submitter Information Verification

Submitter Full Name: Samuel Rokowski
Organization: Maddox Electric Co Inc
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 13:50:26 EDT 2022
Committee: SIG-IDS

Committee Statement

Resolution: FR-5346-NFPA 72-2022

Statement: The first revision addresses a NFPA Manual of Style issue. Section 17.6.3.5.2 has both "shall" and "shall not" in the normative text in addition to multiple requirements. Additional revisions have been made for more specificity on the alarm setting required by this section.

Public Input No. 532-NFPA 72-2022 [Section No. 17.7.1.2]

17.7.1.2*

Designs not in accordance with 17.7.1.3 shall be both of the following:

(1) Be deemed prescriptive designs ~~and shall be~~ .

(2) Be designed in accordance with the prescriptive requirements of this chapter.

Statement of Problem and Substantiation for Public Input

Manual of style issue. MOS TG agreed. Section 17.7.1.2 had two shalls and two separate requirements in a single section. We separated the two requirements.

Submitter Information Verification

Submitter Full Name: Samuel Rokowski
Organization: Maddox Electric Co Inc
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 14:38:19 EDT 2022
Committee: SIG-IDS

Committee Statement

Resolution: FR-5345-NFPA 72-2022
Statement: This first revision addresses NFPA Manual of Style issue. Section 17.7.1.2 had shall in the normative texts two times. This revision aligns with the same revision made to Section 17.6.1.2.

Public Input No. 244-NFPA 72-2022 [Section No. 17.7.2]

17.7.2* Protection During Construction.

17.7.2.1

Where detectors are installed for signal initiation during construction, they shall be cleaned and verified to be operating in accordance with the listed sensitivity, or they shall be replaced prior to the final acceptance test of the system.

17.7.2.2*

Where ~~detectors are installed but not operational during construction, they shall be protected from construction debris, dust, dirt, and damage in accordance with the manufacturer's recommendations and verified to be operating in accordance with the listed sensitivity, or they shall be replaced prior to the final acceptance test of the system.~~

~~**17.7.2.3** –~~

~~Where~~ detection is not required during construction, detectors shall not be installed until after all other construction trades have completed cleanup.

Statement of Problem and Substantiation for Public Input

Either smoke detectors are installed for signal initiation during construction per 17.7.2.1 or they're not required during construction and need to be installed after all construction trades have completed cleanup per 17.7.2.3.

Therefore, Section 17.7.2.2 as it currently reads should be removed since detectors that are "installed but not operational during construction" equates to "where detection is not required during construction".

The annex note currently assigned to 17.7.2 would be reassigned to the new section 17.7.2.2 since that note provides the explanation as to why construction trades must complete cleanup before detectors are installed. That annex note relocation is addressed in a related PI.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 245-NFPA 72-2022 [Section No. A.17.7.2]	
Public Input No. 245-NFPA 72-2022 [Section No. A.17.7.2]	

Submitter Information Verification

Submitter Full Name: Joe Scibetta
Organization: BuildingReports
Street Address:
City:
State:
Zip:
Submittal Date: Tue Apr 26 11:00:05 EDT 2022
Committee: SIG-IDS

Committee Statement

Resolution: The proposed revision removes a requirement that is in practice every day. This requirement aligns with NFPA 241 recommendations to provide protection while buildings are under construction. The term “construction” is not limited to new construction and applies to a myriad of activities that occur within existing buildings.

Public Input No. 534-NFPA 72-2022 [Section No. 17.7.2.1]

17.7.2.1

Where detectors are installed for signal initiation during construction, ~~they~~ the installation shall be one of the following:

(1) Detectors cleaned and verified to be operating in accordance with the listed sensitivity~~, or they shall be~~ .

(2) Detectors replaced prior to the final acceptance test of the system.

Statement of Problem and Substantiation for Public Input

Manual of style issue. MOS TG agreed. 17.7.2.1 had two separate shalls and requirements in a single section. Reworded the section to meet the MOS.

Submitter Information Verification

Submitter Full Name: Samuel Rokowski
Organization: Maddox Electric Co Inc
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 14:41:49 EDT 2022
Committee: SIG-IDS

Committee Statement

Resolution: FR-5289-NFPA 72-2022
Statement: The first revision addresses a NFPA Manual of Style issue. Section 17.7.2.1 had two separate “shalls” and requirements in a single section. The first revision provides MoS compliance.

Public Input No. 535-NFPA 72-2022 [Section No. 17.7.2.2]

17.7.2.2

Where detectors are installed but not operational during construction, ~~they~~ the installation shall be by one of the following:

(1) Be protected from construction debris, dust, dirt, and damage in accordance with the manufacturer's recommendations and verified to be operating in accordance with the listed sensitivity~~, or they shall be~~ .

(2) Be replaced prior to the final acceptance test of the system.

Statement of Problem and Substantiation for Public Input

Manual of style issue. MOS TG agreed. Section 17.7.2.2 had two shalls and two separate requirements. Reworded the section to comply with the MOS.

Submitter Information Verification

Submitter Full Name: Samuel Rokowski
Organization: Maddox Electric Co Inc
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 14:45:11 EDT 2022
Committee: SIG-IDS

Committee Statement

Resolution: FR-5290-NFPA 72-2022
Statement: The first revision corrects a NFPA Manual of Style issue. Section 17.7.2.2 contains two "shalls."

Public Input No. 186-NFPA 72-2022 [Section No. 17.7.4.2.3.1]

17.7.4.2.3.1*

In the absence of specific performance-based design criteria, on ceilings up to 30 feet in height, one of the following requirements shall apply:

(1) The distance between smoke detectors shall not exceed a nominal spacing of 30 ft (9.1 m) and there shall be detectors within a distance of one-half the nominal spacing, measured at right angles from all walls or partitions extending upward to within the top 15 percent of the ceiling height.

(2)* All points on the ceiling shall have a detector within a distance equal to or less than 0.7 times the nominal 30 ft (9.1 m) spacing (0.7*S*).

Statement of Problem and Substantiation for Public Input

Unlike almost all other fire alarm installation standards worldwide, NFPA 72 does not provide any prescriptive guidance for smoke detector spacing based on ceiling height. NFPA 72 essentially says that there are many factors that should be considered when spacing detectors on high ceilings. One of the questions that we, at Honeywell, get most frequently, is around how to space detectors on high ceilings. Using a height of 30 feet, below which standard spacings apply, is a conservative approach based on what other countries and regions have decided to do. Much of Europe is currently at 12 meters.

It is important to keep in mind that current smoke detector thresholds are based on enabling individuals to escape an occupancy with a 10-foot ceiling prior to the visibility being reduced to less than 0.25 OD/m at the five foot level. Once the ceiling height becomes higher than ten feet, there is even more time to escape based on a standard size fire based on the time it takes for the smoke layer to descend.

The Fire Protection Research Foundation is looking to start a project that would provide more definitive guidance on high ceiling detector spacing. This research should be available after the First Draft meeting for NFPA 72. Data on smoke detector performance on ceilings up to 21 meters is available in research that was conducted by William Kuffner as part of his master's thesis called "Method of Determining Smoke Detector Spacing in High Ceiling Applications."

Submitter Information Verification

Submitter Full Name: Scott Lang
Organization: Honeywell International
Street Address:
City:
State:
Zip:
Submittal Date: Mon Mar 21 13:41:43 EDT 2022
Committee: SIG-IDS

Committee Statement

Resolution: Spacing guidance is pending the release of the report "Smoke Detector Spacing in High Ceiling Spaces" from the Fire Protection Research Foundation. It is anticipated this report

will be available to the committee for their Second Draft meeting.

Public Input No. 536-NFPA 72-2022 [Section No. 17.7.4.2.3.1]

17.7.4.2.3.1*

In the absence of specific performance-based design criteria,

~~one of the following requirements shall apply:~~
detector spacing shall comply with 17.7.4.2.3.1*(A) and (B) or (C).

(A) The distance between smoke detectors shall not exceed a nominal spacing of 30 ft (9.1 m)

~~and there~~

.

(B) There shall be detectors within a distance of one-half the nominal spacing, measured at right angles from all walls or partitions extending upward to within the top 15 percent of the ceiling height.

(C) * All points on the ceiling shall have a detector within a distance equal to or less than 0.7 times the nominal 30 ft (9.1 m) spacing (0.7 *S*).

A.17.7.4.2.3.1(C)

The 30 ft (9.1 m) spacing is a guide for prescriptive designs. The use of such a spacing is based upon customary practice in the fire alarm community.

Where there are explicit performance objectives for the response of the smoke detection system, the performance-based design methods outlined in Annex B should be used.

For the purposes of this section, “nominal 30 ft (9.1 m)” should be determined to be 30 ft (9.1 m) ±5 percent [±18 in. (460 mm)].

Statement of Problem and Substantiation for Public Input

Manual of style issue. MOS TG agreed. The existing section had multiple shalls and requirements in the section. In the first subsection there were multiple requirements in the section.

Submitter Information Verification

Submitter Full Name: Samuel Rokowski
Organization: Maddox Electric Co Inc
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 14:52:37 EDT 2022
Committee: SIG-IDS

Committee Statement

Resolution: FR-5296-NFPA 72-2022
Statement: The first revision addresses NFPA Manual of Style issues. The proposed change to the Annex 17.7.4.2.3.1 to 17.7.4.2.3.1(C) was not accepted as this Annex is applicable to A through C. The existing Annex of 17.7.4.2.3.1(2) will be renumbered to 17.7.4.2.3.1(C).

Public Input No. 279-NFPA 72-2022 [Section No. 17.7.4.2.4.2]

17.7.4.2.4.2

For level ceilings, the following shall apply:

(1) For ceilings with beam depths of less than 10 percent of the ceiling height (0.1 *H*), the following shall apply:

(a) Smooth ceiling spacing shall be permitted.

(b) Spot-type smoke detectors shall be permitted to be located on ceilings or on the bottom of beams.

(2) For ceilings with beam depths equal to or greater than 10 percent of the ceiling height (0.1 *H*), the following shall apply:

(3) Where beam spacing is equal to or greater than 40 percent of the ceiling height (0.4 *H*), spot-type detectors shall be located on the ceiling in each beam pocket.

(4) Where beam spacing is less than 40 percent of the ceiling height (0.4 *H*), the following shall be permitted for spot detectors:

(5) Smooth ceiling spacing in the direction parallel to the beams and at one-half smooth ceiling spacing in the direction perpendicular to the beams

(6) Location of detectors either on the ceiling or on the bottom of the beams

(7)* For beam pockets formed by intersecting beams, including waffle or pan-type ceilings, the following shall apply:

(8) For beam depths less than 10 percent of the ceiling height (0.1 *H*), spacing shall be in accordance with 17.7.4.2.4.2 (1).

(9) For beam depths greater than or equal to 10 percent of the ceiling height (0.1 *H*), spacing shall be in accordance with 17.7.4.2.4.2 (2).

(10) For corridors 15 ft (4.6 m) in width or less having ceiling beams or solid joists perpendicular to the corridor length, the following shall apply:

(11) Smooth ceiling spacing shall be permitted.

(12) Location of spot-type smoke detectors shall be permitted on ceilings, sidewalls, or the bottom of beams or solid joists.

(13) For rooms of 900 ft^2 (84 m^2) or less, the following shall apply:

(14) Use of smooth ceiling spacing shall be permitted.

(15) Location of spot-type smoke detectors shall be permitted on ceilings or on the bottom of beams.

(16) For ceilings with beams, where there is a gap greater than the beam depth above the beam, smooth ceiling spacing shall be permitted.

Statement of Problem and Substantiation for Public Input

The standard does not address the case where there is a gap above a beam traversing a ceiling. How big does that gap need to be before smooth ceiling spacing can be used? This happens when the beam is attached to a corrugated roof material.

This PI would only add item (6) despite all of the underlining added by Terra.

(6) For ceilings with beams, where there is a gap greater than the beam depth above the beam, smooth ceiling spacing shall be permitted.

Submitter Information Verification

Submitter Full Name: Scott Lang
Organization: Honeywell International
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 12 11:35:22 EDT 2022
Committee: SIG-IDS

Committee Statement

Resolution: FR-5297-NFPA 72-2022
Statement: This first revision addresses the case where there is a gap above a beam traversing a ceiling. Using 15% represents a conservative approach constant with 17.7.4.2.3.1 .

Public Input No. 539-NFPA 72-2022 [Section No. 17.7.4.6.2.2]

17.7.4.6.2.2

Sampling pipe networks shall be designed on the basis of, ~~and shall be supported~~ and supported by, computer-based fluid dynamics design calculations to ensure required performance.

Statement of Problem and Substantiation for Public Input

Manual of style issues. MOS TG. Removed the redundant shall. The extra shall was not needed.

Submitter Information Verification

Submitter Full Name: Samuel Rokowski
Organization: Maddox Electric Co Inc
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 15:16:14 EDT 2022
Committee: SIG-IDS

Committee Statement

Resolution: FR-5298-NFPA 72-2022
Statement: The first revision provides compliance with the NFPA Manual of Style.

Public Input No. 470-NFPA 72-2022 [Section No. 17.7.4.6.4.1]

17.7.4.6.4.1 Air ~~Duct Applications.~~ duct applications shall comply with 17.7.4.6.4.1(A) through (D).

(A)

The air sampling system shall be listed for air duct applications~~ and~~ .

(B)

The air sampling systems shall be installed in accordance with the manufacturer's published instructions.

(~~B~~ C) –

The inlet and exhaust sections of pipe that are installed inside the air duct shall be air-tight.

(D)

The inlet and exhaust sections of pipe that are installed inside the air duct shall exhaust the sampled air in accordance with the manufacturer's published instructions.

Statement of Problem and Substantiation for Public Input

Manual of style issues. MOS TG. In both sections (A) and (B), there were separate requirements in each. The main section was reworded to be easier read and understood.

Submitter Information Verification

Submitter Full Name: Samuel Rokowski
Organization: Maddox Electric Co Inc
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 27 11:20:21 EDT 2022
Committee: SIG-IDS

Committee Statement

Resolution: FR-5299-NFPA 72-2022
Statement: The first revision provides compliance with the NFPA Manual of Style.

Public Input No. 449-NFPA 72-2022 [Section No. 17.7.6.5.4]

17.7.6.5.4 ~~–~~ Detector Installation.

17.7.6.5.4.1 Detectors shall be mounted in accordance with the manufacturer's published instructions ~~and~~ .

17.7.6.5.4.2 Detectors shall be accessible for cleaning by providing access doors or panels in accordance with NFPA 90A.

Statement of Problem and Substantiation for Public Input

Manual of style issue. MOS TG. The existing section had two shalls and two conditions in one section. Reworded and formatted the section to comply.

Submitter Information Verification

Submitter Full Name: Samuel Rokowski
Organization: Maddox Electric Co Inc
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 26 15:43:51 EDT 2022
Committee: SIG-IDS

Committee Statement

Resolution: FR-5300-NFPA 72-2022
Statement: The first revision provides compliance with the NFPA Manual of Style.

Public Input No. 448-NFPA 72-2022 [Section No. 17.7.6.6.4.2]

17.7.6.6.4.2

If door release is intended to prevent smoke transmission from one space to another in one direction only, detectors located in the space to which smoke is to be confined, regardless of the depth of wall section above the door, ~~shall be~~ one of the following shall apply:

(1) Be in accordance with 17.7.6.6.5. ~~Alternatively,~~

(2) Install a smoke detector conforming with 17.7.6.6.4.1(D) ~~shall be permitted to be used.~~

Statement of Problem and Substantiation for Public Input

Manual of style issue. MOS TG. The existing section had two shalls in the normative text and two separate conditions. Reworded the section to address the issues.

Submitter Information Verification

Submitter Full Name: Samuel Rokowski
Organization: Maddox Electric Co Inc
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 26 15:38:51 EDT 2022
Committee: SIG-IDS

Committee Statement

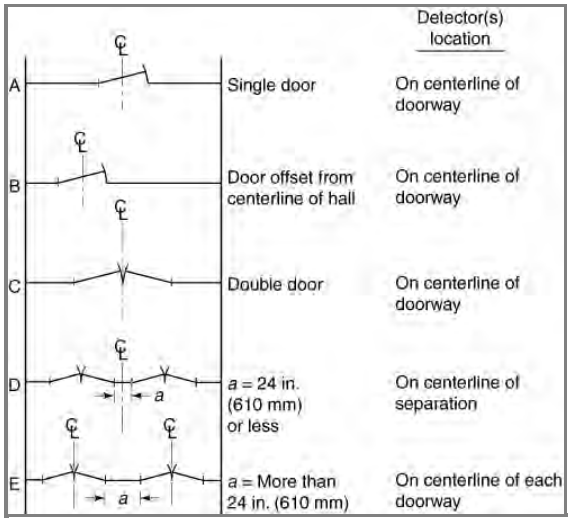
Resolution: FR-5301-NFPA 72-2022
Statement: The first revision provides compliance with the NFPA Manual of Style.

Public Input No. 248-NFPA 72-2022 [Section No. 17.7.6.6.4.3(A)]

(A)

If the separation between doorways exceeds 24 in. (610 mm), each doorway shall be treated separately. Figure 17.7.6.6.4.3(A), part E, shall apply.

Figure 17.7.6.6.4.3(A) Detector Location Requirements for Single and Double Doors.



Additional Proposed Changes

File Name	Description	Approved
NFPA_72_-_Cross_Corridor.jpg	Proposed update to door centerline placement to include cross-corridor doors	

Statement of Problem and Substantiation for Public Input

Propose adding cross-corridor doors to Figure 17.7.6.6.4.3(A), this has been a heavily criticized area by state and local AHJ's. Allowing the smoke detector to be offset will provide much need flexibility in ceiling layout or other trades including lighting, HVAC and fire protection where the grid is centered on 96" wide corridors within healthcare occupancies. The 24" maximum offset is not anticipated to hinder the detectors ability to sense smoke and activate the doors in a timely fashion.

Submitter Information Verification

Submitter Full Name: Nick Gates
Organization: Eppstein Uhen Architects
Street Address:
City:
State:
Zip:
Submittal Date: Tue Apr 26 11:51:58 EDT 2022
Committee: SIG-IDS

Committee Statement

Resolution: The submitted drawing is unclear and does not align with the other drawings in the section. The level of precision does not need to be illustrated by a drawing. The existing 24 inch dimension referenced in drawings A through C relates to the spacing between individual door openings and not to the centerline of a door opening.

Public Input No. 172-NFPA 72-2022 [Section No. 17.7.6.6.5.1]

17.7.6.6.5.1

If ceiling-mounted smoke detectors are to be installed on a smooth ceiling for a single or double doorway, they shall be located as follows *[Figure 17.7.6.6.4.3(A) shall apply]*:

(1) ~~On~~ Within 1 ft (0.3 m) of either side of the centerline of the doorway

(2) No more than 5 ft (1.5 m), measured along the ceiling and perpendicular to the doorway *[Figure 17.7.6.6.4.1(A) shall apply.]*

(3) No closer than shown in Figure 17.7.6.6.4.1(A), parts B, D, and F

Statement of Problem and Substantiation for Public Input

The requirement "on the centerline" is unenforceable since there is no stated tolerance. If it is truly important to be on the centerline, then a tolerance should be added and annex material created to explain why. If it is not critical to be on the centerline in all cases, the requirement should be deleted. In anticipation of keeping the requirement, I have added a plus or minus one foot tolerance.

Submitter Information Verification

Submitter Full Name: Scott Lang
Organization: Honeywell International
Street Address:
City:
State:
Zip:
Submittal Date: Mon Mar 07 10:01:17 EST 2022
Committee: SIG-IDS

Committee Statement

Resolution: FR-5309-NFPA 72-2022
Statement: The requirement of being on the centerline had no tolerance associated with it. The first revision add a tolerance to provide for a more enforceable requirement.

Public Input No. 447-NFPA 72-2022 [Section No. 17.7.7.1.2]

17.7.7.1.2*

Holes in the back of a detector shall be covered by a gasket, sealant, or equivalent means~~, and the~~ .

17.7.7.1.3

The detector shall be mounted so that airflow from inside or around the housing does not prevent the entry of smoke during a fire or test condition.

Statement of Problem and Substantiation for Public Input

Manual of style issue. MOS TG. The existing section addressed two separate requirements and needed to be separated by sub sections.

Submitter Information Verification

Submitter Full Name: Samuel Rokowski
Organization: Maddox Electric Co Inc
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 26 15:33:42 EDT 2022
Committee: SIG-IDS

Committee Statement

Resolution: FR-5311-NFPA 72-2022
Statement: The first revision addresses a NFPA Manual of Style issue. The MoS issue is addressed by eliminating the first requirement that implies that the installer modify the smoke detector. The annex material was revised to align with the revised requirement.

Public Input No. 106-NFPA 72-2022 [Section No. 17.7.7.3.3.2]

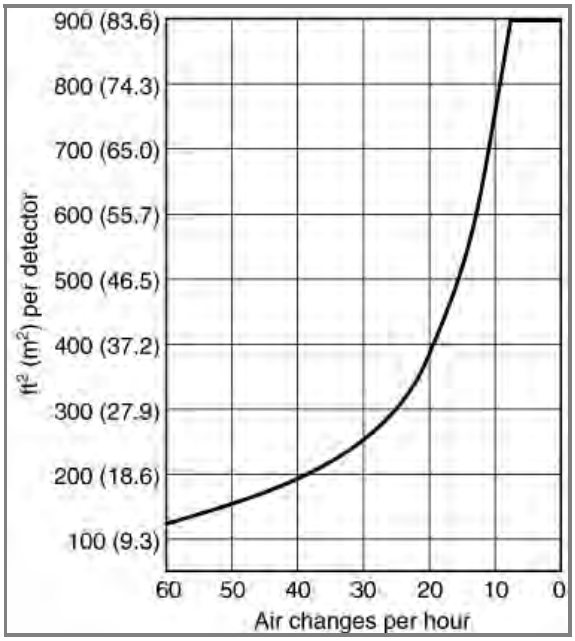
17.7.7.3.3.2

Where spacing must be adjusted for airflow, spot-type smoke detector spacing shall be adjusted in accordance with Table 17.7.7.3.3.2 or Figure 17.7.7.3.3.2 before making any other spacing adjustments required by this Code.

Table 17.7.7.3.3.2 ~~Smoke~~ 2 Spot-type Smoke Detector Spacing Based on Air Movement (Not to Be Used for Under-Floor or Above-Ceiling Spaces)

Minutes per Air Change	Air Changes per Hour	Spacing per Detector	
		ft^2	m^2
1	60	125	12
2	30	250	23
3	20	375	35
4	15	500	46
5	12	625	58
6	10	750	70
7	8.6	875	81
8	7.5	900	84
9	6.7	900	84
10	6	900	84

Figure 17.7.7.3.3.2 High Air Movement Areas (Not to Be Used for Under-Floor or Above-Ceiling Spaces).



Statement of Problem and Substantiation for Public Input

Proposed change would make it clearer to users of the standard that the spacing reductions are only

for spot-type detectors, not aspirating.

Submitter Information Verification

Submitter Full Name: Scott Lang
Organization: Honeywell International
Street Address:
City:
State:
Zip:
Submittal Date: Fri Jan 21 13:40:39 EST 2022
Committee: SIG-IDS

Committee Statement

Resolution: FR-5316-NFPA 72-2022
Statement: The first revision adds language to align the table title with the type of detector covered by the requirement.

Public Input No. 446-NFPA 72-2022 [Section No. 17.8.3.2.3]

17.8.3.2.3*

In applications where the fire to be detected could occur in an area not on the optical axis of the detector, the ~~distance shall be reduced or detectors shall be added~~ application shall comply with either of the following:

(1) The distance reduced

(2) Detectors added to compensate for the angular displacement of the fire in accordance with the manufacturer's published instructions.

Statement of Problem and Substantiation for Public Input

Manual of style issue. MOS TG. The existing section had two shalls in normative text. Added conditions and removed unnecessary verbiage.

Submitter Information Verification

Submitter Full Name: Samuel Rokowski
Organization: Maddox Electric Co Inc
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 26 15:30:05 EDT 2022
Committee: SIG-IDS

Committee Statement

Resolution: FR-5328-NFPA 72-2022
Statement: The first revision corrects a NFPA Manual of Style issue by removing the unnecessary second "shall".

Public Input No. 445-NFPA 72-2022 [Section No. 17.8.3.3.5]

17.8.3.3.5*

In applications where the sparks to be detected could occur in an area not on the optical axis of the detector, the ~~distance shall be reduced or detectors shall be~~ application shall comply with either of the following:

(1) The distance reduced

(2) Detectors added to compensate for the angular displacement of the fire in accordance with the ~~manufacturer's~~ manufacturer's published instructions~~.~~

Statement of Problem and Substantiation for Public Input

Manual of style issue. MOS TG. The existing section had (2) shalls, and two solutions. Reworded the section to address the MOS issue and make it easier to understand.

Submitter Information Verification

Submitter Full Name: Samuel Rokowski
Organization: Maddox Electric Co Inc
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 26 15:21:15 EDT 2022
Committee: SIG-IDS

Committee Statement

Resolution: FR-5329-NFPA 72-2022
Statement: The first revision corrected a NFPA Manual of Style issue by removing the unnecessary second “shall”.

Public Input No. 183-NFPA 72-2022 [New Section after 17.8.5.5]

17.8.5.6*

The location and spacing of detectors shall be the result of an engineering evaluation that includes the following:

(1) Size of the fire that is to be detected

(2) Fuel involved

(3) Sensitivity of the detector

(4) Field of view of the detector

(5) Distance between the fire and the detector

(6) Presence of extraneous sources of light

(7) Purpose of the detection system

(8) Response time required

17.8.5.7

The system design shall specify the size of the flaming fire of given fuel that is to be detected.

17.8.5.8

In applications in which the fire to be detected is of a fuel that differs from the test fuel used in the process of listing or approval, the distance between the detector and the fire shall be adjusted consistent with the fuel specificity of the detector as established by the manufacturer.

17.8.5.9

Because video image flame detectors are line-of-sight devices, their ability to respond to the required area of fire in the zone that is to be protected shall not be compromised by the presence of intervening structural members or other opaque objects or materials.

17.8.5.10

Provisions shall be made to sustain detector window clarity in applications where airborne particulates and aerosols coat the detector window between maintenance intervals and affect sensitivity.

Statement of Problem and Substantiation for Public Input

Public input provides additional information to aid the user in the use of video image flame detectors. These requirements are very similar to those of radiant energy (non-imaging) flame detectors.

Submitter Information Verification

Submitter Full Name: Scott Lang
Organization: Honeywell International
Street Address:

City:
State:
Zip:
Submittal Date: Wed Mar 09 10:57:17 EST 2022
Committee: SIG-IDS

Committee Statement

Resolution: The recommended text is not needed as it is currently covered by Section 17.8.3.1.

Public Input No. 178-NFPA 72-2022 [New Section after 17.10.2.4]

17.x Thermal Image Fire Detection.

17.x.1 Thermal image fire detection systems and all the components thereof, including hardware and software, shall be listed for the purpose of fire detection.

17.x.2 Thermal image fire detection systems shall comply with all the applicable requirements of Chapters 1, 10, 11, 14, 17, and 23 of this Code.

17.x.2.1 Systems shall be designed in accordance with the performance-based design requirements of Section 17.3.

17.x.2.2 The location and spacing of thermal image fire detectors shall comply with the requirements of 17.11.5.

17.x.2.3 The thermal image fire detector must have clear line of site to the hazard it is protecting.

17.x.2.4 Thermal image fire detectors shall not be used with a pan-tilt mount unless specifically listed for moveable operation.

17.x.3 S ignals generated by thermal imagers that are components of thermal image fire detection systems shall be permitted to be transmitted to other systems for other uses only through output connections provided specifically for that purpose by the system manufacturer.

17.x.4 All component controls and software shall be protected from unauthorized changes.

17.x.5 All changes to the software or component settings shall be tested in accordance with Chapter 14.

17.x.6 The thermal image fire detector shall produce a supervisory signal if the lens is blocked or dirty enough to impede proper operation.

17.x.7 The thermal image fire detector shall be capable of producing an alarm due to a temperature rate of rise within its field of view.

Statement of Problem and Substantiation for Public Input

This new section for thermal image fire detectors is needed to address the unique characteristics of imaging fire detectors which are different from either video image detectors or traditional (non-imaging) radiant energy detectors. This technology is new to fire detection and these requirements represent minimum requirements for their use.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 275-NFPA 72-2022 [New Section after 14.4.3.3]	

Submitter Information Verification

Submitter Full Name: Scott Lang
Organization: Honeywell International
Street Address:
City:
State:

Zip:

Submittal Date: Wed Mar 09 10:09:23 EST 2022

Committee: SIG-IDS

Committee Statement

Resolution: FR-5331-NFPA 72-2022

Statement: A new section on thermal imaging was added to address the technology's specific requirements. The remaining sections will need to be renumbered.

Public Input No. 397-NFPA 72-2022 [Section No. 17.12.1]

17.12.1*

Where carbon monoxide protection of a building is required by laws , codes, or standards, carbon monoxide detectors shall be ~~installed~~ sited in accordance with all of the following, unless a performance-based design in accordance with Section 17.3 is used:

(1) * On the ceiling ~~in the~~ or on the wall with the top of the detector within 12 inches of the ceiling, where installed in the same room as permanently installed fuel-burning appliances

(2) * Centrally located ~~on every habitable level and in every HVAC zone of the building~~ the HVAC zones of the areas required by laws, codes, or standards

(3) * Outside of each separate ~~dwelling unit~~ sleeping area , guest room, and guest suite ~~sleeping area~~ within 21 ft (6.4 m) of any door to a sleeping room, with the distance measured along a path of travel

(4) **In each area separated by normally closed doors.**

(5) * Other locations where required by applicable laws, codes, or standards

(6) In accordance with manufacturer's published instructions.

Statement of Problem and Substantiation for Public Input

This Public Input seeks to remove conflicts between the various ICC and NFPA model codes (fire and building) and NFPA 72. As written in the 2022 edition of NFPA 72, section 17.12.1 requires CO detection in certain rooms or areas. However, the Fire Code takes precedence with respect to when and in what type of occupancy carbon monoxide detection is required. We have rewritten this section to focus on how and physically where to install detection when it is required in an area by the building code or laws. The rewritten requirements focus on the specific conclusions of the 2007 Fire Protection Research Foundation report entitled, “Development of a Technical Basis for Carbon Monoxide Detector Siting.”

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 399-NFPA 72-2022 [Section No. A.17.12.1(3)]	

Submitter Information Verification

Submitter Full Name: Chris Heaton
Organization: Electronic Security Association
Affiliation: Electronic Security Association
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 25 18:15:58 EDT 2022
Committee: SIG-IDS

Committee Statement

Resolution: FR-5333-NFPA 72-2022

Statement: The installation requirements for carbon monoxide detectors have been updated to correlate with the requirements of the model codes and are based on the 2007 FPRF report “Development of a Technical Basis for Carbon Monoxide Detector Siting”. The annex language removes conflicts between the model codes and NFPA 72. The body and annex were rewritten to focus on how to install carbon monoxide detectors when they are required by adopted codes. These changes are based on the 2007 FPRF report “Development of a Technical Basis for Carbon Monoxide Detector Siting”. The committee notes that there is a continuing need for research on the dominant transport mechanisms for carbon monoxide.

Public Input No. 517-NFPA 72-2022 [Section No. 17.12.1]

17.12.1*

Where carbon monoxide protection of a building is required by laws , codes, or standards, carbon monoxide detectors shall be ~~installed in~~ sited in accordance with all of the following, unless a performance-based design in accordance with Section 17.3 is used:

(1) * On the ceiling in the same room as permanently installed fuel-burning appliances

(2) * Centrally located on every habitable level and in every HVAC zone of the building

(3) * Outside of each separate dwelling unit, guest room, and guest suite sleeping area within 21 ft (6.4 m) of any door to a sleeping room, with the distance measured along a path of travel

(4) * Other locations where required by applicable laws, codes, or standards

Statement of Problem and Substantiation for Public Input

This Public Input seeks to remove conflicts between the various ICC and NFPA model codes (fire and building) and NFPA 72. As written in the 2022 edition of NFPA 72, section 17.12.1 requires CO detection in certain rooms or areas. However, the Fire Code takes precedence with respect to when and in what type of occupancy carbon monoxide detection is required. We have rewritten this section to focus on how and physically where to install detection when it is required in an area by the building code or laws. The rewritten requirements focus on the specific conclusions of the 2007 Fire Protection Research Foundation report entitled, “Development of a Technical Basis for Carbon Monoxide Detector Siting.”

Submitter Information Verification

Submitter Full Name: Megan Hayes
Organization: Nema
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 09:57:46 EDT 2022
Committee: SIG-IDS

Committee Statement

Resolution: FR-5333-NFPA 72-2022

Statement: The installation requirements for carbon monoxide detectors have been updated to correlate with the requirements of the model codes and are based on the 2007 FPRF report “Development of a Technical Basis for Carbon Monoxide Detector Siting”. The annex language removes conflicts between the model codes and NFPA 72. The body and annex were rewritten to focus on how to install carbon monoxide detectors when they are required by adopted codes. These changes are based on the 2007 FPRF report “Development of a Technical Basis for Carbon Monoxide Detector Siting”. The committee notes that there is a continuing need for research on the dominant transport mechanisms for carbon monoxide.

Public Input No. 541-NFPA 72-2022 [Section No. 17.12.1]

17.12.1*

~~Where carbon~~

~~Carbon~~ ~~monoxide protection of a building is required, carbon monoxide detectors shall be installed in accordance with all of the following, unless a performance-based design in accordance with Section~~ ~~17.3~~

~~is~~

~~is~~ ~~used:~~

Where required by other governing laws, codes, or standards for a specific type of occupancy, listed carbon monoxide alarms or detectors shall be installed as follows:

(1) * On the ceiling in the same room as permanently installed ~~fuel-burning appliances~~ carbon monoxide source

(2) * Centrally located on every habitable level and in every HVAC zone of the building

(3) * Outside of each separate dwelling unit, guest room, and guest suite sleeping area within 21 ft (6.4 m) of any door to a sleeping room, with the distance measured along a path of travel

(4) * Other locations where required by applicable laws, codes, or standards

Additional Proposed Changes

File Name	Description	Approved
NFPA_72_NEW_CO_Definition_v3.docx	Doc has text of three proposed changes	

Statement of Problem and Substantiation for Public Input

This public input is adding a definition for “carbon monoxide source” and replacing the term “fuel-burning appliance” in several sections. This change is needed to clarify that only permanently installed or commonly used sources in a building such as gas fired heaters or propane powered forklifts that are part of the daily operations of a space are captured.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 538-NFPA 72-2022 [New Section after 3.3.37.2]	

Submitter Information Verification

Submitter Full Name: Tim Knisely
Organization: Automatic Fire Alarm Association (AFAA)
Affiliation: Automatic Fire Alarm Association (AFAA)
Street Address:
City:

State:
Zip:
Submittal Date: Tue May 31 15:20:16 EDT 2022
Committee: SIG-IDS

Committee Statement

Resolution: FR-5333-NFPA 72-2022

Statement: The installation requirements for carbon monoxide detectors have been updated to correlate with the requirements of the model codes and are based on the 2007 FPRF report “Development of a Technical Basis for Carbon Monoxide Detector Siting”. The annex language removes conflicts between the model codes and NFPA 72. The body and annex were rewritten to focus on how to install carbon monoxide detectors when they are required by adopted codes. These changes are based on the 2007 FPRF report “Development of a Technical Basis for Carbon Monoxide Detector Siting”. The committee notes that there is a continuing need for research on the dominant transport mechanisms for carbon monoxide.

Public Input No. 198-NFPA 72-2022 [New Section after 17.12.2]

17.12.2.1

Carbon monoxide detectors installed in unconditioned areas shall be listed for the environment.

Statement of Problem and Substantiation for Public Input

It is not uncommon to install carbon monoxide detectors in areas that may not be climatically controlled. This new clause makes it clear that detectors need to be certified for use in unconditioned areas if that is where they are installed.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 199-NFPA 72-2022 [New Section after 3.3.323]	
Public Input No. 199-NFPA 72-2022 [New Section after 3.3.323]	

Submitter Information Verification

Submitter Full Name: Scott Lang
Organization: Honeywell International
Street Address:
City:
State:
Zip:
Submittal Date: Tue Mar 29 10:49:49 EDT 2022
Committee: SIG-IDS

Committee Statement

Resolution: FR-5365-NFPA 72-2022

Statement: An annex note is provided for the listing requirements for carbon monoxide detectors to emphasize the requirement in 10.4.3 to list devices for the environments where they are installed.

Public Input No. 525-NFPA 72-2022 [New Section after 17.15.9.1]

TITLE OF NEW CONTENT

Manual Station Used for Releasing Service.

Manual stations used for activation of releasing systems shall be clearly identified.

Statement of Problem and Substantiation for Public Input

Some manual stations in the past have been identified as being connected to a releasing system. Newer stations have not been identified as initiating a releasing system or sequence. Yes the system they are attached to is a fire alarm system but since these stations are for releasing they, in some circumstances, not activate a general alarm for the building fire alarm system. Also many systems have been inadvertently activated by personnel testing the systems. They may be testing the building system but in many cases they may not have the requisite training on special hazard systems and these stations should be clearly identified to reduce the possibility of inadvertent release.

Submitter Information Verification

Submitter Full Name: Thomas Parrish
Organization: Telgian Corporation
Affiliation: Personal Submission
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 11:06:41 EDT 2022
Committee: SIG-IDS

Committee Statement

Resolution: This requirement is already covered in section 17.15.2. It states that manual fire boxes used for other than fire alarm shall have boxes other than red and be labeled. In addition, Section 17.15.9.2 is an existing section already.

Public Input No. 246-NFPA 72-2022 [Section No. 17.15.9.2]

17.15.9.2

Manual fire alarm boxes shall be installed so that they are conspicuous, unobstructed, and readily accessible.

Statement of Problem and Substantiation for Public Input

NFPA 72 makes an important distinction between "accessible" and "readily accessible" in Chapter 3. As such, manually actuated alarm initiating devices (pull stations) should be readily accessible in keeping with their purpose as part of a fire alarm/signaling system.

Submitter Information Verification

Submitter Full Name: Joe Scibetta
Organization: BuildingReports
Street Address:
City:
State:
Zip:
Submittal Date: Tue Apr 26 11:13:46 EDT 2022
Committee: SIG-IDS

Committee Statement

Resolution: Manual pull stations cannot meet the definition for readily accessible. A good example is when using break glass covers. The definition for readily accessible specifies that tools cannot be used (exception being a key). Break glass covers have a metal tool hanging from the cover to break the glass. See Section 3.3.3, 2022 NFPA 72.

Public Input No. 444-NFPA 72-2022 [Section No. 17.17.4.2]

17.17.4.2

Two signals shall be provided for a temperature supervisory device in accordance with 17.17.4.2.1 and 17.17.4.2.2

17.17.4.2.1

One signal shall indicate a decrease in water temperature to ~~40°F~~ 40F (4.4~~°C), and the other~~ 4C)

17.17.4.2.2

The second signal shall indicate its restoration to above ~~40°F~~ 40 F (4.4~~°C~~ 4 C)~~.~~

Statement of Problem and Substantiation for Public Input

Manual of style issue. The existing section has (2) shalls and addresses two separate signals. The TG proposed two additional sub sections to comply with MOS.

Submitter Information Verification

Submitter Full Name: Samuel Rokowski
Organization: Maddox Electric Co Inc
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 26 15:14:09 EDT 2022
Committee: SIG-IDS

Committee Statement

Resolution: FR-5272-NFPA 72-2022
Statement: The existing text is revised to remove the duplicate “shall” to meet the NFPA Manual of Style.

Public Input No. 481-NFPA 72-2022 [Section No. 18.3.6]

~~**18.3.6 ***~~ – ~~Connections.~~

~~Terminals, leads, or addressable communication, that provide for monitoring the integrity of the notification appliance connections shall be provided.~~

Statement of Problem and Substantiation for Public Input

If PI 147 is accepted, delete this as this was moved into "Notification Appliance Circuits"

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 147-NFPA 72-2022 [New Section after 18.3.7.2]	

Submitter Information Verification

Submitter Full Name: Daniel Grosch
Organization: UL LLC
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 27 12:52:48 EDT 2022
Committee: SIG-NAS

Committee Statement

Resolution: PI 147 was not accepted to relocate this requirement, so 18.3.6 should remain, as it is applicable to the appliance and not the circuit.

Public Input No. 542-NFPA 72-2022 [Section No. 18.3.7.1]

18.3.7.1*

A notification appliance circuit shall comply with Chapter 12.

Additional Proposed Changes

File Name	Description	Approved
NFPA_72-2025_DC_NACs_053122ms1.docx	replacement section for 18.3.7.1	

Statement of Problem and Substantiation for Public Input

Adds clarity on how to design and install DC NACs

Submitter Information Verification

Submitter Full Name: Morris Stoops
Organization: Carrier
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 15:38:49 EDT 2022
Committee: SIG-NAS

Committee Statement

Resolution: CI-5361-NFPA 72-2022

Statement: The technical committee is seeking further input on requirements that apply to notification appliance circuits as applied in section 18.3.7. A task group has been assigned to further consolidate and clarify work that has already been worked on by a previous task group. It needs to be clarified if they want to use "subsystems" or "circuits," which circuits voltage drop calculations are expected to be performed on, and which proposed sections are better as annex material vs. requirements in the body.

Public Input No. 147-NFPA 72-2022 [New Section after 18.3.7.2]

ADD 18.3.7.3, 18.3.7.4 and 18.3.7.5

18.3.7.3 A notification appliance intended to be connected to a fire alarm system with fire resistant wiring, shall be installed in accordance with the manufacturers installation instructions and in accordance with NFPA 70, article 728.

18.3.7.4 Duplicate terminals, leads, or connectors shall be provided to monitor the integrity of the notification appliance to the fire alarm system.

18.3.7.5 A low power wireless notification appliance shall comply with the performance requirements in section 23.16.

Statement of Problem and Substantiation for Public Input

Current Edition lacks reference to the use of fire resistance wire.
Current Edition does not mention the need for duplicate terminals/leads for supervision on wired systems.
Current Edition also does not provide for wireless type notification appliances.
This proposal address these needs.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 481-NFPA 72-2022 [Section No. 18.3.6]	

Submitter Information Verification

Submitter Full Name: Daniel Grosch
Organization: Ul Llc
Street Address:
City:
State:
Zip:
Submittal Date: Mon Feb 21 08:37:50 EST 2022
Committee: SIG-NAS

Committee Statement

Resolution: Proposed language is redundant. Proposed 18.3.7.3 is already covered under the requirements of chapter 12. Proposed 18.3.7.4 is already covered in 18.3.6. Proposed 18.3.7.5 is already covered under the requirements of chapter 23.

Public Input No. 250-NFPA 72-2022 [Section No. 18.3.7.2]

18.3.7.2

The selection of wire size and material shall meet the performance requirements of this ~~chapter and Chapter 14~~ . Code and NFPA 70, article 760.

Statement of Problem and Substantiation for Public Input

If you search this chapter and chapter 14 you will not find reference to wire size and material. This proposal revises the text to reference this Code and NFPA 70, article 760 for permitted wire size and material.

Submitter Information Verification

Submitter Full Name: Daniel Grosch
Organization: UL LLC
Street Address:
City:
State:
Zip:
Submittal Date: Wed Apr 27 13:39:10 EDT 2022
Committee: SIG-NAS

Committee Statement

Resolution: NFPA 70 does not provide performance requirements and should not be referenced here.

Public Input No. 197-NFPA 72-2022 [New Section after 18.4.1]

18.4.4.2. Maximum sound pressure. **Fire alarm system audibility levels shall not exceed 35 dB above the average ambient sound level described in Section 18.4.4.1 or 35 dB above the peak ambient sound level.**

Statement of Problem and Substantiation for Public Input

Many fire alarm systems installed today are over-designed. The designer needs to simply meet the minimum audibility criteria to ensure it meets code. As long as the designer stays under the maximum decibel level of 110, the system is compliant. However, this scenario often leads to fire alarm notification appliances that generate excessive noise levels that can be traumatic to some building occupants. There is currently no means for a code official to require fire alarm audibility levels to be reduced when noise levels are excessively loud. It is not uncommon to see fire alarm notification appliances generate decibel levels at 95, 100 or even higher in buildings where the average ambient sound level is in the 30s, 40s or 50s. As long as the decibel level does not exceed 110, it is compliant in NFPA 72. Everyone agrees the fire alarm should be heard in all areas of a building. However, decibel levels that are too high can be traumatic to children, especially infants and toddlers. The intent of this change is to encourage designers to discontinue the practice of over-designing fire alarm systems or installing too many audible notification appliances in a space.

Submitter Information Verification

Submitter Full Name: John Swanson
Organization: Self
Affiliation: Self
Street Address:
City:
State:
Zip:
Submittal Date: Fri Mar 25 17:51:53 EDT 2022
Committee: SIG-NAS

Committee Statement

Resolution: Comments will be taken into consideration as part of PI's 157 and 158.

Public Input No. 157-NFPA 72-2022 [New Section after 18.4.1.7]

Restricted Audible Mode Operation

18.4.1.8 Restricted Audible Mode Operation (RAMO) Notification

18.4.1.8.1 Where maximum sound pressure levels are required for a protected space, this operation shall be referred to as Restricted Audible Mode Operation (RAMO).

18.4.1.8.2 RAMO areas shall be indicated on the project drawings.

18.4.1.8.3 RAMO shall be permitted to be used only where there is constant awake and mobile staff.

18.4.1.8.4 RAMO shall not be used in protected areas where people may be sleeping without constant awake mobile staff.

18.4.1.8.5 Where required by the AHJ, for fixed use applications, the RAMO system shall be designed, installed and maintained such that the sound pressure level produced by the RAMO notification appliances throughout the protected space shall be at least 5 dBA-fast and not more than 20 dBA-fast above the average ambient sound pressure level or the maximum sound pressure level having a duration of 60 seconds, whichever is greater, measured at 5 ft. (1.5 m) above the finished floor in the protected space.

The minimum sound pressure level produced in the protected area by the RAMO system shall be 45 dBA- fast.

18.4.1.8.6 Where required by the AHJ, for non-fixed use applications, the RAMO system shall be designed, installed and maintained with automatic sound pressure level adjustment controls such that the sound pressure level produced by the RAMO notification appliances throughout the protected space shall be maintained at least 5 dBA-fast and not more than 20 dBA-fast above the average ambient sound pressure level or the maximum sound pressure level having a duration of 60 seconds, whichever is greater, measured at 5 ft. (1.5 m) above the finished floor in the protected space. The minimum sound pressure level produced in the protected area by the RAMO shall be 45 dBA-fast.

18.4.1.8.7 Audible notification appliances for RAMO shall be Listed for a minimum of 45 dBA-fast at 10' on axis.

18.4.1.8.8 RAMO audible appliances shall be permitted to start their output cycle at 50% of the final volume for the 1 st 1/3 of the output cycle. This operation shall be referred to as RMO Ramp-up.

18.4.1.8.8.1 RAMO Ramp-up shall not be permitted on live paging operation, where the system is capable of providing live paging.

18.4.1.8.8.2 RAMO audible output that utilizes RAMO Ramp-up shall be measured at the maximum tone output of the appliance.

18.4.1.8.9 RAMO areas shall be reviewed at least annually to determine if the occupancy has changed.

18.4.1.8.10 Visual notification appliances shall not be permitted to eliminate audible notification in the protected area.

A18.4.1.8.1 The purpose of this RAMO information is to provide guidance to designers, engineers, users and AHJs relative to applications where the maximum amplitude of general area audible notification appliances should be controlled so as to not cause undue health issues for facility occupants. This is different than Public or Private Mode audible notification as these two modes set the minimum SPL for the use, but do not address the maximum amplitudes. An example of one of these applications would be facilities for people with Autism. The Risk Assessment should address the use of RAMO. There have been situations where the system notification appliances can frighten or cause undo panic of occupants, which can impede the orderly evacuation of the protected space. Cases such as small children or autistic people reacting to the "instant on and very loud" notification appliance activation are of concern. For these types of environments, preference should be given to utilize voice alarm systems that

utilize RAMO Ramp-up for pre-recorded messages.

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Additional Proposed Changes

File Name	Description	Approved
72_Held_PC_300_SIG-NAS_.pdf		

Statement of Problem and Substantiation for Public Input

NOTE: This Public Input appeared as “Rejected but Held” in Public Comment No. 300 of the A2021 Second Draft Report for NFPA 72 and per the Regs. at 4.4.8.3.1.

SUBSTANTIATION:
Results of System Amplitude Task Group

Submitter Information Verification

Submitter Full Name: TC on SIG_NAS
Organization: NFPA
Street Address:
City:
State:
Zip:
Submittal Date: Thu Feb 24 17:09:54 EST 2022
Committee: SIG-NAS

Committee Statement

Resolution: FR-5352-NFPA 72-2022
Statement: There is a need for reduced audible levels to represent neurodiverse individuals. The TC is assigning a task group to further evaluate the location and requirements for this new proposed mode of operation.

Public Input No. 158-NFPA 72-2022 [New Section after 18.4.1.7]

Maximum Public Mode Audible Level

18.4.1.9 Maximum Public Mode Audible Levels

18.4.1.9.1 When the Risk Assessment determines it is warranted where design or actual testing indicates that the Public Mode audible notification SPL will/does exceed 45 dBA-fast above the average ambient sound pressure level or the maximum sound pressure level having a duration of 60 seconds, whichever is greater, measured at 5 ft. (1.5 m) above the finished floor in the protected space, the AHJ shall have the authority to require that the audible notification SPL output be lowered to a maximum of 45 dBA-fast above the average ambient sound pressure level or the maximum sound pressure level having a duration of 60 seconds, whichever is greater, measured at 5 ft. (1.5 m) above the finished floor in the protected space.

18.4.1.9.1.1 Where the Public Mode SPL of a protected space has been reduced, said reductions shall be recorded in system documentation.

18.4.1.9.1.2 For areas where the Public Mode SPL has been reduced, each application shall be reviewed annually to determine if the application has changed.

A18.4.1.9.1 The purposed of this code section is to provide a method for AHJs to require that the amplitude of a system be adjusted so as not to exacerbate a situation. The Risk Assessment should address these applications, the changes should be documented and all the applications reviewed regularly for changes that may require system modifications.

Additional Proposed Changes

File Name	Description	Approved
72_Held_PC_301_SIG-NAS_.pdf		

Statement of Problem and Substantiation for Public Input

NOTE: This Public Input appeared as “Rejected but Held” in Public Comment No. 301 of the A2021 Second Draft Report for NFPA 72 and per the Regs. at 4.4.8.3.1.

SUBSTANTIATION:
System Maximum Audible Mode Operation

Submitter Information Verification

Submitter Full Name: TC on SIG_NAS
Organization: NFPA
Street Address:
City:
State:
Zip:
Submittal Date: Thu Feb 24 17:24:25 EST 2022
Committee: SIG-NAS

Committee Statement

Resolution: FR-5352-NFPA 72-2022

Statement: There is a need for reduced audible levels to represent neurodiverse individuals. The TC is assigning a task group to further evaluate the location and requirements for this new proposed mode of operation.

Public Input No. 546-NFPA 72-2022 [Section No. 18.5.4]

18.5.4* Appliance Photometrics.

The light output shall comply with the polar dispersion requirements for public mode signaling as described in ~~UL 1638,~~ ~~*Visible Signaling Devices for Fire Alarm and Signaling Systems, Including Accessories*~~ ~~,~~ EN 54-23, Part 23: Fire alarm devices - Visual alarm devices, or equivalent.

Statement of Problem and Substantiation for Public Input

The EN standard has a more robust, even distribution of light. This reduces the likelihood of an appliance creating a pattern effect to meet specific measurement locations.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 548-NFPA 72-2022 [Section No. 18.5.5.9.1]	
Public Input No. 549-NFPA 72-2022 [Section No. 18.5.5.9.2.1]	

Submitter Information Verification

Submitter Full Name: Robert Schifiliti
Organization: r. p. Schifiliti Associates, I
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 17:25:36 EDT 2022
Committee: SIG-NAS

Committee Statement

Resolution: There is not enough data regarding the polar light distribution at this time to support a change to EN54-23. It is also the TC's understanding that the listing criteria are conflicting between UL 1638 and EN54-23. A task group will be created to study the effectiveness of visual signaling appliances light output.

Public Input No. 548-NFPA 72-2022 [Section No. 18.5.5.9.1]

18.5.5.9.1

Any design that provides a minimum of 0.0375 lumens/ft^2 (0.4036 lumens/m^2) of illumination at any point within the covered area at all angles specified by the polar dispersion planes for wall- or ceiling-mounted public mode visual notification appliances in ~~UL 1638,~~ ~~*Visible Signaling Devices for Fire Alarm and Signaling Systems, Including Accessories,*~~ - EN 54-23, Part 23: Fire alarm devices - Visual alarm devices , , or equivalent, as calculated for the maximum distance from the nearest visual notification appliance, shall be permitted in lieu of the requirements of 18.5.5, excluding 18.5.5.10.

Statement of Problem and Substantiation for Public Input

The EN standard has a more robust, even distribution of light. This reduces the likelihood of an appliance creating a pattern effect to meet specific measurement locations.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 546-NFPA 72-2022 [Section No. 18.5.4]	
Public Input No. 549-NFPA 72-2022 [Section No. 18.5.5.9.2.1]	

Submitter Information Verification

Submitter Full Name: Robert Schifiliti
Organization: r. p. Schifiliti Associates, I
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 17:31:22 EDT 2022
Committee: SIG-NAS

Committee Statement

Resolution: There is not enough data regarding the polar light distribution at this time to support a change to EN54-23. It is also the TC's understanding that the listing criteria are conflicting between UL 1638 and EN54-23. A task group will be created to study the effectiveness of visual signaling appliances light output.

Public Input No. 549-NFPA 72-2022 [Section No. 18.5.5.9.2.1]

18.5.5.9.2.1

Documentation provided to the authority having jurisdiction shall include the inverse square law calculations using each of the vertical and horizontal polar distribution angles in ~~UL 1638, *Visible Signaling Devices for Fire Alarm and Signaling Systems, Including Accessories* ,~~ EN 54-23, Part 23: Fire alarm devices - Visual alarm devices , or equivalent.

Statement of Problem and Substantiation for Public Input

The EN standard has a more robust, even distribution of light. This reduces the likelihood of an appliance creating a pattern effect to meet specific measurement locations.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 546-NFPA 72-2022 [Section No. 18.5.4]	
Public Input No. 548-NFPA 72-2022 [Section No. 18.5.5.9.1]	

Submitter Information Verification

Submitter Full Name: Robert Schifiliti
Organization: r. p. Schifiliti Associates, I
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 17:34:06 EDT 2022
Committee: SIG-NAS

Committee Statement

Resolution: There is not enough data regarding the polar light distribution at this time to support a change to EN54-23. It is also the TC's understanding that the listing criteria are conflicting between UL 1638 and EN54-23. A task group will be created to study the effectiveness of visual signaling appliances light output.

Public Input No. 359-NFPA 72-2022 [Section No. 21.2.4]

21.2.4*

Emergency control function interface devices shall be located ~~within 3 ft~~ within 3 ft (0. ~~9 m)~~ 9m) without conduit or 20 feet (6m) in conduit of the component controlling the emergency control function where the control circuit is not configured as a Class D circuit.

Statement of Problem and Substantiation for Public Input

Revise to be consistent with the requirements of 12.6.9.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 360-NFPA 72-2022 [Section No. A.21.2.4]	

Submitter Information Verification

Submitter Full Name: Chris Heaton
Organization: Electronic Security Association
Affiliation: Electronic Security Association
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 24 17:24:36 EDT 2022
Committee: SIG-PRO

Committee Statement

Resolution: FR-5005-NFPA 72-2022
Statement: This change to 21.2.4 and A.21.2.4 is consistent with allowances in 12.6.9. Changes made to the proposed text were to ensure compliance with the MOS. The words metal raceway or metal armored cables were chosen to clarify that plastic raceways are not to be used.

Public Input No. 457-NFPA 72-2022 [Section No. 21.2.4]

21.2.4*

Emergency control function interface devices shall be located within ~~3 ft (~~ ~~3 ft (910 mm)~~ 3 ft (~~0. 9 m)~~ 9m) without conduit or 20 feet (6m) in conduit of the component controlling the emergency control function where the control circuit is not configured as a ~~Class D circuit.~~ Class D circuit.

A.21.2.4

Emergency control function interface devices can be located far from the device to be actuated, such as air-handling units and exhaust fans located on the roof. The requirement for monitoring installation wiring for integrity only applies to the wiring between the fire alarm control unit and the emergency control function interface device. For example, it does not apply to the wiring between the emergency control function interface device and a motor stop/start control relay, or between the emergency control function interface device and the equipment to be controlled (e.g., air-handling units and exhaust fans). The location of the emergency control function interface device within ~~3 ft (910 mm)~~ 3 ft (0.9m) without conduit or 20 feet (6m) in conduit applies to the point of interface and not to remotely located equipment.

Where Class D circuits are utilized to actuate emergency control functions (such as but not limited to door closers, AHU shutdown, and damper controls), the fire alarm control point is not required to be within ~~3 ft (910 mm)~~ 3 ft (0.9m) without conduit or 20 feet (6m) in conduit of the interface point to the system or device to be controlled. It is important to note that in some cases these control circuits are not part of the fire alarm system but rather part of the other systems performing the functions. See Figure A.3.3.153.1.1 for additional details.

Additional Proposed Changes

File Name	Description	Approved
NFPA_72_BS_SB_3_3_153_1_1_change_to_diagram_comments.docx		

Statement of Problem and Substantiation for Public Input

Revise to be consistent with requirements of 12.6.9.

Submitter Information Verification

Submitter Full Name: Tim Knisely
Organization: Automatic Fire Alarm Association (AFAA)
Affiliation: Automatic Fire Alarm Association (AFAA)
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 27 09:11:40 EDT 2022
Committee: SIG-PRO

Committee Statement

Resolution: FR-5005-NFPA 72-2022

Statement: This change to 21.2.4 and A.21.2.4 is consistent with allowances in 12.6.9. Changes made to the proposed text were to ensure compliance with the MOS. The words metal raceway or metal armored cables were chosen to clarify that plastic raceways are not to be used.

Public Input No. 519-NFPA 72-2022 [Section No. 21.2.4]

21.2.4*

Emergency control function interface devices shall be located within 3 ft (0.9 m) without conduit or 20 feet (6m) in conduit of the component controlling the emergency control function where the control circuit is not configured as a Class D circuit.

Statement of Problem and Substantiation for Public Input

Revise to be consistent with requirements of 12.6.9

Submitter Information Verification

Submitter Full Name: Megan Hayes
Organization: Nema
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 10:06:56 EDT 2022
Committee: SIG-PRO

Committee Statement

Resolution: FR-5005-NFPA 72-2022
Statement: This change to 21.2.4 and A.21.2.4 is consistent with allowances in 12.6.9. Changes made to the proposed text were to ensure compliance with the MOS. The words metal raceway or metal armored cables were chosen to clarify that plastic raceways are not to be used.

Public Input No. 573-NFPA 72-2022 [Section No. 21.2.4]

21.2.4*

Emergency control function interface devices shall be located within 3 ft (0.9 m) ~~of~~ , or within 20 ft (6.096 m) if installed in metal conduit, metal armored cable, or equivalently protected against mechanical injury, of the component controlling the emergency control function where the control circuit is not configured as a Class D circuit.

Statement of Problem and Substantiation for Public Input

This additional provision will allow this requirement to be more inline with the provisions of section 12.6.6 which allows 20' of unsupervised circuiting if installed where mechanically protected from mechanical injury. This change is specifically needed to allow fire alarm connection to machine room-less (MRL) elevators, where often fire alarm modules must be installed farther than 3 feet from the elevator controller. Without this allowance, it would be impossible to meet the elevator code and comply with NFPA 72 at the same time.

Submitter Information Verification

Submitter Full Name: Larry Rietz
Organization: Jensen Hughes
Street Address:
City:
State:
Zip:
Submittal Date: Wed Jun 01 15:29:34 EDT 2022
Committee: SIG-PRO

Committee Statement

Resolution: FR-5005-NFPA 72-2022
Statement: This change to 21.2.4 and A.21.2.4 is consistent with allowances in 12.6.9. Changes made to the proposed text were to ensure compliance with the MOS. The words metal raceway or metal armored cables were chosen to clarify that plastic raceways are not to be used.

Public Input No. 226-NFPA 72-2022 [Section No. 21.2.11]

21.2.

~~11~~

11 If a fire alarm system is a component of a life safety network and it communicates data to other systems providing life safety functions, or it receives data from such systems,

~~the following~~

21.2.11.1 through 21.2.11.4 shall apply

~~:~~

.

21.2.11.1 The path used for communicating data

~~shall be monitored for integrity. This shall include monitoring~~

, including the physical communications media and the ability to maintain intelligible communications , shall be monitored for integrity .

21.2.11.2 Data received from the network shall not affect the operation of the fire alarm system in any way other than to display the status of life safety network components.

21.2.11.3 Where non-fire alarm systems are interconnected to the fire alarm system using a network or other digital communications technique, a signal (e.g., heartbeat, poll, ping, query) shall be generated between the fire alarm system and the non-fire alarm system.

21.2.11.4 Failure of the fire alarm system to receive confirmation of the transmission described in 21.2.11.3 shall cause a trouble signal

~~to indicate within 200 seconds~~

on the fire alarm system to be indicated within 200 seconds .

Statement of Problem and Substantiation for Public Input

This public input is submitted by the SIG-PRO Committee Manual of Style Task Group. Those participating in the task group were: Leonard Belliveau, Jr., Dwayne Griffith, Jacob Hemke, Jebediah Novak, Christian Pierson, and Donald Struck. The task group was charged with reviewing the text under the purview of the SIG-PRO committee for compliance with the 2004 Edition of the NFPA Manual of Style. The revised language included in this input is not intended to make technical changes, only editorial ones.

Section 3.3.1.2.4 of the Manual of Style requires only one sentence per list item. This PI will convert the list into subsections to comply with this requirement.

Submitter Information Verification

Submitter Full Name: Jebediah Novak
Organization: Cedar Rapids Electrical JATC
Street Address:
City:

State:
Zip:
Submittal Date: Thu Apr 21 14:22:55 EDT 2022
Committee: SIG-PRO

Committee Statement

Resolution: FR-5010-NFPA 72-2022
Statement: Section 3.3.1.2.4 of the Manual of Style requires only one sentence per list item. This PI will convert the list into subsections to comply with this requirement.

Public Input No. 227-NFPA 72-2022 [Section No. 21.3.2]

21.3.2 *

_

Facilities Without a Required Building Fire Alarm System.

21.3.2.1 In facilities without a required building fire alarm system, fire alarm initiating devices used to initiate elevator Phase I Emergency Recall Operation shall be connected to either a nonrequired building fire alarm system or a dedicated function fire alarm control unit

~~that~~

.

21.3.2.2 The control unit described in 21.3.2.1 shall be designated as "elevator recall control and supervisory control unit," and permanently identified on the dedicated function fire alarm control unit and on the record drawings.

Statement of Problem and Substantiation for Public Input

This public input is submitted by the SIG-PRO Committee Manual of Style Task Group. Those participating in the task group were: Leonard Belliveau, Jr., Dwayne Griffith, Jacob Hemke, Jebediah Novak, Christian Pierson, and Donald Struck. The task group was charged with reviewing the text under the purview of the SIG-PRO committee for compliance with the 2004 Edition of the NFPA Manual of Style. The revised language included in this input is not intended to make technical changes, only editorial ones.

Section 1.8.3 of the Manual of Style requires sections containing more than one requirement to be divided into subsections.

Submitter Information Verification

Submitter Full Name: Jebediah Novak
Organization: Cedar Rapids Electrical JATC
Street Address:
City:
State:
Zip:
Submittal Date: Thu Apr 21 14:37:42 EDT 2022
Committee: SIG-PRO

Committee Statement

Resolution: FR-5012-NFPA 72-2022
Statement: Corrected for Manual of Style.

Section 1.8.3 of the Manual of Style requires sections containing more than one requirement to be divided into subsections.

Added dedicated function fire alarm for clarity and to align with the original intent.

Public Input No. 228-NFPA 72-2022 [Section No. 21.3.8]

21.3.8 *

When sprinklers are required in elevator hoistways by other codes and standards,

~~fire~~

the following shall apply:

(1) Fire alarm initiating devices shall be installed to initiate Elevator Phase I Emergency Recall Operation in accordance with ASME A17.1/CSA B44, *Safety Code for Elevators and Escalators*

~~, and the following shall apply:~~

.

(2) Outputs from the fire alarm system to the elevator system shall comply with 21.3.14.

(3) The fire alarm initiating device(s) shall be installed in accordance with Chapter 17.

(4) Where sprinklers are located at the top of the hoistway, associated fire detection device(s) shall be located at the top of the hoistway.

(5) Where sprinklers are located at the bottom of the hoistway (the pit), associated fire detection device(s) shall be installed in the pit

~~in accordance with Chapter 17~~

.

- ~~Outputs from the fire alarm system to the elevator system shall comply with 21.3.14 .~~
- ~~The fire alarm initiating device(s) shall be installed in accordance with Chapter 17 .~~

Statement of Problem and Substantiation for Public Input

This public input is submitted by the SIG-PRO Committee Manual of Style Task Group. Those participating in the task group were: Leonard Belliveau, Jr., Dwayne Griffith, Jacob Hemke, Jebediah Novak, Christian Pierson, and Donald Struck. The task group was charged with reviewing the text under the purview of the SIG-PRO committee for compliance with the 2004 Edition of the NFPA Manual of Style. The revised language included in this input is not intended to make technical changes, only editorial ones.

Section 1.8.3 of the Manual of Style requires sections containing more than one requirement to be divided into subsections. This takes one of the requirements in the main section and creates a list item from it. It also eliminates the reference to Chapter 17 from the list item concerning sprinklers located at the bottom of the hoistway as that was redundant to the requirement in list item 3.

Submitter Information Verification

Submitter Full Name: Jebediah Novak
Organization: Cedar Rapids Electrical JATC
Street Address:
City:

State:
Zip:
Submittal Date: Thu Apr 21 14:45:03 EDT 2022
Committee: SIG-PRO

Committee Statement

Resolution: FR-5013-NFPA 72-2022
Statement: Corrected for Manual of Style.

Section 1.8.3 of the Manual of Style requires sections containing more than one requirement to be divided into subsections. This takes one of the requirements in the main section and creates a list item from it.

It also eliminates the reference to Chapter 17 from the list item concerning sprinklers located at the bottom of the hoistway as that was redundant to the requirement in list item 3.

Public Input No. 580-NFPA 72-2022 [New Section after 21.6.2]

21.6.2.1 Documentation

OEO, including all items as required in 21.6.2.2 through 21.6.2.11, shall be documented per 7.4.8 and approved by the authority having jurisdiction.

Statement of Problem and Substantiation for Public Input

This requires the designer to document the exact OEO sequence of operation and to have that sequence approved by the AHJ. This connects the requirement to the detailed list of sequences provided in PI No. 575. Understanding and documenting the programming for a complicated OEO is critical to the initial acceptance test and subsequent periodic testing for OEEs.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 575-NFPA 72-2022 [Section No. 7.4.9]	Reference to sequence of operations documentation list

Submitter Information Verification

Submitter Full Name: Larry Rietz
Organization: Jensen Hughes
Street Address:
City:
State:
Zip:
Submittal Date: Wed Jun 01 18:57:48 EDT 2022
Committee: SIG-PRO

Committee Statement

Resolution: FR-5025-NFPA 72-2022

Statement: Due to the complexity inherently involved in OEO, all of the OEO, as outlined in 21.6.2.2 through 21.6.2.11, need to be properly documented and approved by the AHJ. Renumber subsequent sections. The reference to 7.4.8 was corrected to 7.4.9, which is the correct reference.

Public Input No. 366-NFPA 72-2022 [Section No. 21.6.2.4]

21.6.2.4* Manual Floor Selection.

21.6.2.4.1

A means shall be furnished at the Fire Command Center or the Emergency Command Center to provide for the manual selection of each floor in the building.

21.6.2.4.2

The manual floor selection shall be actuated only by authorized or emergency personnel.

21.6.2.4.3

When OEO is not yet in effect and a manual floor selection is made to initiate OEO, a signal shall be sent to the elevator system simulating an active alarm for that floor.

21.6.2.4.4

When OEO is in effect and a manual floor selection is made, the elevator evacuation zone shall be permitted by the authority having jurisdiction to be expanded as described in 21.6.2.3.4 or by adding that floor to the evacuation zone by providing an additional signal(s) to the elevator system indicating the manually selected floor(s) .

21.6.2.4.5

Each manual selection means shall have the capability to cancel a manually actuated output signal.

Statement of Problem and Substantiation for Public Input

When the Authority Having Jurisdiction determines the manual floor selection does not have the same operation as an automatic fire alarm initiating device, then additional output signals are required to be provided by the fire alarm system to the elevator system to distinguish how the elevator evacuation zone is to expand.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 367-NFPA 72-2022 [New Section after A.21.6.2.4]	

Submitter Information Verification

Submitter Full Name: Kevin Brinkman
Organization: National Elevator Industry, In
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 24 18:20:59 EDT 2022
Committee: SIG-PRO

Committee Statement

Resolution: FR-5021-NFPA 72-2022

Statement: When the Authority Having Jurisdiction determines the manual floor selection does not have the same operation as an automatic fire alarm initiating device, then additional output signals are required to be provided by the fire alarm system to the elevator system to distinguish how the elevator evacuation zone is to expand. Annex material is added to clarify the addition to 21.6.2.4.4.

Public Input No. 205-NFPA 72-2022 [Section No. 21.6.2.4.4]

21.6.2.4.4– *

When OEO is in effect and a manual floor selection is made, the elevator evacuation zone shall be permitted by the authority having jurisdiction to be expanded as described in 21.6.2.3.4 or by adding that floor to the evacuation zone by providing an additional signal(s) to the elevator system indicating the manually selected floor(s) .

Statement of Problem and Substantiation for Public Input

When the Authority Having Jurisdiction determines the manual floor selection does not have the same operation as an automatic fire alarm initiating device, then additional output signals are required to be provided by the fire alarm system to the elevator system to distinguish how the elevator evacuation zone is to expand.

Submitter Information Verification

Submitter Full Name: Sagiv Weiss-Ishai
Organization: SF Fire Department
Affiliation: SFFD
Street Address:
City:
State:
Zip:
Submittal Date: Mon Apr 11 10:34:24 EDT 2022
Committee: SIG-PRO

Committee Statement

Resolution: FR-5021-NFPA 72-2022
Statement: When the Authority Having Jurisdiction determines the manual floor selection does not have the same operation as an automatic fire alarm initiating device, then additional output signals are required to be provided by the fire alarm system to the elevator system to distinguish how the elevator evacuation zone is to expand. Annex material is added to clarify the addition to 21.6.2.4.4.

Public Input No. 544-NFPA 72-2022 [Section No. 21.6.2.4.4]

21.6.2.4.4

When OEO is in effect and a manual floor selection is made, the elevator evacuation zone shall be permitted by the authority having jurisdiction to be expanded as described in 21.6.2.3.4 or by adding that floor to the evacuation zone by providing an additional signal(s) to the elvator system indicating the manually selected floor(s) .

Statement of Problem and Substantiation for Public Input

When the Authority Having Jurisdiction determines the manual floor selection does not have the same operation as an automatic fire alarm initiating device, then additional output signals are required to be provided by the fire alarm system to the elevator system to distinguish how the elevator evacuation zone is to expand.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 545-NFPA 72-2022 [New Section after A.21.6.2.4]	

Submitter Information Verification

Submitter Full Name: David McColl
Organization: Otis Canada Inc
Affiliation: National Elevator Industry, Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 15:51:18 EDT 2022
Committee: SIG-PRO

Committee Statement

Resolution: FR-5021-NFPA 72-2022

Statement: When the Authority Having Jurisdiction determines the manual floor selection does not have the same operation as an automatic fire alarm initiating device, then additional output signals are required to be provided by the fire alarm system to the elevator system to distinguish how the elevator evacuation zone is to expand. Annex material is added to clarify the addition to 21.6.2.4.4.

Public Input No. 581-NFPA 72-2022 [Section No. 21.7.7]

21.7.7

Where interconnected as a combination system, a fire fighter's smoke control station (FSCS) shall be provided to ~~perform~~ provide annunciation, manual control ~~over~~ , and manual override of the automatic operation of the system's smoke control strategy.

Statement of Problem and Substantiation for Public Input

Revised wording to clarify the intent/purpose of the FSCS. The FSCS is to provide annunciation of the automatic control of the smoke control system, as well as allowing manual control of fans and dampers including the ability to override automatically activated components of the smoke control system. This language is more in accordance with the requirements of IFC 909.16 (2021 edition).

Submitter Information Verification

Submitter Full Name: Larry Rietz
Organization: Jensen Hughes
Street Address:
City:
State:
Zip:
Submittal Date: Wed Jun 01 19:12:03 EDT 2022
Committee: SIG-PRO

Committee Statement

Resolution: FR-5019-NFPA 72-2022
Statement: The language provides better clarity of the required FSCS operation.

Public Input No. 229-NFPA 72-2022 [Section No. 23.3]

23.3

System Features.

23.3.1 The features required for a protected premises fire alarm system shall be documented as a part of the system design

and

.

23.3.2 The features shall be determined in accordance with 23.3.

1

3 through 23.3.

3

5 .

23.3.

1
3 *

Required Systems.

Features for required systems shall be based on the requirements of other applicable codes or statutes that have been adopted by the enforcing jurisdiction.

--Renumber A. 23.3.

2 *
1 to A.23.3.3--

23.3.4* **Nonrequired (Voluntary) Systems and Components.**

The features for a nonrequired system shall be established by the system designer on the basis of the goals and objectives intended by the system owner.

--Renumber A. 23.3.2

.1
to A.23.3.4 --

23.3.4.1 Nonrequired protected premises systems and components shall meet the requirements of this Code.

23.3.

2
4 .

2
2 Nonrequired systems and components shall be identified on the record drawings required in 7.2.1(15) .

23.3.

3
5 **Required Features.**

23.3.

3
5 .1 *

_
Building Alarm and Signaling Systems.

Protected premises systems that serve the alarm and signaling needs of a building or buildings shall include one or more of the following systems or functions:

(1) Manual fire alarm signal initiation

(2) Automatic fire alarm and supervisory signal initiation

(3) Monitoring of abnormal conditions in fire suppression systems

(4) Actuation of fire suppression systems

(5) Actuation of emergency control functions

(6) Actuation of fire alarm notification appliances

(7) In-building fire emergency voice/alarm communications

(8) Automatic carbon monoxide alarm and supervisory signal initiation

(9) Actuation of carbon monoxide notification appliances

(10) Guard's tour supervisory service

(11) Process monitoring supervisory systems

(12) Actuation of off-premises signals

(13) Combination systems

Renumber A. 23.3.3. 1 to A.23.3.5.1

23.3.5. 2 *

_
Dedicated Function Fire Alarm Systems.

Renumber A. 23.3.3.2

.1
to A.23.3.5.2

23.3.5.2.1 In facilities without a building fire alarm system, a dedicated function fire alarm system shall be permitted

and

.

23.3.5.2.2 The dedicated function fire alarm system described in 23.3.5.2.1 shall not be required to include other functions or features of a building fire alarm system.

23.3.

~~3~~
5 .2.

~~2~~
3 Where a dedicated function fire alarm system exists and a building fire alarm system is subsequently installed, the systems shall be interconnected and comply with 23.8.2 .

Statement of Problem and Substantiation for Public Input

This public input is submitted by the SIG-PRO Committee Manual of Style Task Group. Those participating in the task group were: Leonard Belliveau, Jr., Dwayne Griffith, Jacob Hemke, Jebediah Novak, Christian Pierson, and Donald Struck. The task group was charged with reviewing the text under the purview of the SIG-PRO committee for compliance with the 2004 Edition of the NFPA Manual of Style. The revised language included in this input is not intended to make technical changes, only editorial ones.

Section 1.8.3 of the Manual of Style requires sections containing more than one requirement to be divided into subsections. Accommodating this required the renumbering of subsequent sections, as well as the need to properly renumber appendix material.

Submitter Information Verification

Submitter Full Name: Jebediah Novak
Organization: Cedar Rapids Electrical JATC
Street Address:
City:
State:
Zip:
Submittal Date: Thu Apr 21 15:14:56 EDT 2022
Committee: SIG-PRO

Committee Statement

Resolution: FR-5023-NFPA 72-2022
Statement: The language is revised for compliance with the NFPA Manual of Style. Section 1.8.3 of the Manual of Style requires sections containing more than one requirement to be divided into subsections or formatted into list form. Subsequent sections and any associated appendix materials are renumbered as necessary.

Public Input No. 316-NFPA 72-2022 [New Section after 23.3.3.1]

TITLE OF NEW CONTENT

Type your content here ...(14) Actuation of emergency shut down HVAC systems

Statement of Problem and Substantiation for Public Input

Emergency shut down control of residential HVAC system during a life-threatening event to prevent smoke spread of furnace fans ducts. During a life-threatening event the furnace fan can increase the spread of noxious fumes throughout the ductwork of the residence especially during the cooling season when a thermostat senses a rise in temperature from a fire and tries to cool the structure. There needs to be a requirement for all alarms to incorporate new technology into alarms that will when activated communicate with a residential HVAC systems fan relay to disconnect power during a catastrophic event. This procedure being required and a commercial setting has not been addressed in the residential setting where occupants are at a greater risk.
One of the practices for fire safety is to keep your bedroom doors shut in case of a fire but the residential ductwork would still have the ability to spread fumes and or fire materials into the room through the ductwork if the HVAC fan is not eliminated from the equation. A video and documentation showing how this technology could be Incorporated into existing alarms by manufacturers to save lives is available upon request.

Submitter Information Verification

Submitter Full Name: Rod Blincoe
Organization: Private Party
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 19 10:47:04 EDT 2022
Committee: SIG-PRO

Committee Statement

Resolution: The proposed language would be redundant. Emergency shut down of the HVAC system meets the definition of emergency control functions and combination system, which is already addressed in list items 5 and 13.

Public Input No. 582-NFPA 72-2022 [Section No. 23.3.3.2]

23.3.3.2* Dedicated Function ~~Fire~~ Alarm Systems.

23.3.3.2.1

In facilities without a building fire alarm system, a dedicated ~~function fire alarm~~ function alarm system shall be permitted and shall not be required to include other functions or features of a building fire alarm system.

23.3.3.2.2

Where a dedicated function ~~fire~~ alarm system exists and a building fire alarm system is subsequently installed, the systems shall be interconnected and comply with 23.8.2.

Statement of Problem and Substantiation for Public Input

Remove the word "fire" from a dedicated function alarm system. These systems are provided for a variety of reasons, including to provide dedicated alarm systems for carbon monoxide alarms, elevator recall function, fire suppression monitoring, gas monitoring, and other similar uses. Removing the word fire will allow the use of these systems in a variety of situations and help eliminate the confusion of installing a "fire alarm" system when not used for that purpose.

Submitter Information Verification

Submitter Full Name: Larry Rietz
Organization: Jensen Hughes
Street Address:
City:
State:
Zip:
Submittal Date: Wed Jun 01 19:20:33 EDT 2022
Committee: SIG-PRO

Committee Statement

Resolution: Dedicated function fire alarm system is the defined term located in Chapter 3. The definition of control unit encompasses other types of dedicated function alarm systems, including but not limited to carbon monoxide, sprinkler monitoring, and elevator recall.

Public Input No. 527-NFPA 72-2022 [New Section after 23.3.3.2.1]

TITLE OF NEW CONTENT

Other exstinguishing systems in buildings not required to have a Fire Alarm System

In buildings not required to have a buiding fire alarm system other suppression systems shall be permitted to be connected to the dedicated function sprinkler monitoring system.

Statement of Problem and Substantiation for Public Input

The definition and interpretation of the dedicated function system has been misapplied in the past. The intention was no not require additional notification and initiating devices in buildings that would not require a full building fire alarm based on the building and life safety code requirements. There are instances where you may have a dedicated sprinkler monitoring system in a location that does not require a building fire alarm system but may also have a kitchen hood or releasing system that currently, by definition, are not allowed to be connected to the dedicated function system. This change would allow these additional fire protection systems to be connected to the dedicated function system as alarm points based on the requirements for "other fire suppression systems" to be connected to the building alarm system.

Submitter Information Verification

Submitter Full Name: Thomas Parrish
Organization: Telgian Corporation
Affiliation: Personal Submission
Street Address:
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Submittal Date: Tue May 31 11:28:43 EDT 2022
Committee: SIG-PRO

Committee Statement

Resolution: FR-5030-NFPA 72-2022
Statement: The new language will allow suppression systems to be connected to a dedicated function fire alarm system.

Renumber subsequent sections.

Public Input No. 515-NFPA 72-2022 [Section No. 23.6.3.3.3.4]

23.6.3.3.3.4

Equipment rooms or enclosures shall be accessible to only service or authorized personnel via a locked access or via an enclosure requiring the use of tools to open, as acceptable by the authority having jurisdiction.

Statement of Problem and Substantiation for Public Input

Service Personnel is a defined term in 3.3.208 and they should have access to the equipment identified in this section in addition to authorized personnel.

Submitter Information Verification

Submitter Full Name: Sagiv Weiss-Ishai
Organization: San Francisco Fire Department
Affiliation: SFFD
Street Address:
City:
State:
Zip:
Submittal Date: Mon May 30 20:02:57 EDT 2022
Committee: SIG-PRO

Committee Statement

Resolution: The owner or owner's representative authorizes service personnel who work on the system, as well as all others identified by the definition of personnel.

Public Input No. 231-NFPA 72-2022 [Section No. 23.6.3.5]

23.6.3.5– Management Organization.

23.6.3.5.1 *

An organization shall be established and maintained to manage the life safety network

~~and~~

.

23.6.3.5.2 The organization described in 23.6.3.5.1 shall perform the following:

(1) Contain members appropriately certified by each manufacturer of the equipment and devices deployed on shared pathways to maintain such a network

(2) Service and maintain all shared

~~Class N~~

Class N pathways

(3) Maintain the deployment and shared pathways plan for the lifetime of the shared pathways

23.6.3.5.

~~2~~
3 *

Other service personnel, even when certified to service a specific system (i.e., fire alarm or MNS), shall be authorized and managed by this organization to ensure any outages of any system are planned, managed, and documented and appropriate steps are taken during outages to provide alternate protection of life and property.

--Renumber A.23.6.3.5.2 to A.23.6.3.5.3--

Statement of Problem and Substantiation for Public Input

This public input is submitted by the SIG-PRO Committee Manual of Style Task Group. Those participating in the task group were: Leonard Belliveau, Jr., Dwayne Griffith, Jacob Hemke, Jebediah Novak, Christian Pierson, and Donald Struck. The task group was charged with reviewing the text under the purview of the SIG-PRO committee for compliance with the 2004 Edition of the NFPA Manual of Style. The revised language included in this input is not intended to make technical changes, only editorial ones.

Section 1.8.3 of the Manual of Style requires sections containing more than one requirement to be divided into subsections. This required renumbering of subsequent sections as well as renumbering appendix material.

Submitter Information Verification

Submitter Full Name: Jebediah Novak
Organization: Cedar Rapids Electrical JATC

Street Address:
City:
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Submittal Date: Thu Apr 21 15:59:31 EDT 2022
Committee: SIG-PRO

Committee Statement

Resolution: FR-5032-NFPA 72-2022

Statement: The language is revised for compliance with the NFPA Manual of Style. Section 1.8.3 of the Manual of Style requires sections containing more than one requirement to be divided into subsections or formatted into list form. Subsequent sections and any associated appendix materials are renumbered as necessary.

Public Input No. 232-NFPA 72-2022 [Sections 23.6.3.8.7, 23.6.3.8.8]

~~Sections~~
23.6.3.8.

~~7, 23~~
7 The risk analysis shall consider the following types of potential events:

(1) Natural hazards, such as:

(a) Geological events

(b) Meteorological events

(2) Human caused, such as:

(a) Accidental events

(b) Intentional events

(3) Technological caused events

23 **.6.3.8.**

~~8~~
8 The types of potential events listed in 23.6.3.8.7

~~The risk analysis shall consider the following types of potential events~~
, which are not all-inclusive

~~but~~
, reflect the general categories that shall be considered in the risk analysis

~~:~~

(1) ~~Natural hazards — geological events~~
(2) ~~Natural hazards — meteorological events~~
(3) ~~Human caused — accidental events~~
(4) ~~Human caused — intentional events~~
(5) ~~Technological — caused events~~

.

23.6.3.8.

~~8~~
9 All other identified risks as required by the authority having jurisdiction shall be discussed and addressed in the analysis and maintenance plans.

Statement of Problem and Substantiation for Public Input

This public input is submitted by the SIG-PRO Committee Manual of Style Task Group. Those participating in the task group were: Leonard Belliveau, Jr., Dwayne Griffith, Jacob Hemke, Jebediah Novak, Christian Pierson, and Donald Struck. The task group was charged with reviewing the text

under the purview of the SIG-PRO committee for compliance with the 2004 Edition of the NFPA Manual of Style. The revised language included in this input is not intended to make technical changes, only editorial ones.

Section 23.6.3.8.7 contained more than one requirement, which is in conflict with Section 1.8.3 of the Manual of Style. The second requirement was moved to create a new subsection 23.6.3.8.8, requiring the existing 23.6.3.8.8 to be renumbered as 23.6.3.8.9.

Submitter Information Verification

Submitter Full Name: Jebediah Novak
Organization: Cedar Rapids Electrical JATC
Street Address:
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Submittal Date: Thu Apr 21 16:06:28 EDT 2022
Committee: SIG-PRO

Committee Statement

Resolution: FR-5036-NFPA 72-2022
Statement: The language is revised for compliance with the NFPA Manual of Style. Section 1.8.3 of the Manual of Style prohibits a section from more than one requirement.

Public Input No. 324-NFPA 72-2022 [Section No. 23.8.1.2.1.1]

23.8.1.2.1.1

The positive alarm sequence operation shall comply with the following:

(1) To initiate the positive alarm sequence operation, unless otherwise permitted by 23.8.1.2.1.3, the signal from an automatic fire detection device selected for positive alarm sequence operation shall be acknowledged at the fire alarm control unit by ~~qualified~~ authorized or emergency personnel within 15 seconds of annunciation.

(2) If the signal is not acknowledged within 15 seconds, notification signals in accordance with the building evacuation or relocation plan and remote signals shall be automatically and immediately actuated.

(3) If the positive alarm sequence operation is initiated in accordance with 23.8.1.2.1.1(1), ~~qualified personnel~~ authorized or emergency personnel shall have an alarm investigation phase of up to 180 seconds to evaluate the fire condition and reset the system.

(4) If the system is not reset during the alarm investigation phase, notification signals in accordance with the building evacuation or relocation plan and remote signals shall be automatically and immediately actuated.

(5) If a second automatic fire detector selected for positive alarm sequence is actuated during the alarm investigation phase, notification signals in accordance with the building evacuation or relocation plan and remote signals shall be automatically and immediately actuated.

(6)* If any other fire alarm initiating device is actuated, notification signals in accordance with the building evacuation or relocation plan and remote signals shall be automatically and immediately actuated.

Statement of Problem and Substantiation for Public Input

The issue with the term "Qualified personnel" is that it is not defined in Chapter 3 - Definitions - It is too broad and not specific.
Therefore, the defined terms Authorized Personnel and Emergency Personnel terms which have specific definitions in chapter 3 should be used throughout the Code.
Either Authorized or Emergency personnel should be qualified to handle the Positive Alarm sequence feature,

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 325-NFPA 72-2022 [Section No. 23.8.2.11.3]	

Submitter Information Verification

Submitter Full Name: Sagiv Weiss-Ishai
Organization: San Francisco Fire Department
Affiliation: SFFD
Street Address:
City:
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Zip:

Submittal Date: Mon May 23 12:33:48 EDT 2022

Committee: SIG-PRO

Committee Statement

Resolution: FR-5040-NFPA 72-2022

Statement: The changes clarify the application of the section as the terms “Authorized Personnel” and “Emergency Personnel” are defined by the Code. In regards to specific tasks a person may be qualified as defined in Section 3.3.236, but that same worker may not be authorized to perform those tasks.

Public Input No. 233-NFPA 72-2022 [Section No. 23.8.2.2]

23.8.2.

~~2~~

2 Except as permitted in 23.8.2.3 , the alarm and signaling system components shall

~~be~~

comply with one of the following:

(1) Be permitted to share equipment

~~or shall be~~

(2) Be able to operate as stand-alone subsystems

~~, but shall be~~

when arranged to function as a single system in accordance with 23.8.2.4 through 23.8.2.10

Statement of Problem and Substantiation for Public Input

This public input is submitted by the SIG-PRO Committee Manual of Style Task Group. Those participating in the task group were: Leonard Belliveau, Jr., Dwayne Griffith, Jacob Hemke, Jebediah Novak, Christian Pierson, and Donald Struck. The task group was charged with reviewing the text under the purview of the SIG-PRO committee for compliance with the 2004 Edition of the NFPA Manual of Style. The revised language included in this input is not intended to make technical changes, only editorial ones.

Section 1.8.3 of the Manual of Style requires sections containing more than one requirement to be divided into subsections. This PI takes the items contained in the existing section and creates a list.

Submitter Information Verification

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Street Address:
City:
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Submittal Date: Thu Apr 21 16:11:14 EDT 2022
Committee: SIG-PRO

Committee Statement

Resolution: FR-5041-NFPA 72-2022

Statement: The language is revised for compliance with the NFPA Manual of Style. Section 1.8.3 of the Manual of Style requires sections containing more than one requirement to be divided into subsections or formatted into list form.

Public Input No. 234-NFPA 72-2022 [Section No. 23.8.2.5]

23.8.2.5

~~_~~

The method of interconnection of fire alarm control units shall comply with 8.2.5.1 and 8.2.5.2.

23.8.2.5.1 The method of interconnection shall meet the monitoring requirements of

~~Section~~

Section 12.6 and

~~*NFPA 70*~~

NFPA 70 , Article 760

~~, and~~

~~.~~

23.8.2.5.2 The method of interconnection shall be achieved by the following recognized means:

(1) Electrical contacts listed for the connected load

(2) Data communications over a signaling line circuit(s) dedicated to the fire alarm or shared with other premises operating systems

~~Other~~

(3) Other listed methods

Statement of Problem and Substantiation for Public Input

This public input is submitted by the SIG-PRO Committee Manual of Style Task Group. Those participating in the task group were: Leonard Belliveau, Jr., Dwayne Griffith, Jacob Hemke, Jebediah Novak, Christian Pierson, and Donald Struck. The task group was charged with reviewing the text under the purview of the SIG-PRO committee for compliance with the 2004 Edition of the NFPA Manual of Style. The revised language included in this input is not intended to make technical changes, only editorial ones.

Section 1.8.3 of the Manual of Style requires sections containing more than one requirement to be divided into subsections.

Submitter Information Verification

Submitter Full Name: Jebediah Novak
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Submittal Date: Thu Apr 21 16:15:11 EDT 2022
Committee: SIG-PRO

Committee Statement

Resolution: FR-5043-NFPA 72-2022

Statement: The language is revised for compliance with the NFPA Manual of Style. Section 1.8.3 of the Manual of Style requires sections containing more than one requirement to be divided into subsections or formatted into list form. The references to other sections and NFPA 70 were deleted because they already apply and were redundant.

Public Input No. 235-NFPA 72-2022 [Section No. 23.8.2.6]

23.8.2.6

Where the signaling line circuit is shared by other premises operating systems, operation shall be in accordance with 23.8.4.

23.8.2.6.

~~1~~

1 All signal control and transport equipment (such as routers and servers) located in a critical fire alarm or emergency control function interface device signaling path shall be listed for fire alarm service

~~, unless the following conditions are met: The equipment meets~~

.

23.8.2.6.2 A fire alarm service listing as described in 23.8.2.6.1 shall not be required when the conditions of (1) through (6) are met:

(1) The equipment shall meet the performance requirements of 10.3.5 .

~~The equipment is~~

(2) The equipment shall be provided with primary and secondary power and monitored for integrity as required in

~~Section~~

Section 10.6 , 10.6.9 ,

~~Section~~

Section 10.19 , and

~~Section~~

Section 12.6 .

~~All~~

(3) All programming and configuration shall ensure a fire alarm system actuation time as required in 10.11.1 .

~~System bandwidth is~~

(4) System bandwidth shall be monitored to confirm that all communications between equipment that is critical to the operation of the fire alarm system or emergency control function interface devices take place within

~~10 seconds; failure~~

10 seconds

(5) Failure of the monitored bandwidth described in 23.8.2.6.2.4 shall be indicated within

~~200 seconds~~

200 seconds .

~~Failure~~

(6) Failure of any equipment that is critical to the operation of the fire alarm system or emergency control function interface devices is indicated at the master fire alarm control unit within

~~200 seconds~~

200 seconds .

23.8.2.6.

~~2~~

3 A listed barrier gateway, integral with or attached to each control unit or group of control units, as appropriate, shall be provided to prevent the other systems from interfering with or controlling the fire

alarm system.

23.8.2.6.

~~3~~

~~Where Class N~~

4 Where Class N is utilized for shared equipment, the requirements in 23.6.3 shall also apply.

Statement of Problem and Substantiation for Public Input

This public input is submitted by the SIG-PRO Committee Manual of Style Task Group. Those participating in the task group were: Leonard Belliveau, Jr., Dwayne Griffith, Jacob Hemke, Jebediah Novak, Christian Pierson, and Donald Struck. The task group was charged with reviewing the text under the purview of the SIG-PRO committee for compliance with the 2004 Edition of the NFPA Manual of Style. The revised language included in this input is not intended to make technical changes, only editorial ones.

Section 1.8.3 of the Manual of Style requires sections containing more than one requirement to be divided into subsections. Both Section 23.8.2.6.1 and list item (4) contain more than one requirement. Subsequent list items and sections were renumbered as necessary.

Submitter Information Verification

Submitter Full Name: Jebediah Novak
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Submittal Date: Thu Apr 21 16:20:40 EDT 2022
Committee: SIG-PRO

Committee Statement

Resolution: FR-5046-NFPA 72-2022
Statement: The language is revised for compliance with the NFPA Manual of Style. Section 1.8.3 of the Manual of Style requires sections containing more than one requirement to be divided into subsections or formatted as a list. Subsequent sections and any associated appendix materials are renumbered as necessary.

Public Input No. 325-NFPA 72-2022 [Section No. 23.8.2.11.3]

23.8.2.11.3

Remote access shall be permitted for testing and maintenance activities, including resetting, silencing, or operation of emergency control functions provided all of the following are met:

(1)* The system shall provide a means to manually terminate the remote access connection at the remote device and at the fire alarm or signaling system control unit at any time.

(2)* Remote access shall be automatically terminated within a maximum of 1 hour of inactivity in the remote access mode.

(3) Resetting, silencing, or operation of emergency control functions shall be limited to portion(s) of the system taken out of service.

(4) ~~Qualified~~ Service or authorized personnel shall be on-site to enable resetting, silencing, and operation of emergency control functions at the affected system(s) by password or limited access.

Statement of Problem and Substantiation for Public Input

The term "qualified personnel" is not defined in chapter 3 and therefore should not be used throughout the Code. It is too broad and not specific.
The terms "Service Personnel" and Authorized personnel" are already defined in chapter 3 and therefore should be used for specific actions indicated in the Code.
Only service or authorized personnel should be permitted to handle the remote access activities listed in this section

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 324-NFPA 72-2022 [Section No. 23.8.1.2.1.1]	same issue - "qualified personnel" is not a defined term

Submitter Information Verification

Submitter Full Name: Sagiv Weiss-Ishai
Organization: San Francisco Fire Department
Affiliation: SFFD
Street Address:
City:
State:
Zip:
Submittal Date: Mon May 23 12:42:53 EDT 2022
Committee: SIG-PRO

Committee Statement

Resolution: FR-5055-NFPA 72-2022

Statement: The term “qualified” is replaced with the word “authorized” to clarify which personnel the requirement is applicable to. A worker may be qualified as defined in 3.3.236 to perform certain tasks but they may not be authorized to perform those tasks. The service personnel need to be authorized.

Public Input No. 241-NFPA 72-2022 [Section No. 23.8.4.4.1]

23.8.4.4.1

The equipment shall be permitted to be attached to a fire alarm circuit, either among the fire alarm devices or as a branch or extension of the fire alarm pathways, when the

~~following requirements~~

requirements of (1) through (4) are met:

~~All~~

(1) All the equipment and pathways shall meet the monitoring for integrity requirements of Section 10.6.9 ,

~~Section~~

Section 10.19 , and

~~Section~~

Section 12.6 .

~~All~~

(2) All the equipment and pathways shall be maintained by a single service organization.

~~All~~

(3) All the equipment and pathways shall be installed in accordance with the applicable requirements of this Code.

~~All~~

(4) All the equipment shall comply with either (a) or (b):

(a) The equipment shall be listed as compatible with the fire alarm equipment

~~or the~~

.

(b) The equipment shall have an interface listed as compatible with the fire alarm equipment.

Statement of Problem and Substantiation for Public Input

This public input is submitted by the SIG-PRO Committee Manual of Style Task Group. Those participating in the task group were: Leonard Belliveau, Jr., Dwayne Griffith, Jacob Hemke, Jebediah Novak, Christian Pierson, and Donald Struck. The task group was charged with reviewing the text under the purview of the SIG-PRO committee for compliance with the 2004 Edition of the NFPA Manual of Style. The revised language included in this input is not intended to make technical changes, only editorial ones.

List item (4) contains two requirements in violation of the Manual of Style. This PI creates a sub-list for the items.

Submitter Information Verification

Submitter Full Name: Jebediah Novak
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City:
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Submittal Date: Fri Apr 22 15:58:39 EDT 2022
Committee: SIG-PRO

Committee Statement

Resolution: FR-5058-NFPA 72-2022
Statement: The language is revised for compliance with the NFPA Manual of Style. Section 1.8.3 of the Manual of Style requires sections containing more than one requirement to be divided into subsections or formatted into a list.

Public Input No. 236-NFPA 72-2022 [Section No. 23.8.4.7]

23.8.4.7 *

_

Combination Systems Signaling.

23.8.4.7.1 In combination systems, fire alarm signals shall be distinctive

,

and clearly recognizable

~~, and~~

.

23.8.4.7.2 In combination systems, fire alarm signals shall be indicated as follows in descending order of priority

~~, except where otherwise required by other governing laws, codes or standards, or by other parts of this Code:~~

:

(1)___ Signals associated with life safety

(2)___ Signals associated with property protection

(3)___ Trouble signals associated with life and/or property protection

(4)___ All other signals

23.8.4.7.3 The order of priority described in 23.8.4.7.2 shall be permitted to be modified where otherwise required by other governing laws, codes or standards, or by other parts of this Code.

Statement of Problem and Substantiation for Public Input

This public input is submitted by the SIG-PRO Committee Manual of Style Task Group. Those participating in the task group were: Leonard Belliveau, Jr., Dwayne Griffith, Jacob Hemke, Jebediah Novak, Christian Pierson, and Donald Struck. The task group was charged with reviewing the text under the purview of the SIG-PRO committee for compliance with the 2004 Edition of the NFPA Manual of Style. The revised language included in this input is not intended to make technical changes, only editorial ones.

This PI creates three subsections from existing section 23.8.4.7 to comply the Section 1.8.3 of the Manual of Style.

Submitter Information Verification

Submitter Full Name: Jebediah Novak
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Submittal Date: Thu Apr 21 16:30:12 EDT 2022

Committee: SIG-PRO

Committee Statement

Resolution: FR-5062-NFPA 72-2022

Statement: The language is revised for compliance with the NFPA Manual of Style. Section 1.8.3 of the Manual of Style requires sections containing more than one requirement to be divided into subsections or formatted into a list.

Public Input No. 237-NFPA 72-2022 [Section No. 23.8.5.4.1]

23.8.5.4.1 *

Systems equipped with alarm verification features shall be permitted

~~under~~

where all the

~~following conditions:~~

conditions of 23.8.5.4.1.1 through 23.8.5.4.1.5 are met.

23.8.5.4.1.1 The alarm verification feature

~~is~~

shall not initially be enabled, unless conditions or occupant activities that are expected to cause nuisance alarms are anticipated in the area that is protected by the smoke detectors.

23.8.5.4.1.2 Enabling of the alarm verification feature shall be protected by password or limited access.

23.8.5.4.1.3 A smoke detector that is continuously subjected to a smoke concentration above alarm threshold

~~does~~

shall not delay the system functions of Sections 10.7 through 10.17 , or 21.2.1 by more than

~~1 minute~~

1 minute .

23.8.5.4.1.4 Actuation of an alarm-initiating device other than a smoke detector

~~causes~~

shall cause the system functions of Sections 10.7 through 10.17 , or 21.2.1 without additional delay

23.8.5.4.1.5 The current status of the alarm verification feature

~~is~~

shall be shown on the record of completion *[see Figure 7.8.2(a) , item 4.3]* .

Statement of Problem and Substantiation for Public Input

This public input is submitted by the SIG-PRO Committee Manual of Style Task Group. Those participating in the task group were: Leonard Belliveau, Jr., Dwayne Griffith, Jacob Hemke, Jebediah Novak, Christian Pierson, and Donald Struck. The task group was charged with reviewing the text under the purview of the SIG-PRO committee for compliance with the 2004 Edition of the NFPA Manual of Style. The revised language included in this input is not intended to make technical changes, only editorial ones.

Submitter Information Verification

Submitter Full Name: Jebediah Novak
Organization: Cedar Rapids Electrical JATC
Street Address:
City:
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Zip:
Submittal Date: Thu Apr 21 16:34:15 EDT 2022
Committee: SIG-PRO

Committee Statement

Resolution: FR-5063-NFPA 72-2022
Statement: The language is revised for compliance with the NFPA Manual of Style.

Public Input No. 238-NFPA 72-2022 [Section No. 23.8.5.10.5]

23.8.5.10.

~~5~~

5 In facilities that are not required to install a protected premises fire alarm system, the alarm and supervisory devices shall be

~~connected~~

:

(1) Connected to the releasing service fire alarm control unit

~~, and their actuation shall be annunciated~~

(2) Annunciated at the releasing service control unit

when actuated

Statement of Problem and Substantiation for Public Input

This public input is submitted by the SIG-PRO Committee Manual of Style Task Group. Those participating in the task group were: Leonard Belliveau, Jr., Dwayne Griffith, Jacob Hemke, Jebediah Novak, Christian Pierson, and Donald Struck. The task group was charged with reviewing the text under the purview of the SIG-PRO committee for compliance with the 2004 Edition of the NFPA Manual of Style. The revised language included in this input is not intended to make technical changes, only editorial ones.

This PI creates a list item for the multiple requirements of existing 23.8.5.10.5 for compliance with Section 1.8.3 of the Manual of Style.

Submitter Information Verification

Submitter Full Name: Jebediah Novak
Organization: Cedar Rapids Electrical JATC
Street Address:
City:
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Zip:
Submittal Date: Thu Apr 21 16:37:06 EDT 2022
Committee: SIG-PRO

Committee Statement

Resolution: FR-5068-NFPA 72-2022

Statement: The language is revised for compliance with the NFPA Manual of Style. Section 1.8.3 of the Manual of Style requires sections containing more than one requirement to be divided into subsections or formatted into a list.

Public Input No. 155-NFPA 72-2022 [Section No. 23.10.2]

23.10.2*

Fire alarm systems used for partial evacuation and relocation shall be designed and installed with a Level 2 or Level 3 pathway survivability in accordance with Section 12.4, unless otherwise permitted in 23.10.2.1, 23.10.2.2, or 23.10.2.3 such that attack by fire within a notification zone shall not impair control and operation of the notification appliances outside that notification zone.

23.10.2.1 Where notification zones are separated by less than 2-hour fire-rated construction, a pathway survivability of Level 4 shall be permitted.

23.10.2.2 Where Class X or Class N system pathways are installed and the incoming and outgoing pathways are separated by at least one-third of the maximum diagonal of the notification zone, a pathway survivability of Level 1 shall be permitted.

23.10.2.3 A performance-based alternative acceptable to the AHJ.

Additional Proposed Changes

File Name	Description	Approved
72_Held_PC_148_SIG-PRO_.pdf		

Statement of Problem and Substantiation for Public Input

NOTE: This Public Input appeared as “Rejected but Held” in Public Comment No. 148 of the A2021 Second Draft Report for NFPA 72 and per the Regs. at 4.4.8.3.1.

SUBSTANTIATION:
The original PI-74 substantiation was provided: As currently written, Section 23.10.2 is in conflict with Chapter 24
by not mandating a specific level of pathway survivability for tone-based fire alarm systems used in relocation or
partial evacuation systems. Pathway survivability is no less important in a tone-based fire alarm system (e.g.,
chimes used in a hospital or ambulatory care facility) than it is in a voice fire alarm system (EVACS). The Annex A
material for 23.10.2 seems to indicate that a fully sprinklered building is equivalent to pathway survivability
requirements, which it is not, and creates a conflict with Chapter 24.
The added language of 23.10.2.1 and 23.10.2.2 provides relief from a Level 2 or Level 3 pathway survivability
when there is less than 2-hour rated construction or provides an alternative as also currently allowed by Chapter 24
(24.3.14.4.1.2).
The PI was resolved (rejected) with the following committee resolution: This section permits performance-based
evaluation of the level of survivability required when partial evacuation is permitted in a facility utilizing tones. Tonal
systems are only required to have 5 minutes of alarm standby power and voice systems are required to have 15
minutes of alarm standby power. Additionally, tonal systems do not require 2 hours of communication that would be
required for a voice system.
This committee resolution statment is flawed. First, and most important, Section 23.10.2 says

NOTHING about a performance-based evaluation. It simply makes a requirement of survivability without stating how that is done, and section 23.10.3 says that “performance features” should be “described and technical justification provided”. If the intent of the committee was to make this purely a performance-based standard, that is not what is stated clearly for proper interpretation. Second, it references standby power requirements, which have NOTHING to do with pathway survivability. Third, it states that tonal systems do not require 2 hours of communication, which is obvious, but does not mean that tone-based relocation or partial evacuation systems do not need pathway survivability provisions for some length of time. The section has been altered and provided with a performance-based alternative per the Technical Committee’s resolution comment. Also it now includes an alternative provision for a Level 4 pathway survivability in conjunction with the recommendations of the Chapter 24 Task Group on Survivability so that NFPA 72 is coordinated when it comes to survivability requirements.

Submitter Information Verification

Submitter Full Name: TC on SIG-PRO
Organization: NFPA
Street Address:
City:
State:
Zip:
Submittal Date: Thu Feb 24 15:43:03 EST 2022
Committee: SIG-PRO

Committee Statement

Resolution: FR-5071-NFPA 72-2022

Statement: Partial evacuation or relocation sequence as applied to tone-based systems should be aligned with the same survivability requirements for voice-based systems as identified in chapter 24.

Deleted 23.10.3 because it is covered in the referenced sections of chapter 24.

Renumbered subsequent sections.

Public Input No. 239-NFPA 72-2022 [Section No. 23.10.2]

23.10.2*

Fire alarm systems used for partial evacuation and relocation shall be designed and installed such that attack by fire within a notification zone ~~shall not~~ does not impair control and operation of the notification appliances outside that notification zone.

Statement of Problem and Substantiation for Public Input

This public input is submitted by the SIG-PRO Committee Manual of Style Task Group. Those participating in the task group were: Leonard Belliveau, Jr., Dwayne Griffith, Jacob Hemke, Jebediah Novak, Christian Pierson, and Donald Struck. The task group was charged with reviewing the text under the purview of the SIG-PRO committee for compliance with the 2004 Edition of the NFPA Manual of Style. The revised language included in this input is not intended to make technical changes, only editorial ones.

This PI converts "shall not impair" to "does not impair" to comply with Section 1.8.3 of the Manual of Style which only permits one requirement (shall) per section.

Submitter Information Verification

Submitter Full Name: Jebediah Novak
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State:
Zip:
Submittal Date: Thu Apr 21 16:44:19 EDT 2022
Committee: SIG-PRO

Committee Statement

Resolution: See PI-155 for revised language for this section. This revision is no longer applicable.

Public Input No. 240-NFPA 72-2022 [Section No. 23.11.10]

23.11.10

~~If the releasing service fire alarm control unit is~~

Where located in a protected premises having a separate fire alarm system,

~~it shall~~

the releasing service fire alarm control unit shall comply with 23.11.10.1 and 23.11.10.2.

23.11.10.1 The control unit shall be monitored for alarm, supervisory, and trouble signals

~~, but~~

.

23.11.10.2 The control unit shall not be dependent on or affected by the operation or failure of the protected premises fire alarm system.

Statement of Problem and Substantiation for Public Input

This public input is submitted by the SIG-PRO Committee Manual of Style Task Group. Those participating in the task group were: Leonard Belliveau, Jr., Dwayne Griffith, Jacob Hemke, Jebediah Novak, Christian Pierson, and Donald Struck. The task group was charged with reviewing the text under the purview of the SIG-PRO committee for compliance with the 2004 Edition of the NFPA Manual of Style. The revised language included in this input is not intended to make technical changes, only editorial ones.

This PI subdivides existing Section 23.11.10 into two subsections to comply with Section 1.8.3 of the Manual of Style.

Submitter Information Verification

Submitter Full Name: Jebediah Novak
Organization: Cedar Rapids Electrical JATC
Street Address:
City:
State:
Zip:
Submittal Date: Thu Apr 21 16:45:17 EDT 2022
Committee: SIG-PRO

Committee Statement

Resolution: FR-5073-NFPA 72-2022
Statement: The language is revised for compliance with the NFPA Manual of Style. Section 1.8.3 of the Manual of Style requires sections containing more than one requirement to be divided into subsections or formatted as a list.

Public Input No. 242-NFPA 72-2022 [Section No. 23.16.2]

23.16.2 *

Power Supplies.

~~A primary battery(s) (~~

23.16.2.1 One or more primary batteries (dry cell) that meet the requirements of 23.16.2.1

~~or~~

through 23.16.2.

~~2~~

3 shall be permitted to be used as the sole power source for devices incorporating a low-power radio transmitter/transceiver.

23.16.2.1

~~The following conditions shall be met when one or more primary batteries are utilized and a catastrophic (open or short) single battery failure affects the alarm operation of the device:~~

.1 Each transmitter/transceiver shall

~~serve only one device and shall A low battery signal shall be transmitted before the~~

be individually identified at the system control unit.

- ~~The battery(s) shall be capable of operating the low-power radio transmitter/transceiver and its associated device for not less than 1 year before the battery depletion threshold is reached.~~

23.16.2.1.2 Where a device is no longer capable of providing 7 days of trouble signal operation followed by the signaling of a single non-trouble response , the battery depletion threshold has been reached and the device shall comply with 23 . 16.2.1.2.1 and 23.16.2.1.2.2.

23.16.2.1.2.1 A low battery signal shall be transmitted before the device has reached the battery depletion threshold.

23.16.2.1.2.2 The low battery signal shall comply with all of the following:

(1) The signal shall be distinctive from alarm, supervisory, tamper, and trouble signals

~~,~~

.

(2) The signal shall visibly identify the affected low-power radio transmitter/transceiver

~~, and, when silenced,~~

.

(3) The signal shall automatically re-sound at least once every

~~4 hours.Catastrophic (open or short) battery failure shall cause a trouble signal identifying~~

4-hours when silenced.

23.16.2.1.3 Trouble signals required by 23.16.2.2.3 or 23.16.2.3.3 shall comply with the following:

(1) Trouble signals shall identify the affected low-power radio transmitter/transceiver at the system control unit.

~~When silenced, the trouble signal~~

(2) Trouble signals shall automatically re-sound at least once every

~~4 hours.~~

4-hours when silenced.

23.16.2.2 Where one or more primary batteries are utilized and a catastrophic failure (open or short) of a single battery affects the alarm operation of the device, 23.16.2.2.1 through 23.16.2.2.4 shall apply.

23.16.2.2.1 Each transmitter/transceiver shall serve only one device

23.16.2.2.2 The battery(s) shall be capable of operating the low-power radio transmitter/transceiver and its associated device for not less than 1 year before the battery depletion threshold in 23.16.2.1.2 is reached.

23.16.2.2.3 Catastrophic (open or short) battery failure shall cause a trouble signal in accordance with 23.16.2.1.3.

23.16.2.2.4 Any mode of failure of a primary battery in a low-power radio transmitter/transceiver shall not affect any other low-power radio transmitter/transceiver.

23.16.2.

~~2~~

~~The following conditions shall be met when multiple batteries~~

3 Where multiple primary batteries are utilized and a

~~catastrophic~~

catastrophic failure (open or short)

~~single battery failure does~~

of a single battery does not affect the alarm operation of the device

~~:~~

, 23.16.2.3.1 through 23.16.2.3.3 shall apply.

23.16.2.3.1 Each transmitter/transceiver shall be permitted to serve more than one device

23.16.2.3.2 Two or more batteries shall be provided.

23.16.2.3.2.1 The combined batteries shall be capable of operating the low-power radio transmitter/transceiver and its associated device for not less than 1 year before the battery depletion threshold in 23.16.2.2

~~(3)~~

is reached.

- ~~A low battery signal shall be transmitted before the device is no longer capable of providing 7 days of trouble signal operation followed by the signaling of a single non-trouble response.~~

23.16.2.3.2.2 Each individual battery, primary and secondary, shall be separately monitored for the battery depletion threshold

~~, and a low battery signal shall be transmitted when an individual battery has reached the battery depletion threshold.~~

~~:~~

23.16.2.3.2.3 Following the failure of a single battery, the remaining battery(s) shall be capable of operating the low-power radio transmitter/transceiver and its associated device for not less than 7 days when the battery depletion threshold

~~in~~

is reached.

23.16.2.

~~2(~~

3

~~) is reached.~~

- ~~The low battery signal shall be distinctive from alarm, supervisory, tamper, and trouble signals, shall visibly identify the affected low-power radio transmitter/transceiver, and, when silenced, shall automatically re-sound at least once every 4 hours.~~

.3 Catastrophic (open or short) failure of any individual battery shall cause a trouble signal

~~identifying the affected low-power radio transmitter/transceiver at the system control unit. When silenced, the trouble signal shall automatically re-sound at least once every 4 hours. Each transmitter/transceiver shall be permitted to serve more than one device and shall be individually identified at the system control unit.~~

in accordance with 23.16.2.1.3.

Statement of Problem and Substantiation for Public Input

This public input is submitted by the SIG-PRO Committee Manual of Style Task Group. Those participating in the task group were: Leonard Belliveau, Jr., Dwayne Griffith, Jacob Hemke, Jebediah Novak, Christian Pierson, and Donald Struck. The task group was charged with reviewing the text under the purview of the SIG-PRO committee for compliance with the 2004 Edition of the NFPA Manual of Style. The revised language included in this input is not intended to make technical changes, only editorial ones.

This PI will restructure existing 23.16.2 for compliance with the Manual of Style and clarity and usability. Requirements common to both types of conditions are now located in 23.16.2.1, 23.16.2.2 contains requirements where a single battery failure would affect device operation, and a new 23.16.2.3 contains requirements specific to conditions where a single battery failure will not affect the device's operation.

Submitter Information Verification

Submitter Full Name: Jebediah Novak
Organization: Cedar Rapids Electrical JATC
Street Address:
City:
State:
Zip:
Submittal Date: Fri Apr 22 16:13:48 EDT 2022
Committee: SIG-PRO

Committee Statement

Resolution: FR-5074-NFPA 72-2022

Statement: The language is revised for compliance with the NFPA Manual of Style. Section 1.8.3 of the Manual of Style requires sections containing more than one requirement to be divided into subsections or formatted as list. The requirements are rearranged for clarity and usability.

Public Input No. 243-NFPA 72-2022 [Sections 23.16.3.1.5, 23.16.3.1.6]

Sections 23.16.3.1.5, 23.16.3.1.6

23.16.3.1.5*

An alarm signal from a low-power radio transmitter/transceiver shall latch at the fire alarm control system until manually reset~~ and~~ .

23.16.3.1.6

An alarm signal from a low-power radio transmitter/transceiver shall identify the particular initiating device in alarm.

23.16.3.1.6~~6~~ 7

Sixty seconds after the conclusion of resetting the fire alarm system, a non-restored actuated low-power radio transmitter/transceiver shall be identified at the fire alarm systems.

Statement of Problem and Substantiation for Public Input

This public input is submitted by the SIG-PRO Committee Manual of Style Task Group. Those participating in the task group were: Leonard Belliveau, Jr., Dwayne Griffith, Jacob Hemke, Jebediah Novak, Christian Pierson, and Donald Struck. The task group was charged with reviewing the text under the purview of the SIG-PRO committee for compliance with the 2004 Edition of the NFPA Manual of Style. The revised language included in this input is not intended to make technical changes, only editorial ones.

Section 23.16.3.1.5 is divided into two subsections for compliance with Section 1.8.3 of the Manual of Style which only permits one requirement to be contained in a paragraph. The other requirement is now located in Section 23.16.3.1.6, with the existing 23.16.3.1.6 being renumbered as 23.16.3.1.7.

Submitter Information Verification

Submitter Full Name: Jebediah Novak
Organization: Cedar Rapids Electrical JATC
Street Address:
City:
State:
Zip:
Submittal Date: Fri Apr 22 16:37:11 EDT 2022
Committee: SIG-PRO

Committee Statement

Resolution: FR-5079-NFPA 72-2022
Statement: The language is revised for compliance with the NFPA Manual of Style. Section 1.8.3 of the Manual of Style requires sections containing more than one requirement to be divided into subsections or formatted as a list. Subsequent sections and any associated appendix materials are renumbered as necessary.

Public Input No. 402-NFPA 72-2022 [Section No. 24.3.5.3]

~~24~~ 14 .~~3~~ X .~~5.3~~ X

Ancillary functions shall be inspected and tested annually to verify they will not impair the operation of the fire alarm system or the mass notification system.

Statement of Problem and Substantiation for Public Input

Test requirements here belong in Chapter 14

Submitter Information Verification

Submitter Full Name: Chris Heaton
Organization: Electronic Security Association
Affiliation: Electronic Security Association
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 25 18:52:39 EDT 2022
Committee: SIG-ECS

Committee Statement

Resolution: FR-5257-NFPA 72-2022
Statement: Testing requirements belong in Chapter 14. Revision of the text clarifies that the requirement pertains to emergency communication systems.

Public Input No. 475-NFPA 72-2022 [Section No. 24.3.5.3]

~~24.3.5.3~~ _ 14.X.X

Ancillary functions shall be inspected and tested annually to verify they will not impair the operation of the fire alarm system or the mass notification system.

Additional Proposed Changes

File Name	Description	Approved
NFPA_72_BS_SB_24_3_5_3_Ancillary_functions_comments.docx		

Statement of Problem and Substantiation for Public Input

Test requirement that belongs in Chapter 14.

Submitter Information Verification

Submitter Full Name: Tim Knisely
Organization: Automatic Fire Alarm Association (AFAA)
Affiliation: Automatic Fire Alarm Association (AFAA)
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 27 11:39:28 EDT 2022
Committee: SIG-ECS

Committee Statement

Resolution: FR-5257-NFPA 72-2022
Statement: Testing requirements belong in Chapter 14. Revision of the text clarifies that the requirement pertains to emergency communication systems.

Public Input No. 521-NFPA 72-2022 [Section No. 24.3.5.3]

~~24~~ Relocate to 14 . ~~3.5.3~~ X.X

Ancillary functions shall be inspected and tested annually to verify they will not impair the operation of the fire alarm system or the mass notification system.

Statement of Problem and Substantiation for Public Input

Test requirement that belong in Chapter 14.

Submitter Information Verification

Submitter Full Name: Megan Hayes
Organization: Nema
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 10:13:21 EDT 2022
Committee: SIG-ECS

Committee Statement

Resolution: FR-5257-NFPA 72-2022
Statement: Testing requirements belong in Chapter 14. Revision of the text clarifies that the requirement pertains to emergency communication systems.

Public Input No. 276-NFPA 72-2022 [Section No. 24.3.14.4.6.3]

24.3.14.4.6.3*

Circuits shall be separated in accordance with ~~at least~~ one or more of the following:

(1) The primary and redundant, or outgoing and return, conductors are separated by a floor assembly.

(2) The primary and redundant, or outgoing and return, conductors are located in dissimilar protected areas separated by a minimum of 1-hour fire-rated construction.

(3) The primary and redundant, or outgoing and return, conductors are separated by at least one-third the maximum diagonal of the notification zone.

(4) Performance alternatives are approved by the authority having jurisdiction.

Statement of Problem and Substantiation for Public Input

Changing the wording from "...one or more of the following:" to "...at least one of the following:" to be consistent all other charging statements in NFPA 72 to numbered lists.

Submitter Information Verification

Submitter Full Name: Andrew Woodward
Organization: Arup
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 11 15:29:14 EDT 2022
Committee: SIG-ECS

Committee Statement

Resolution: FR-5259-NFPA 72-2022
Statement: Changed the wording from "...at least one of the following:" to "...one or more of the following:" to be consistent all other charging statements in NFPA 72 to numbered lists.

Public Input No. 328-NFPA 72-2022 [Section No. 24.4.5.2]

24.4.5.2

Controls shall be located or secured to allow access only ~~by trained and authorized~~ by authorized, emergency or service personnel.

Statement of Problem and Substantiation for Public Input

The operating controls listed in 24.4.5 should be able to be accessed by authorized or emergency or service personnel as defined in Chapter 3. There is no need for the term "trained and authorized" as the term "authorized personnel" is already defined in the Code.
"Service Personnel" and "Emergency Personnel" should also be able to access the operating controls in addition to "Authorized Personnel" in order for them to perform Service or Emergency activities

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 336-NFPA 72-2022 [Section No. 24.5.2.1]	

Submitter Information Verification

Submitter Full Name: Sagiv Weiss-Ishai
Organization: San Francisco Fire Department
Affiliation: SFFD
Street Address:
City:
State:
Zip:
Submittal Date: Mon May 23 13:14:13 EDT 2022
Committee: SIG-ECS

Committee Statement

Resolution: FR-5261-NFPA 72-2022

Statement: The operating controls listed in 24.4.5 should be able to be accessed by authorized or emergency or service personnel as defined in Chapter 3. There is no need for the term "trained and authorized" as the term "authorized personnel" is already defined in the Code.

"Service personnel" and "emergency personnel" should also be able to access the operating controls in addition to "authorized personnel" in order for them to perform service or emergency activities.

Public Input No. 338-NFPA 72-2022 [Section No. 24.4.8.3.2]

24.4.8.3.2*

When the message is recorded, the repeated message sequence of 24.4.8.3.1 shall itself be repeated after a pause of 180 seconds ~~maximum, or other time as~~ maximum as established by the building safety fire plan and approved by the authority having jurisdiction, until ~~automatically~~ manualy silenced or reset by emergency personnel.

Statement of Problem and Substantiation for Public Input

The 180 seconds should be the MAXIMUM pause time permitted.
It shouldn't be permitted to use other unlimited times longer than the Maximum 180 seconds. Any other approved pause time which is less than 180 Second is already covered by the current language of this section indicating 180 seconds Maximum and it is not necessary to indicate other time.
The second proposed change for this section is to change the word "Automatically" to "Manually" to be consistent with the intent as clarified in the Annex to this section which indicates:
A.24.4.8.3.2: "Only first responders or other trained authorized emergency personnel should be able to intentionally and MANUALLY silence or reset the automatic prerecorded message sequence."

Submitter Information Verification

Submitter Full Name: Sagiv Weiss-Ishai
Organization: San Francisco Fire Department
Affiliation: SFFD
Street Address:
City:
State:
Zip:
Submittal Date: Mon May 23 16:38:59 EDT 2022
Committee: SIG-ECS

Committee Statement

Resolution: FR-5262-NFPA 72-2022
Statement: The 180 seconds is the maximum pause time.

The second change for this section is to change the word "automatically" to "manually" to be consistent with the intent as clarified in the annex to this section which indicates:

A.24.4.8.3.2: "Only first responders or other trained authorized emergency personnel should be able to intentionally and manually silence or reset the automatic prerecorded message sequence."

Building safety fire plan was changed to facility emergency plan since the application of these systems could be beyond fire.

Public Input No. 39-NFPA 72-2021 [New Section after 24.4.9]

Different Alert Signal for floor above and floor below.

Greetings, Im suggesting to add this articles concerning the signal zoning for the high raised building. when the evacuation signal (Temporal 3-3-3) plays at one of the floor where the fire is exist, the alert signal (20 PPM) must played on the floor above and floor below and the message of the fire alarm will plays in all other parts of the building. The alert signal on the floor above and the floor below must be different tone to allow the people to realize the location of fire and to avoid entering the risk zone and evacuate through fire area in certain condition. The different tone help the fire brigade and the people to chose the right direction when they lost the communication with outside and they are on the dark zone where the visibility is low. for example if the fire is exist on 4th floor, the people on the third floor will hear signal A and they will know that must go up and the people on second floor they will hear the signal B and will know that must go down.

Thank you

Statement of Problem and Substantiation for Public Input

Different Alert Signal for floor above and floor below.
The different tone help the fire brigade and the people to chose the right evacuation direction when they lost the communication with outside and they are on the dark zone where the visibility is low.

Submitter Information Verification

Submitter Full Name: Rabih AlAridi
Organization: Johnson Controls
Street Address:
City:
State:
Zip:
Submittal Date: Tue Dec 21 10:43:24 EST 2021
Committee: SIG-ECS

Committee Statement

Resolution: Currently, there is limited to no training for the public to understand pre-alert tones. Introducing new signals is likely to cause confusion rather than clarification. The submitter did not provide specific language for the proposed revision.

Public Input No. 336-NFPA 72-2022 [Section No. 24.5.2.1]

24.5.2.1*

Authorized or emergency personnel shall be permitted to control message initiation over the mass notification system.

Statement of Problem and Substantiation for Public Input

In addition to "Authorized personnel", "Emergency personnel" such as responding firefighters or emergency medical personnel, etc. should be able to generate live messages via the MNS when they arrived to the site upon an emergency condition.

"Emergency personnel" is a defined term in Chapter 3 and should be used in the Code when appropriate.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 328-NFPA 72-2022 [Section No. 24.4.5.2]	same issue

Submitter Information Verification

Submitter Full Name: Sagiv Weiss-Ishai
Organization: San Francisco Fire Department
Affiliation: SFFD
Street Address:
City:
State:
Zip:
Submittal Date: Mon May 23 16:06:49 EDT 2022
Committee: SIG-ECS

Committee Statement

Resolution: FR-5264-NFPA 72-2022

Statement: In addition to "authorized personnel", "emergency personnel" such as responding firefighters or emergency medical personnel, etc. should be able to generate live messages via the MNS when they arrived to the site upon an emergency condition.

"Emergency personnel" is a defined term in Chapter 3 and should be used in the Code when appropriate.

Public Input No. 327-NFPA 72-2022 [Section No. 24.5.2.2]

24.5.2.2*

Where required by the emergency response plan, the mass notification system shall provide the capability for authorized or emergency personnel to remotely activate live and prerecorded emergency messages.

Statement of Problem and Substantiation for Public Input

"Emergency personnel", as defined by chapter 3 should also be able to activate the live and pre-recorded EMERGENCY messages included in this section. For example, responding firefighters (who are emergency personnel) should be able to transmit live messages during a fire or non-fire emergency.

Submitter Information Verification

Submitter Full Name: Sagiv Weiss-Ishai
Organization: San Francisco Fire Department
Affiliation: SFFD
Street Address:
City:
State:
Zip:
Submittal Date: Mon May 23 13:07:27 EDT 2022
Committee: SIG-ECS

Committee Statement

Resolution: FR-5265-NFPA 72-2022
Statement: "Emergency personnel", as defined by chapter 3 should be able to activate the live and pre-recorded emergency messages included in this section. For example, responding firefighters (who are emergency personnel) should be able to transmit live messages during a fire or non-fire emergency.

Public Input No. 543-NFPA 72-2022 [New Section after 24.5.4]

TITLE OF NEW CONTENT

Type your content here ...

Additional Proposed Changes

File Name	Description	Approved
NFPA_72-2025_AC_NACS_for_C24_053122ms1.docx	Audio NAC Design Section	

Statement of Problem and Substantiation for Public Input

Provides guidance on designing audio NACs

Submitter Information Verification

Submitter Full Name: Morris Stoops
Organization: Carrier
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 15:42:43 EDT 2022
Committee: SIG-ECS

Committee Statement

Resolution: CI-5325-NFPA 72-2022

Statement: This proposed modification is to provide guidance to the industry on proper design, application, installation, and test of loudspeaker notification circuits.

This Committee Input is intended to solicit public input regarding the design of NACs. The committee requests that a task group be assigned by the Correlating Committee to develop comments for the second draft. The assigned task group should coordinate with SIG-NAS for notification appliance circuits.

Public Input No. 268-NFPA 72-2022 [Section No. 24.6.3]

24.6.3* External Connections.

Wide-area mass notification systems shall be permitted to connect to regional mass notification systems and public emergency alarm reporting systems as defined in this Code, and public reporting systems as defined in ~~NFPA 1221~~ NFPA 1225 .

Statement of Problem and Substantiation for Public Input

As part of the Emergency Response and Responder Safety Document Consolidation Plan (consolidation plan) as approved by the NFPA Standards Council, the NFPA 1221 Standard has been combined into a new consolidated Standard, NFPA 1225.

Submitter Information Verification

Submitter Full Name: Rodger Reiswig
Organization: Johnson Controls
Street Address:
City:
State:
Zip:
Submittal Date: Fri Apr 29 09:22:09 EDT 2022
Committee: SIG-ECS

Committee Statement

Resolution: FR-5270-NFPA 72-2022

Statement: As part of the Emergency Response and Responder Safety Document Consolidation Plan (consolidation plan) as approved by the NFPA Standards Council, the NFPA 1221 Standard has been combined into a new consolidated Standard, NFPA 1225.

Public Input No. 584-NFPA 72-2022 [New Section after 24.9]

24.9.2 Where required by other governing laws, codes, and standards, fire alarm systems shall monitor all in-building, two-way radio communications enhancement systems for all required supervisory signals.

Statement of Problem and Substantiation for Public Input

Other model building codes, including IFC 510.4.2.5 (2021 edition), require fire alarm systems to monitor up to 8 different supervisory signals from an in-building, two-way emergency responder communications system. This requirement should be included in NFPA 72 to make sure these critical systems are monitored correctly by installed fire alarm systems.

Submitter Information Verification

Submitter Full Name: Larry Rietz
Organization: Jensen Hughes
Street Address:
City:
State:
Zip:
Submittal Date: Wed Jun 01 19:32:21 EDT 2022
Committee: SIG-ECS

Committee Statement

Resolution: FR-5368-NFPA 72-2022
Statement: Other model building codes, including IFC 510.4.2.5 (2021 edition), require fire alarm systems to monitor up to 8 different supervisory signals from emergency responder communication systems. This requirement makes sure these critical systems are monitored correctly by installed fire alarm systems.

Public Input No. 259-NFPA 72-2022 [Section No. 24.9]

24.9* Two-Way Radio Communications Enhancement Systems.

All in-building two-way radio communications enhancement systems shall be designed, installed, and maintained in accordance with ~~NFPA 1221~~ NFPA 1225 .

Statement of Problem and Substantiation for Public Input

As part of the Emergency Response and Responder Safety Document Consolidation Plan (consolidation plan) as approved by the NFPA Standards Council, NFPA 1221 Standard has been combined into a new consolidated Standard, NFPA 1225.

Submitter Information Verification

Submitter Full Name: Rodger Reiswig
Organization: Johnson Controls
Street Address:
City:
State:
Zip:
Submittal Date: Fri Apr 29 08:50:05 EDT 2022
Committee: SIG-ECS

Committee Statement

Resolution: FR-5273-NFPA 72-2022
Statement: As part of the emergency response and responder safety document consolidation plan (consolidation plan) as approved by the NFPA Standards Council, NFPA 1221 Standard has been combined into a new consolidated Standard, NFPA 1225.

Public Input No. 401-NFPA 72-2022 [Section No. 24.9]

24.9* Two-Way Radio Communications Enhancement Systems.

All in-building two-way radio communications enhancement systems shall be designed, installed, and maintained in accordance with ~~NFPA 1221~~ NFPA 1225 .

Statement of Problem and Substantiation for Public Input

Updated to reflect correct standard.

Submitter Information Verification

Submitter Full Name: Chris Heaton
Organization: Electronic Security Association
Affiliation: Electronic Security Association
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 25 18:50:02 EDT 2022
Committee: SIG-ECS

Committee Statement

Resolution: FR-5273-NFPA 72-2022
Statement: As part of the emergency response and responder safety document consolidation plan (consolidation plan) as approved by the NFPA Standards Council, NFPA 1221 Standard has been combined into a new consolidated Standard, NFPA 1225.

Public Input No. 474-NFPA 72-2022 [Section No. 24.9]

24.9* Two-Way Radio Communications Enhancement Systems.

All in-building two-way radio communications enhancement systems shall be designed, installed, and maintained in accordance with ~~NFPA 1221~~ NFPA ~~1221~~ 1225 .

Additional Proposed Changes

File Name	Description	Approved
NFPA_72_BS_SB_24_9_comments.docx		

Statement of Problem and Substantiation for Public Input

Updated to reflect correct standard.

Submitter Information Verification

Submitter Full Name: Tim Knisely
Organization: Automatic Fire Alarm Association (AFAA)
Affiliation: Automatic Fire Alarm Association (AFAA)
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 27 11:37:13 EDT 2022
Committee: SIG-ECS

Committee Statement

Resolution: FR-5273-NFPA 72-2022
Statement: As part of the emergency response and responder safety document consolidation plan (consolidation plan) as approved by the NFPA Standards Council, NFPA 1221 Standard has been combined into a new consolidated Standard, NFPA 1225.

Public Input No. 520-NFPA 72-2022 [Section No. 24.9]

24.9* Two-Way Radio Communications Enhancement Systems.

All in-building two-way radio communications enhancement systems shall be designed, installed, and maintained in accordance with ~~NFPA 1221~~ NFPA 1225 .

Statement of Problem and Substantiation for Public Input

Updated to reflect correct standard

Submitter Information Verification

Submitter Full Name: Megan Hayes
Organization: Nema
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 10:10:38 EDT 2022
Committee: SIG-ECS

Committee Statement

Resolution: FR-5273-NFPA 72-2022
Statement: As part of the emergency response and responder safety document consolidation plan (consolidation plan) as approved by the NFPA Standards Council, NFPA 1221 Standard has been combined into a new consolidated Standard, NFPA 1225.

Public Input No. 528-NFPA 72-2022 [Section No. 24.9]

24.9* Two-Way Radio Communications Enhancement Systems.

All in-building two-way radio communications enhancement systems shall be designed, installed, and maintained in accordance with ~~NFPA 1221~~ NFPA 1225 .

Statement of Problem and Substantiation for Public Input

Due to the consolidation project the document number has changed from 1221 to 1225.

Submitter Information Verification

Submitter Full Name: Thomas Parrish
Organization: Telgian Corporation
Affiliation: Personal Submission
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 11:39:32 EDT 2022
Committee: SIG-ECS

Committee Statement

Resolution: FR-5273-NFPA 72-2022
Statement: As part of the emergency response and responder safety document consolidation plan (consolidation plan) as approved by the NFPA Standards Council, NFPA 1221 Standard has been combined into a new consolidated Standard, NFPA 1225.

Public Input No. 583-NFPA 72-2022 [Section No. 24.9]

24.9* Two-Way Radio Communications Enhancement Systems.

24.9.1 All in-building two-way radio communications enhancement systems shall be designed, installed, and maintained in accordance with ~~NFPA 1221~~ NFPA 1225 .

Statement of Problem and Substantiation for Public Input

Updating to NFPA 1225, where NFPA 1221 was consolidating into. Also adding this as 24.9.1, so that a 24.9.2 can be added to the text by a different Public Input.

Submitter Information Verification

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Submittal Date: Wed Jun 01 19:29:51 EDT 2022
Committee: SIG-ECS

Committee Statement

Resolution: FR-5273-NFPA 72-2022
Statement: As part of the emergency response and responder safety document consolidation plan (consolidation plan) as approved by the NFPA Standards Council, NFPA 1221 Standard has been combined into a new consolidated Standard, NFPA 1225.

Public Input No. 495-NFPA 72-2022 [Chapter 25]

Chapter 25 _ ~~Reserved~~

25.1 Application.

25.1.1

The application, installation, and performance of gateway communications systems and their components shall comply with the requirements of this chapter.

25.1.2 The requirements of this chapter shall apply to gateway communications systems between the protected premises and the Public Safety Answering Points (PSAP).

25.1.3

Gateway communication systems shall consist of fire alarm control units, transmitters and other signal initiating devices or technologies communicate on wireless network(s) from the protected premises, through the gateway to a PSAP.

25.1.4

The requirements of Chapter 11, shall apply.

25.1.5

Inspection, testing, and maintenance shall be performed in accordance with testing frequencies and methods in Chapter 14.

25.1.6

The requirements of this chapter shall not apply to Chapter 29 unless specifically indicated.

25.2 Purpose.

25.2.1

The systems covered under Chapter 25 shall be for the transmission of signals between the protected premise and a PSAP.

25.2.2

This chapter establishes minimum required levels of performance, reliability, and quality for gateways and signal transmission from the gateway to a PSAP

25.2.3

A gateway communications system is intended to communicate alarm, supervisory and trouble signals from a protected premises to a PSAP.

25.3 General.

25.3.1

Gateway communications systems shall be designed, installed, operated, and maintained in accordance with this chapter to provide reliable transmission and receipt of alarms in a manner acceptable to the authority having jurisdiction.

25.3.2

A gateway communications system, as described herein, shall be permitted to be used for the transmission of other signals or calls of a public emergency nature, provided that such transmission does not interfere with the transmission and receipt of fire alarms.

25.3.3

All devices shall be designed to function satisfactorily under the climatic and environmental conditions to which they could be exposed.

25.3.3.1

All devices shall be identified as suitable for the location and conditions for which they are installed.

25.3.4

All circuits, paths, and equipment necessary for the receipt of signals from a protected premises shall be monitored for integrity.

25.3.5

All systems and signal transmissions shall be under the control of a designated supervising station.

25.3.5.1

Designation shall be through a contract between the owner and the supervising station.

25.3.5.2

The contract between the owner and the supervising station shall be the only one in force.

25.3.6

All gateway equipment shall be listed for its purpose

25.3.7

All gateway equipment shall be installed in locations accessible to the authority having jurisdiction for the purpose of inspection.

25.3.8

Gateway communications systems as defined in this chapter shall, in their entirety, be subject to a complete operational acceptance test upon completion of system installation.

25.3.8.1

The test(s) required by 25.3.8 shall be made in accordance with the requirements of the authority having jurisdiction; however, in no case shall the operational functions tested be less than those stipulated in Chapter 14.

25.3.8.2

Operational acceptance tests shall be performed on any alarm-reporting devices, as covered in this chapter, that are installed or modified subsequent to the test required by 25.3. 8.

25.3.9 Personnel Qualification.

Personnel shall be qualified and experienced in accordance with the requirements of 10.5.7

25.4 Communications Methods.

25.4.1 Application.

25.4.1.1

A gateway communications system shall include wireless network(s), for command and control communications between the protected premises, alarm processing equipment, supervising station and the PSAP.

25.4.1.2

A gateway communications system shall be permitted to be used with emergency communications systems covered under Chapter 24.

25.4.2 Wireless Network(s).

The terms *wireless network* and *cellular transmission* shall be considered the same and interchangeable throughout this chapter.

27.4.2.1

All wireless networks shall meet the requirements of 25. 4 .2.1.1 through 25. 4 . 2.1,4.

25.4.2.1.1

In addition to the requirements of this Code, all wireless equipment shall be designed and operated in compliance with all applicable rules and regulations of the Federal Communications Commission (FCC) or, where required, the National Telecommunications and Information Administration (NTIA).

25.4.2.1.2

Unlicensed wireless networks shall not be permitted.

25.4.2.1.3

Fire alarm signals, other emergency alarm signals, and monitoring for integrity signals shall be permitted on the same wireless network, dedicated for that purpose.

25.4.2.1.4

Two independent means shall be provided to retransmit an alarm signal from the gateway to the designated PSAP.

25.5 Alarm Processing Equipment.

The alarm processing equipment at the gateway required to receive and control signals from the protected premises shall be installed and maintained as defined in NFPA 1221 .

25.5.1 Visual Recording Devices.

25.5.1.1

Alarms shall be automatically received and recorded at the gateway.

25.5.1.2

A device for producing a permanent graphic recording of all alarm, supervisory, trouble, and test signals received or retransmitted, or both, shall be provided at each gateway for each system.

25.5.1.3

Reserve recording devices shall be provided in accordance with 25.7.1.3.1 and 25.7.1.3.2.

25.5.1.3.1

Where each gateway is served by a dedicated recording device, the number of reserve recording devices required on-site shall be equal to at least 5 percent of the systems that are in service and in no case less than one device.

25.5.1.3.2

Where two or more gateways are served by a common recording device, a reserve recording device shall be provided on-site for each gateway connected to a common recorder.

25.7.1.4

Permanent visual records shall comply with 25.7.1.4.1 and 24.7.1.4.2

25.5.1.4.1

A permanent visual record and an audible signal shall be required to indicate the receipt of an alarm.

25.5.1.4.2

The permanent record shall indicate the exact location from which the alarm is being transmitted.

25.5.1.5

Facilities shall be provided with a device that automatically records the date and time of receipt of each alarm.

25.5.2 System Integrity.

25.5.2.1

Circuits upon which transmission and receipt of alarms depend shall be constantly monitored for integrity to provide prompt warning of conditions adversely affecting reliability.

25.5.2.2

The power supplied to all required circuits and devices of the system shall be constantly monitored for integrity.

25.5.3 Trouble Signals.

25.5.3.1

Trouble signals shall be indicated where there is a trained and competent person on duty at all times within a gateway.

25.5.3.2

Trouble signals shall be distinct from alarm signals and shall be indicated by a visual and audible signal.

25.5.3.3

A switch for silencing the audible trouble signal shall be permitted, provided that the visual signal remains operating until the silencing switch is restored to its normal position.

25.5.3.4

The audible signal shall be responsive to faults on any other circuits that occur prior to restoration of the silencing switch to its normal position.

25.5.4 Power Supply.

25.5.4.1

The requirements of 26.3.6.4 shall be met for primary and secondary power for the gateway.

25.5.4.2

Visual and audible means to indicate a 15 percent or greater reduction of normal power supply (rated voltage) shall be provided.

25.5.4.3

Where the electrical service/capacity of the equipment required under Section 4.7 of NFPA 1221 satisfies the needs of equipment in this chapter, such equipment shall not be required to be duplicated.

25.5.5 Engine-Driven Generators.

The installation of engine-driven generator sets shall conform to the provisions of NFPA 37 , NFPA 110 , and NFPA 1221 .

25.5.6 Equipment Fire Protection.

Where applicable, electronic computer/data processing equipment shall be protected in accordance with NFPA 75 .

25.6 Gateway

25.6.1

All equipment shall be listed for its intended use and shall be installed in accordance

with NFPA 70 .

25.6.2

The alarm processing equipment shall be located where it can be monitored for alarm and trouble conditions and shall be accessible to be manned in case of a pathway or communications failure with the communications center.

25.6.3

Wireless alarm repeating systems used to repeat signals between a protected premises and the gateway processing equipment location shall meet the requirements of 25.6.3.1 through 25.6.3.4.

25.6.3.1

There shall be a minimum of two complete and independent alarm repeater systems, including batteries and power supplies, to provide redundancy.

25.6.3.2

If the gateway is configured with one alarm repeater in standby mode, the system shall be capable of detecting a communications failure and shall automatically switch to the backup system without interruption or loss of any alarm or trouble transmission.

25.6.3.3

Gateways shall not be used for any purpose other than alarm communications between the protected premises and the PSAP.

25.6.3.4

Where it is not possible to use the gateway alarm reporting infrastructure to provide communications between the protected premises and a PSAP alarm processing equipment at the contracted supervising station shall be used in accordance with 26.3, 26.4 or 26.5.

25.6.3.5

Pathways between the protected premises and the gateway alarm processing equipment shall be monitored for integrity and shall be dedicated and not used for any other purpose.

25.6.3.6

When communications protected premises and the gateway alarm processing equipment fails, the requirements of 25.6.3.6.1 through 25.6.3.6.3 shall apply.

25.6.3.6.1

A pathway or communications trouble condition shall be detected and annunciated at both the protected premises, the originating supervising station and the gateway alarm processing equipment within 200 seconds and shall meet the requirements of 25.5.3.

25.6.3.6.2

Visual and audible trouble alarm indications pertaining to a pathway or communications failure between the protected premises and the gateway alarm processing equipment shall be distinct from all other trouble alarms.

25.6.3.6.3

The gateway alarm processing equipment shall be manned by trained personnel until communications can be re-established.

Statement of Problem and Substantiation for Public Input

A new means of signal transport between the protected premises and a Public Safety Answering Point (PSAP) has been developed and is coming into use at this time. This means has the signal from the

protected premises pass through a supervising station and continue without interruption to a remote gateway. From the remote gateway, the signals are retransmitted directly into the appropriate PSAP for the dispatching of emergency forces or other personnel to the protected premises. There are a number of U S. Patents that have been issued for this technology.

This new chapter is being proposed to address the operation of these gateways and the means at which they are powered, provided for redundancy and pathway integrity.

Section 25.1 describes these systems in general as well as bring the requirements to be found in Chapters 11 and 14 into this new chapter.

Section 25.2 describes the purpose and scope of this new chapter.

Section 25.3 describes the general requirements for these systems and the pathway between the protected premises through the gateway and to the PSAP. This Section also details the contractual relationship between the system owner, the supervising station and the gateway.

Section 25.4 describes the requirements for the communications link between the protected premises and the gateway. These systems by their design are met to transmit over a cellular network or networks. A means of signal integrity is required.

Section 25.5 describes the requirements for the processing equipment that would be located within a gateway. This includes the recording equipment, power supplies, system integrity and fire protection.

Section 25.6 describes the requirements for the gateway. This includes redundancy of equipment within the gateway and pathway integrity back to the protected premises and supervising station.

The maker of this PI request that if issues with the base document are found, that a Task Group e named to address this new means of signal transport between the First Draft Meeting and Second Draft Meeting. PI's have also been sent to the Fundamentals Technical Committee. This PI is intended by the maker to be handled by SIG-SSS.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 497-NFPA 72-2022 [New Section after 10.5.6.4.3]	New Qualifications
Public Input No. 498-NFPA 72-2022 [New Section after 3.3.63]	New Definition
Public Input No. 499-NFPA 72-2022 [Section No. A.26.6.2.4]	Revised Exception
Public Input No. 501-NFPA 72-2022 [Section No. A.26.6.2.4]	New Fig.
Public Input No. 497-NFPA 72-2022 [New Section after 10.5.6.4.3]	
Public Input No. 498-NFPA 72-2022 [New Section after 3.3.63]	
Public Input No. 499-NFPA 72-2022 [Section No. A.26.6.2.4]	
Public Input No. 501-NFPA 72-2022 [Section No. A.26.6.2.4]	

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Committee: SIG-SSS

Committee Statement

Resolution: FR-5108-NFPA 72-2022

Statement: A new means of signal transport between the protected premises and a Public Safety Answering Point (PSAP) has been developed and is coming into use at this time. This means has the signal from the protected premises pass through a supervising station and continue without interruption to a remote gateway. From the remote gateway, the signals are retransmitted directly into the appropriate PSAP for the dispatching of emergency forces or other personnel to the protected premises. There are a number of United States patents that have been issued for this technology.

This new section addresses the operation of these gateways and the means by which they are powered, provided for redundancy and pathway integrity.

Section 26.7.1 describes these systems in general as well as bring the requirements found in Chapters 11 and 14 into this new chapter.

Section 26.7.2 describes the purpose and scope of this new chapter.

Section 26.7.3 describes the general requirements for these systems and the pathway between the protected premises through the gateway and to the PSAP. This section details the contractual relationship between the system owner, the supervising station and the gateway.

Section 26.7.4 describes the requirements for the communications link between the protected premises and the gateway. These systems by their design are meant to transmit over a cellular network or networks. A means of signal integrity is required.

Section 26.7.5 describes the requirements for the processing equipment that would be located within a gateway. This includes the recording equipment, power supplies, system integrity and fire protection.

Section 26.7.6 describes the requirements for the gateway. This includes redundancy of equipment within the gateway and pathway integrity back to the protected premises and supervising station

Public Input No. 526-NFPA 72-2022 [New Section after 26.2]

2025 NFPA 72 - Intermediary Services Provider

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Additional Proposed Changes

File Name	Description	Approved
2025_NFPA_72_-_Intermediary_Services_Provider_-_Proposal.pdf	Intermediary Service Provider Proposal	

Statement of Problem and Substantiation for Public Input

Intermediary Service Providers
Substantiation

Rapid technological advances in the recent years have enabled the availability of intermediary alarm transmission services aimed at enhancing the user experience of all stakeholders in contemporary fire alarm protection. These intermediary services are delivered by 3rd party providers that have a position in the communications cloud which places them between a protected premises and the responsible supervising station. Signals from a protected premise traverse a path through communications channel(s) to the 3rd party provider's network servers, which then forward signals through communications channel(s) to the responsible supervising station.

A market for 3rd party intermediary alarm transmission related services has evolved in which the intermediary providers typically:
1. Perform in a manner that has some similarity to a subsidiary station
2. Deliver some or all elements of the fire alarm transmission services required by NFPA 72, such as supervision of the connection between itself and the protected premises, reporting communication loss to the responsible supervising station when necessary
3. Upon receipt of specific NFPA 72 defined signals from a fire alarm, a) immediately retransmit the signal to the responsible supervising station and b) initiate delivery of services not required by this code, but of value to the system owner and other stakeholders, such as notification to a list of supplemental contacts specified by the system owner, predictive analytics that enable preventative maintenance, and the like.

Historically, intermediary service providers were considered part of the communications cloud by virtue of the receive-and-forward nature of code-defined signal handing. In that respect, they appeared to emulated the function of an internet routing point.

Recent events have demonstrated that the internet router analogy is flawed as loss of service from an intermediary service provider is not necessarily just routed around by standard internet protocols. Loss of an intermediary service provider can effectively create a denial of service situation that disrupts the responsible supervising station's ability to deliver its life-safety services, potentially to a very large number of protected premises.

The following proposal is intended to recognize the key role of intermediary service providers in contemporary alarm protection service and to manage the risks associated with their participation by establish baseline requirements that protect the interests of stakeholders in that protection.

The proposal puts focus on compliance with ANSI/UL827 to address issues related to intermediary service provider facility construction, fire protection, security, emergency lighting, as well as resilient power, communications, and overall service delivery resiliency. Industry suggests that an ANSI

compliant continuous development Standards process (such as that used by Underwriters Laboratories Inc) is best positioned to respond to rapid technology changes that underlie NFPA 72 compliant service delivery. TMA will be making revision proposals to UL Standards that similarly recognize intermediary service providers and identify the specific technology-level requirements needed to support the North American fire protection model.

Details:

- 3.3.138A – New Definition - Intermediary service provider
- A3.3.138A – Figure 3.3.138A – Illustrates Intermediary service provider's place in the communications cloud
- 26.2.10 – New section covering Intermediary service providers
- 26.2.10.4 – Facilities language synchronized with proposed revisions to facilities language in 26.3.5.1 (Central Stations) and Subsidiary Stations (26.3.5.2)

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Submittal Date: Tue May 31 11:09:52 EDT 2022
Committee: SIG-SSS

Committee Statement

Resolution: CI-5100-NFPA 72-2022

Statement: The intent of this committee input is to create a task group to evaluate the existing arrangement of Section 26.6 (Communications Methods) and harmonize all communications methods into the requirements for performance-based technologies to the extent this is possible. This would permit and regulate the use of new and emerging communication technologies while eliminating prescriptive requirements for outdated technologies, which are currently being phased out due to many factors such as regulatory, technology, and reliability changes. If during this assessment, the task group determines that an existing or legacy communication method cannot be moved into the performance-based technology requirements, a separate section will be maintained to regulate this communication technology. The task group will continue to review Public Input 526 for appropriate requirements and text for inclusion in Section 26.7.

Public Input No. 194-NFPA 72-2022 [Section No. 26.2.2]

26.2.2* Fire Alarm Signal Verification.

For applications other than those addressed under the scope of 29.10.9.7, supervising station personnel shall attempt to verify alarm signals prior to reporting them to the communications center only where all the following conditions exist:

(1) * Alarm signal verification is required by the responsible fire department for a specific protected premises.

(2) Documentation of the requirement for alarm signal verification is provided by the responsible fire department to the supervising station and the protected premises.

(3) If the requirement for verification changes, the responsible fire department notifies the supervising station and the protected premises.

(4) * The verification process does not take longer than 90 seconds from the time the alarm signal is received at the supervising station until the time that retransmission of the verified alarm signal is initiated.

(5) Verification of a true fire is received from anyone on premises or verification of an unwanted alarm signal is received only from a pre-assigned list of authorized personnel within the protected premises.

(6) * Verified alarm signals are immediately retransmitted to the communications center and include information that the signal was verified at the protected premises to be an emergency.

(7) * Alarm signals where verification is not conclusive are immediately retransmitted to the communications center.

(8) * Alarm signals that are verified as unwanted alarms ~~shall be reported~~ are reported to the responsible fire department in a manner and at a frequency specified by the responsible fire department.

Statement of Problem and Substantiation for Public Input

This section has been modified to align with the Manual of Style and was the work of an MOS task group. (The MOS requires all list items to either have a Shall or not to have a Shall and thus the single shall has been changed to an "Are".

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Committee: SIG-SSS

Committee Statement

Resolution: FR-5024-NFPA 72-2022

Statement: This section has been modified to align with the Manual of Style. The MOS requires all list items to either have a shall or not to have a shall and thus the single shall has been changed to an "are".

Public Input No. 193-NFPA 72-2022 [Section No. 26.2.4.1.3]

26.2.4.1.3*– Servicing

26.2.4.1.3.1

Servicing of a system in alarm that cannot be reset shall be in accordance with Chapter 14 ~~and~~ .

26.2.4.1.3.2

Servicing the system described in 26.2.4.1.3.1 shall occur within 4 hours of the carbon monoxide alarm signal.

Statement of Problem and Substantiation for Public Input

This section has been added to align with the Manual of Style that was the work of a MOS task group.

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Submittal Date: Fri Mar 25 09:11:35 EDT 2022
Committee: SIG-SSS

Committee Statement

Resolution: FR-5026-NFPA 72-2022
Statement: This section has been revised to align with the Manual of Style.

Public Input No. 556-NFPA 72-2022 [Section No. 26.2.4.1.4]

26.2.4.1.4

Upon receipt of a carbon monoxide alarm signal, supervising station personnel shall perform the following actions in the order listed:

(1) Where required by the emergency response agency, immediately retransmit indication of the carbon monoxide alarm signal to the communications center

(2) Contact the responsible party(s) in accordance with the notification plan

(3) Once contacted, inform the subscriber to take one of the actions in (a) or (b):

(a) Where the subscriber has a carbon monoxide emergency response plan, implement the plan

(b) Where the subscriber has no carbon monoxide emergency response plan:

i. Immediately move to fresh air, either outdoors or by an open door or window

ii. Verify that all occupants are accounted for

iii. Do not re-enter the premises or move away from an open door or window until the emergency service responders have arrived, the premises have been aired out, and the alarm returns to its normal condition

(4)

26.2.4.1.4.1 If someone answers the call

(1) The occupants shall be instructed to leave the premises and move to fresh air.

(2) The supervising station shall ask the following questions of the individual answering the telephone:

a) Are all the occupants accounted for and are they out of the premises?

b) Is anyone nauseous, ill, have a headache or dizzy?

(3) The supervising station shall instruct the occupants not to re-enter the premises until cleared by the responding response agency.

(4) The supervising station shall then immediately call the appropriate response agency and inform them of the alarm. The emergency response agency shall be informed that the occupants answered the telephone, were told to leave the premises and of any reported symptoms.

26.2.4.1.4.2 If no response from the protected premise

The supervising station shall then immediately call the appropriate response agency and report that a CO alarm was received from a particular premises and were unable to reach an occupant.

26.2.4.1.4.3 In the case of 26.2.4.1.4.2, after dispatch, the supervising station shall contact the responsible party(ies) in accordance with the notification plan.

Statement of Problem and Substantiation for Public Input

Provides additional guidance for the supervising station responsible for notification of an CO Alarm activation. Moving the occupants to a location where co is not present such as outdoors may save lives.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 557-NFPA 72-2022 [New Section after 29.10.9.7]	

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Committee: SIG-SSS

Committee Statement

Resolution: Proposed text duplicates current text. Emergency medical dispatch requires specific certifications that are not normally held by monitoring personnel.

Public Input No. 284-NFPA 72-2022 [Section No. 26.2.4.2.2]

26.2.4.2.2– Servicing.

26.2.4.2.1 Servicing of a system in trouble shall be in accordance with Chapter 14

~~and~~

.

26.2.4.2.2 Servicing the system described in 26.2.4.2.1 shall occur within 4 hours of the trouble indication.

Statement of Problem and Substantiation for Public Input

This change is as per the MOS edits reviewed by the Task Group appointed by the Chair to review the final version of the 2022 ed.

Submitter Information Verification

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Committee: SIG-SSS

Committee Statement

Resolution: FR-5064-NFPA 72-2022
Statement: This section has been revised to align with the Manual of Style.

Public Input No. 162-NFPA 72-2022 [Section No. 26.2.10]

26.2.10 Emergency Monitoring Locations.

26.2.10.1

Upon an emergency declaration made by a national, state, or local authority that results in a business disruption event that inhibits normal operation of a supervising station, fire alarm system signals shall be permitted to be received at alternate locations other than a listed central station, proprietary supervising station, or remote supervising station.

26.2.10.2

The provision of 26.2.10.1 shall be permitted to remain in effect for the duration of the emergency declaration.

26.2.10.3

Specific authorization by local authorities having jurisdiction shall not be required for emergencies declared by a higher authority.

26.2.10.4

The provision of 26.2.10.1 shall be permitted to remain in place for not more than 30 calendar days following the termination of the declared emergency.

Additional Proposed Changes

File Name	Description	Approved
TIA_72_22_2_SIG-SSS_.pdf		

Statement of Problem and Substantiation for Public Input

NOTE: This public input originates from Tentative Interim Amendment No. 22-2 (Log 1549) issued by the Standards Council on April 15, 2021 and per the NFPA Regs., needs to be reconsidered by the Technical Committee for the next edition of the Document.

SUBSTANTIATION:
The Underwriters Laboratories standard for Central Station monitoring (UL 827) is currently being modified to allow temporary monitoring “at home” or other non-listed locations due to what the standard now defines as “nationally or regionally declared emergencies” which would disrupt normal operations. UL 827 regulates operations of Central Station Service, but as most fire alarm systems are monitored at supervising stations not listed by UL as Central Station Service facilities, general guidelines for supervising station operations are necessary.

Emergency Nature:
The proposed TIA intends to offer to the public a benefit that would lessen a recognized (known) hazard or ameliorate a continuing dangerous condition or situation. The current situation has shown that modified operations have been implemented, and without
NFPA 72 guidance, these modifications currently do not meet any framework. This TIA provides the framework necessary for future emergency operations across all types of supervising station monitoring.

Submitter Information Verification

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Submittal Date: Fri Feb 25 07:26:07 EST 2022
Committee: SIG-SSS

Committee Statement

Resolution: This public input originates from Tentative Interim Amendment No. 22-2 (Log 1549) issued by the Standards Council on April 15, 2021. The Underwriters Laboratories standard for central station monitoring (UL 827) allows temporary monitoring “at home” or other non-listed locations due to what the standard now defines as “nationally or regionally declared emergencies” which disrupt normal operations. UL 827 regulates operations of central station service, but as most fire alarm systems are monitored at supervising stations not listed by UL as Central Station Service facilities, general guidelines for supervising station operations are necessary. The technical committee affirms that this TIA should be incorporated into the 2025 edition even though the action on the public input is to resolve.

Public Input No. 403-NFPA 72-2022 [New Section after 26.2.10.4]

Alternate Monitoring Location

Upon approval of AHJ fire alarm system signals shall be permitted to be received at alternative locations in accordance with UL 827 other than a listed central station, proprietary supervising station, or remote supervising station....

Statement of Problem and Substantiation for Public Input

After following the provisions of 26.2.10 during the COVID 19 pandemic it has become clear that this is a viable way of monitoring signals and this new provision would allow this type of monitoring to occur if there is no national emergency declared.

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Committee: SIG-SSS

Committee Statement

Resolution: A declaration of an emergency is an important aspect for permitting alternate location monitoring. The proposed language would allow alternate monitoring locations for any reason. No data has been submitted to document that this type of monitoring has not experienced problems. Concerns were expressed about monitoring occurring out of the country where the origin of the signal occurs and the reliability of the signal processing.

Public Input No. 476-NFPA 72-2022 [New Section after 26.2.10.4]

TITLE OF NEW CONTENT

26.2.11 Alternate Monitoring Location

Upon approval of AHJ fire alarm system signals shall be permitted to be received at alternative locations in accordance with UL 827 other than a listed central station, proprietary supervising station, or remote supervising station.

Additional Proposed Changes

File Name	Description	Approved
NFPA_72_BS_SB_26_2_10_comments.docx		

Statement of Problem and Substantiation for Public Input

After following the provisions of 26.2.10 during the COVID 19 pandemic it has become clear that this is a viable way of monitoring signals and this new provision would allow this type of monitoring to occur if there is no national emergency declared.

Submitter Information Verification

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Zip:
Submittal Date: Fri May 27 11:42:54 EDT 2022
Committee: SIG-SSS

Committee Statement

Resolution: A declaration of an emergency is an important aspect for permitting alternate location monitoring. The proposed language would allow alternate monitoring locations for any reason. No data has been submitted to document that this type of monitoring has not experienced problems. Concerns were expressed about monitoring occurring out of the country where the origin of the signal occurs and the reliability of the signal processing.

Public Input No. 522-NFPA 72-2022 [New Section after 26.2.10.4]

26.2.11 Alternate Monitoring Location

Upon approval of AHJ fire alarm system signals shall be permitted to be received at alternative locations in accordance with UL 827 other than a listed central station, proprietary supervising station, or remote supervising station.

Statement of Problem and Substantiation for Public Input

After following the provisions of 26.2.10 during the COVID 19 pandemic it has become clear that this is a viable way of monitoring signals and this new provision would allow this type of monitoring to occur if there is no national emergency declared.

Submitter Information Verification

Submitter Full Name: Megan Hayes
Organization: Nema
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 10:16:56 EDT 2022
Committee: SIG-SSS

Committee Statement

Resolution: A declaration of an emergency is an important aspect for permitting alternate location monitoring. The proposed language would allow alternate monitoring locations for any reason. No data has been submitted to document that this type of monitoring has not experienced problems. Concerns were expressed about monitoring occurring out of the country where the origin of the signal occurs and the reliability of the signal processing.

Public Input No. 285-NFPA 72-2022 [Section No. 26.3.4.3]

26.3.4.3 ~~–~~

~~The~~

Document Posting

26.3.4.3.1 The documentation shall be physically posted within 3 ft (1 m) of the control unit ~~, and copies of the~~ .

26.3.4.3.2 The documentation shall be made available to the authority(ies) having jurisdiction upon request.

Statement of Problem and Substantiation for Public Input

This is a change to the MOS edits by the Task Group assigned by the Chair to review the final edits of the 2022 Ed.

Submitter Information Verification

Submitter Full Name: Christopher Creamer
Organization: UL LLC
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 13 12:25:15 EDT 2022
Committee: SIG-SSS

Committee Statement

Resolution: FR-5065-NFPA 72-2022
Statement: This section has been revised to align with the Manual of Style.

Public Input No. 286-NFPA 72-2022 [Section No. 26.3.7.2]

26.3.7.2– Operating and Supervision

26.3.7.2.1 Operation and supervision shall be the primary functions of the operators ~~, and no~~ .

26.3.7.2.2 No other interest or activity shall take precedence over the protective service.

Statement of Problem and Substantiation for Public Input

This change is as a result of the MOS edits of the Task Group assigned to review the final 2022 Ed.

Submitter Information Verification

Submitter Full Name: Christopher Creamer
Organization: UL LLC
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 13 12:28:40 EDT 2022
Committee: SIG-SSS

Committee Statement

Resolution: FR-5066-NFPA 72-2022
Statement: This section has been revised to align with the Manual of Style.

Public Input No. 287-NFPA 72-2022 [Section No. 26.3.8.3.1]

26.3.8.3.1 Alarm Signals.

26.3.8.3.1.1 The central station shall perform the following actions:

(1) * Retransmit the alarm to the communications center in accordance with 26.2.1 unless the signal is a result of a prearranged test.

(2) Dispatch a runner or technician to the protected premises to arrive within 2 hours after receipt of an alarm signal if equipment needs to be manually reset by the prime contractor.

(3) Immediately notify the subscriber unless the signal is a result of a prearranged test.

(4) Provide notice to the subscriber or authority having jurisdiction, or both, if required.

26.3.8.3.1.2 Except where prohibited by the authority having jurisdiction,

~~the~~
t he runner or technician described in 26.3.8.3.1.1(2) shall be permitted to be recalled prior to arrival at

~~the~~
the premises if a qualified representative of the subscriber at the premises can provide the necessary resetting of the equipment and is able to place the system back in operating condition.

- ~~Immediately notify the subscriber unless the signal is a result of a prearranged test.~~
- ~~Provide notice to the subscriber or authority having jurisdiction, or both, if required.~~

Statement of Problem and Substantiation for Public Input

This is a MOS edit provided by the MOS Task Group assigned by the Chair to review the final 2022 Ed.

Submitter Information Verification

Submitter Full Name: Christopher Creamer
Organization: UL LLC
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 13 12:34:03 EDT 2022
Committee: SIG-SSS

Committee Statement

Resolution: FR-5050-NFPA 72-2022
Statement: This section has been revised to align with the Manual of Style.

Public Input No. 288-NFPA 72-2022 [Section No. 26.3.8.3.5.3]

26.3.8.3.5.3*

~~Any~~
26.3.8.3.5.3* Any test signal not received by the central station shall

~~be investigated immediately, and action shall be~~
comply with both of the following:

(1) Be investigated immediately

(2) Action taken to reestablish system integrity

Statement of Problem and Substantiation for Public Input

This is a MOS edit submitted by the MOS Task Group assigned by the Chair to review the final edits to the 2022 Ed.

Submitter Information Verification

Submitter Full Name: Christopher Creamer
Organization: UL LLC
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 13 12:37:51 EDT 2022
Committee: SIG-SSS

Committee Statement

Resolution: NFPA Editors indicate this section does not have a Manual of Style violation. The section contains two parts of a multi-part requirement, not two separate requirements. MOS doesn't prohibit two "shalls" in one section.

Public Input No. 289-NFPA 72-2022 [Section No. 26.4.3.4.3]

26.4.3.4.3–

~~In~~

Emergency Lighting System.

26.4.3.4.3.1 In the event of a loss of the primary lighting for the supervising station, the emergency lighting system shall provide illumination for a period of not less than 26 hours to permit the operators to carry on operations - ~~and~~ .

26.4.3.4.3.2 The emergency lighting system shall be tested in accordance with the requirements of Chapter 14.

Statement of Problem and Substantiation for Public Input

This is a MOS edit submitted by the MOS Task Group assigned by the Chair to review the final version of 2022 Ed.

Submitter Information Verification

Submitter Full Name: Christopher Creamer
Organization: UL LLC
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 13 12:40:52 EDT 2022
Committee: SIG-SSS

Committee Statement

Resolution: FR-5059-NFPA 72-2022
Statement: This section has been revised to align with the Manual of Style.

Public Input No. 290-NFPA 72-2022 [Section No. 26.4.3.6]

26.4.3.6* Retransmission Means.

26.4.3.6.1 The means of retransmission shall be accepted by the authority having jurisdiction ~~and~~ .

26.4.3.6.2 The means of retransmission shall be in accordance with 26.3.6.6 , 26.5.4.4 , or Chapter 27.

Statement of Problem and Substantiation for Public Input

This is a MOS edit submitted by the Task Group appointed by the Chair to review the final edit of the 2022 Ed.

Submitter Information Verification

Submitter Full Name: Christopher Creamer
Organization: UL LLC
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 13 12:43:24 EDT 2022
Committee: SIG-SSS

Committee Statement

Resolution: FR-5054-NFPA 72-2022
Statement: This section has been revised to align with the Manual of Style.

Public Input No. 291-NFPA 72-2022 [Section No. 26.4.4.2.1.1]

26.4.4.2.1.1

~~One~~
26.4.4.2.1.1 One of these means shall

~~be~~
comply with both of the following:

(1) Be an audible signal

~~, which shall persist~~

(2) Persist until manually acknowledged .

Statement of Problem and Substantiation for Public Input

This is a MOS edit per the Task Group assigned by the Chair to review the final version of the 2022 Ed.

Submitter Information Verification

Submitter Full Name: Christopher Creamer
Organization: UL LLC
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 13 12:45:59 EDT 2022
Committee: SIG-SSS

Committee Statement

Resolution: FR-5056-NFPA 72-2022
Statement: This section has been revised for clarity and to align with the Manual of Style.

Public Input No. 292-NFPA 72-2022 [Section No. 26.4.4.2.2.3]

26.4.4.2.2.3

~~Failure~~

26.4.4.2.2.3 Two recording instruments shall be used.

(1) One recording instrument shall be used for recording all incoming signals

~~, while the other~~

.

(2) The second recording instrument shall be used for required alarm, supervisory, and trouble signals only.

~~**(A)** –~~

26.4.4.2.2.4 Failure to acknowledge a signal shall not prevent subsequent signals from recording.

~~**(B)** –~~

~~Restoration~~

26.4.4.2.2.5 Restoration of the signal to its prior condition shall be recorded.

Statement of Problem and Substantiation for Public Input

This is a MOS edit as per the Task Group assigned by the Chair to review the final 2022 Ed.

Submitter Information Verification

Submitter Full Name: Christopher Creamer
Organization: UL LLC
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 13 12:47:46 EDT 2022
Committee: SIG-SSS

Committee Statement

Resolution: The current language is clear. The proposed text makes the requirement difficult to understand.

Public Input No. 293-NFPA 72-2022 [Section No. 26.4.5.6]

26.4.5.6

~~The~~
26.4.5.6 The primary duties of the operator(s) shall be

~~to monitor signals, operate the system, and take~~
as follows:

(1) Monitor signals

(2) Operate the system

(3) Take such action as

~~shall be~~
required by the authority having jurisdiction .

Statement of Problem and Substantiation for Public Input

This is a MOS edit submitted by the MOS task group appointed by the Chair to review the 2022 Ed.

Submitter Information Verification

Submitter Full Name: Christopher Creamer
Organization: UL LLC
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 13 12:49:36 EDT 2022
Committee: SIG-SSS

Committee Statement

Resolution: FR-5060-NFPA 72-2022
Statement: This section has been revised to align with the Manual of Style.

Public Input No. 263-NFPA 72-2022 [Section No. 26.5.3.1.1]

26.5.3.1.1

Alarm, supervisory, and trouble signals shall be permitted to be received at a communications center that complies with the requirements of ~~NFPA 1221~~ NFPA 1225 .

Statement of Problem and Substantiation for Public Input

As part of the Emergency Response and Responder Safety Document Consolidation Plan (consolidation plan) as approved by the NFPA Standards Council, NFPA 1221 has been combined into a new consolidated Standard, NFPA 1225.

Submitter Information Verification

Submitter Full Name: Rodger Reiswig
Organization: Johnson Controls
Street Address:
City:
State:
Zip:
Submittal Date: Fri Apr 29 08:58:58 EDT 2022
Committee: SIG-SSS

Committee Statement

Resolution: FR-5061-NFPA 72-2022
Statement: As part of the Emergency Response and Responder Safety Document Consolidation Plan as approved by the NFPA Standards Council, NFPA 1221 has been combined into a new consolidated Standard, NFPA 1225, Standard for Emergency Services Communications.

Public Input No. 159-NFPA 72-2022 [Section No. 26.5.3.1.3]

26.5.3.1.3

~~Where permitted by the authority having jurisdiction, alarm,~~ Alarm, supervisory, and trouble signals shall be permitted to be received at a remote location other than a listed central supervising station during a declared pandemic or national emergency .

26.5.3.1.4

The provisions allowed by 26.5.3.1.3 shall remain in effect for the duration of the declared pandemic or national emergency and for fourteen days after the conditions related to the declared pandemic have been eased or the national emergency vacated.

Additional Proposed Changes

File Name	Description	Approved
72_Held_PC_255_SIG-SSS_.pdf		

Statement of Problem and Substantiation for Public Input

NOTE: This Public Input appeared as “Rejected but Held” in Public Comment No. 255 of the A2021 Second Draft Report for NFPA 72 and per the Regs. at 4.4.8.3.1.

SUBSTANTIATION:
With the new realities of COVID-19, listed central supervising stations are now having a percentage of their
monitoring activities taking place outside of the station. This is in part due to social distance requirements and/or
essential travel restrictions that have been enacted by state and local governments. These allowances would
remain in place during the declared pandemic and/or national emergency and for a period not to exceed fourteen
days after state or local restrictions are vacated. Renumber as required. The original 26.5.3.1.3 would remain. The
proposed revised paragraph is for those times in which normal operations are relaxed due to a global pandemic or
other far reaching event that disrupts all normal business operations. While these may appear to be new material,
this Public Comment is being made to a First Input to the original paragraph, thus opening said paragraph to
additional revisions. At the time of the First Draft Meeting, no one would have even contemplated a Global
Pandemic such as COVID-19 and the disruptions to normal operations that have occurred since. One of the new
realities is having a percentage of operators work from their domicile. This added text would permit this to occur
during a pandemic or national emergency without needing to obtain pre-approval from AHJ's. This would be a large
undertaking to contact each individual jurisdiction and then to provide them the physical location of each monitoring
location.

Submitter Information Verification

Submitter Full Name: TC on SIG_SSS
Organization: NFPA
Street Address:
City:
State:
Zip:
Submittal Date: Thu Feb 24 17:35:05 EST 2022
Committee: SIG-SSS

Committee Statement

Resolution: Section 26.2.10 already covers this issue.

Public Input No. 558-NFPA 72-2022 [Section No. 26.5.3.1.3]

26.5.3.1.3

~~Where permitted by the authority having jurisdiction, alarm,~~ Alarm, supervisory, and trouble signals shall be permitted to be received at a listed central supervising station.

26.5.3.1.3

Alarm, supervisory, and trouble signals shall be permitted to be received at a listed central supervising station meeting the following criteria .

26.5.3.1.3.1 UL Listed Supervising Station requirement

1) Current UL Listing for Central and or Remote Station Service

2) Local and state alarm licensing requirements in the jurisdiction where the protected premises system is located

3) Local and state alarm regulations in the jurisdictions where the UL Listed Supervising Station is located

4) Renewable State Fire Marshall application in all states where Remote Supervising station(s) systems are located

a) Renewable application fee handled by 3rd party Licensing organization

5) All associated licensing fees are the responsibility of the applying organization

6) Third party organization shall be responsible for developing the application and fee renew schedule

7) Audit Process

a) Independent evaluation of the supervising station ability to meet the following performance criteria

i) Signal handling times

ii) Dispatch prioritization

iii) Alarm processing times

iv) Trouble notification

(1) Active Trouble Reporting

v) Supervisory notification

Statement of Problem and Substantiation for Public Input

Currently,there is no published guidelines to approve remote station monitoring for facilities under 26.5.3. This input attempts to define the criteria so any UL Listed Supervising station can meet these requirements. An independent 3rd party organization should be responsible for handling applications .

Without specific guidelines in place, there are numerous questions as to how any organization could meet AHJ permission. The relationship between the protected premise and the supervising station is the remote station alarm system! Section 26.6.1 states "Where any system regulated by this code sends signals to a supervising station, the entire system shall become a supervising station alarm system. Is the AHJ permitting a single remote supervising system or is the permission for all remote supervising station systems supervised by facilities?

Many states have defined alarm licensing rules and regulations to ensure UL Listed and or Remote stations comply with the requirements prior to issuing an alarm license. Some states require both the organization and its employees to become licensed to supervise the installation, monitoring and

supervision of fire and security systems. Section 26.5.3 .1.3 only requires AHJ permission does this bypass state alarm rules and regulations?

Submitter Information Verification

Submitter Full Name: Richard Simpson
Organization: Vector Security Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Wed Jun 01 06:44:43 EDT 2022
Committee: SIG-SSS

Committee Statement

Resolution: Section 26.5 (and previous like sections in prior editions of the code) has long established requirements for governmental monitoring in Sections 26.5.3.1.1, and 26.5.3.1.2, except where an alternate location is permitted by the AHJ (26.5.3.1.3). Listed central stations provide a valuable service and the language of the 2022 edition, as well as previous editions, of NFPA 72 allow their use in the remote supervising station monitoring process where approved by the AHJ. Listed central stations are also an element of central station service where no other type of supervising station is permitted. National model codes specifically permit monitoring by an approved supervising station in accordance with NFPA 72. Depending on several factors, some AHJ's may be able to specifically name their approved supervising station of choice and others can’t. No technical documentation has ever been submitted to substantiate this type of proposed revision.The language provided further in the proposal references practices, offices and systems that are not universal to the national, state or local practices across the country or abroad. Jurisdictional licensure is outside the scope of NFPA 72.The references to a UL listed station limits use for the proposed activities to a single NRTL. Additionally, the list of items to be evaluated by an unidentified and unqualified independent assessment agency seems to assume the authority of an approved NRTL without the actual reliability and integrity of an approved NRTL.

Public Input No. 294-NFPA 72-2022 [Section No. 26.5.4.1.2]

26.5.4.1.2–

~~Means~~

Silencing Means

26.5.4.1.2 Means for silencing alarm, supervisory, and trouble signals shall be provided .

26.5.4.1.3 Means for silencing alarm, supervisory, and trouble signals shall be arranged so that subsequent signals ~~shall~~ re-sound.

Statement of Problem and Substantiation for Public Input

This is a MOS edit submitted by the MOS task group appointed by the Chair to review the 2022 Ed.

Submitter Information Verification

Submitter Full Name: Christopher Creamer
Organization: UL LLC
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 13 12:51:29 EDT 2022
Committee: SIG-SSS

Committee Statement

Resolution: The current text is clear and easier to use.

Public Input No. 295-NFPA 72-2022 [Section No. 26.5.7]

26.5.7 Operations.

26.5.7.1 All operator controls at the remote supervising station shall be operated at the beginning of each shift or change in personnel ~~, and the~~ .

26.5.7.2 The status of all alarm, supervisory, and trouble signals shall be noted and recorded at the beginning of each shift or change in personnel .

Statement of Problem and Substantiation for Public Input

This is a MOS edit submitted by the MOS task group appointed by the Chair to review the final 2022 Ed.

Submitter Information Verification

Submitter Full Name: Christopher Creamer
Organization: UL LLC
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 13 12:53:49 EDT 2022
Committee: SIG-SSS

Committee Statement

Resolution: FR-5125-NFPA 72-2022
Statement: This section has been revised to align with the Manual of Style.

Public Input No. 296-NFPA 72-2022 [Section No. 26.5.8.1]

26.5.8.1–

~~A~~

Permanent Record

26.5.8.1.1 A permanent record of the time, date, and location of all signals and restorations received and the action taken shall be maintained for at least 1 year - ~~and shall~~ .

26.5.8.1.2 The permanent record described in 26.5.8.1.1 shall be able to be provided to the authority having jurisdiction.

Statement of Problem and Substantiation for Public Input

This is a MOS edit submitted by the MOS task group assigned by the Chair to review the final edit of the 2022 Ed.

Submitter Information Verification

Submitter Full Name: Christopher Creamer
Organization: UL LLC
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 13 12:56:23 EDT 2022
Committee: SIG-SSS

Committee Statement

Resolution: FR-5126-NFPA 72-2022
Statement: This section has been revised to align with the Manual of Style.

Public Input No. 297-NFPA 72-2022 [Section No. 26.6.3.4]

26.6.3.4 Multiple Communications Paths.- ~~If multiple transmission paths are used, the following requirements shall be met:~~

(1) Each path shall be supervised within not more than 6 hours.

(2) The failure of any path of a multipath system shall be annunciated at the supervising station within not more than 6 hours.

(3) Multiple communications paths shall

~~be arranged so that~~

(4) not permi t a single point of failure

~~shall not~~

(5) to cause more than a single path to fail.

The failure to complete a signal transmission shall be annunciated at the protected premises in accordance with ~~Section 10~~ Section 10 .15 .

Statement of Problem and Substantiation for Public Input

This is a MOS edit provided by the MOS Task Group appointed by the Chair to review the 2022 Ed.

Submitter Information Verification

Submitter Full Name: Christopher Creamer
Organization: UL LLC
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 13 13:00:38 EDT 2022
Committee: SIG-SSS

Committee Statement

Resolution: The current text is clear and easier to use.

Public Input No. 298-NFPA 72-2022 [Section No. 26.6.4.2.3.1]

26.6.4.2.3.1

~~A DACT shall be configured so that, when~~

When it is required to transmit a signal to the supervising station,

~~it shall seize~~

a DACT shall operate as follows:

(1) Seize the telephone line (

~~i.e.,~~

going off-hook) at the protected premises

~~and disconnect~~

(2) Disconnect an outgoing or incoming telephone call and prevent use of the telephone line for outgoing telephone calls until signal transmission has been completed

~~. A DACT shall not~~

(3) Not be connected to a party line telephone facility .

Statement of Problem and Substantiation for Public Input

This is a MOS edit submitted by the MOS task group appointed by the Chair to review the final version of the 2022 Ed.

Submitter Information Verification

Submitter Full Name: Christopher Creamer
Organization: UL LLC
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 13 13:03:50 EDT 2022
Committee: SIG-SSS

Committee Statement

Resolution: The current text is clear and easier to use.

Public Input No. 302-NFPA 72-2022 [Section No. 26.6.4.2.3.2]

26.6.4.2.3.2– _ A _ DACT shall have the following means

~~to~~

:

(1) To satisfactorily obtain a dial tone

,

(1)

(2) To dial the number(s) of the DACR

,

(1)

(2) To obtain verification that the DACR is able to receive signals

,

(1)

(2) To transmit the signal

~~, and~~

(1)

(2) To receive acknowledgment that the DACR has accepted that signal

~~. In no event shall~~

(1)

(2) To not exceed 90 seconds per attempt for the time from going off-hook to on-hook

~~exceed 90 seconds per attempt.~~

(1)

Statement of Problem and Substantiation for Public Input

This is a MOS Edit submitted by the MOS task group assigned by the Chair to review the 2022 Ed.

Submitter Information Verification

Submitter Full Name: Christopher Creamer
Organization: UL LLC
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 13 13:23:19 EDT 2022

Committee: SIG-SSS

Committee Statement

Resolution: FR-5132-NFPA 72-2022

Statement: This section has been revised to align with the Manual of Style.

Public Input No. 301-NFPA 72-2022 [Section No. 26.6.4.2.3.3]

26.6.4.2.3.3*– A DACT shall have means to reset and retry additional attempts if it fails to complete a connection.

(A) Reset and retry if the first attempt to complete a signal transmission sequence is unsuccessful

(B) A failure to complete connection shall not prevent subsequent attempts to transmit an alarm where such alarm is generated from any other initiating device circuit or signaling line circuit, or both.

(C) Additional attempts shall be made until the signal transmission sequence has been completed, up to a minimum of 5 and a maximum of 10 attempts.

Statement of Problem and Substantiation for Public Input

This is a MOS Edit submitted by the MOS Task Group appointed by the Chair to review the 2022 Ed.

Submitter Information Verification

Submitter Full Name: Christopher Creamer
Organization: UL LLC
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 13 13:18:50 EDT 2022
Committee: SIG-SSS

Committee Statement

Resolution: The current text is clear and easier to use.

Public Input No. 303-NFPA 72-2022 [Section No. 26.6.4.2.5]

26.6.4.2.5 DACT Transmission Means.

The following requirements shall apply to all DACTs~~:~~

(1) A DACT shall be connected to two separate means of transmission at the protected premises so that a single point of failure on one means of transmission

~~shall~~

(2) _ does _ not affect the second means of transmission.

(3) The DACT shall be capable of selecting the operable means of transmission in the event of failure of the other means.

(4) The primary means of transmission shall be a telephone line (number) connected to a managed facilities-based voice network.

(5) * The first transmission attempt shall utilize the primary means of transmission.

(6) Each DACT shall be programmed to call a second receiver when the signal transmission sequence to the first called line (number) is unsuccessful.

(7) Each transmission means shall automatically initiate and complete a test signal transmission sequence to its associated receiver at least once every 6 hours.

(8) A successful signal transmission sequence of any other type, within the same 6-hour period, shall fulfill the requirement to verify the integrity of the reporting system, provided that signal processing is automated so that 6-hour delinquencies are individually acknowledged by supervising station personnel.

(9) * If a DACT is programmed to call a telephone line (number) that is call forwarded to the line (number) of the DACR, a means shall be implemented to verify the integrity of the

~~call~~

(10) call forwarding feature every 4 hours.

Statement of Problem and Substantiation for Public Input

This is a MOS edit submitted by the MOS task group appointed by the Chair to review the final version of the 2022 Ed.

Submitter Information Verification

Submitter Full Name: Christopher Creamer
Organization: UL LLC
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 13 13:26:18 EDT 2022
Committee: SIG-SSS

Committee Statement

Resolution: FR-5137-NFPA 72-2022

Statement: This section has been revised to align with the Manual of Style.

Public Input No. 304-NFPA 72-2022 [Section No. 26.6.4.3.1.4]

26.6.4.3.1.4 ~~The number of incoming telephone lines to a DACR shall be limited to eight lines~~

~~, unless~~

:

26.6.4.3.1.5 The number of incoming telephone lines described in 26.6.4.3.1.4 shall be permitted to be unlimited provided the signal-receiving, processing, display, and recording equipment at the supervising or subsidiary station is duplicated and a switchover is able to be accomplished in less than 30 seconds with no loss of signal during this period

~~, in which case the number of incoming lines to the unit shall be permitted to be unlimited~~

:

Statement of Problem and Substantiation for Public Input

This is a MOS edit submitted by the MOS task group assigned by the Chair to review the 2022 Ed.

Submitter Information Verification

Submitter Full Name: Christopher Creamer
Organization: UL LLC
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 13 13:30:22 EDT 2022
Committee: SIG-SSS

Committee Statement

Resolution: FR-5139-NFPA 72-2022
Statement: This section has been revised to align with the Manual of Style.

Public Input No. 305-NFPA 72-2022 [Section No. 26.6.4.3.2.2]

26.6.4.3.2.

~~2~~

~~The~~

2 The lines (numbers) shall have the following characteristics:

(1) If the lines (numbers) are in a single hunt group, they shall be individually accessible

~~; otherwise~~

(1) .

(2) Should the lines (numbers) described in 26.6.4.3.2.2 not be individually addressable , separate hunt groups shall be required.

(3) The lines (numbers) shall be used for no other purpose than receiving signals from a DACT.

(4) The lines (numbers) shall be unlisted.

Statement of Problem and Substantiation for Public Input

This is a MOS edit submitted by the MOS Task Group assigned by the Chair to review the final version of the 2022 Ed.

Submitter Information Verification

Submitter Full Name: Christopher Creamer
Organization: UL LLC
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 13 13:33:28 EDT 2022
Committee: SIG-SSS

Committee Statement

Resolution: FR-5141-NFPA 72-2022
Statement: This section has been revised to align with the Manual of Style.

Public Input No. 306-NFPA 72-2022 [Section No. 26.6.5.1.1]

26.6.5.1.1 Maximum Operating Time. ~~The maximum end-to-end operating time parameters allowed for a two-way RF multiplex system shall be as follows:~~

~~(1) For time lapse from initiation, both of the following shall apply:~~

~~(a) The maximum allowable time lapse from the initiation of a single alarm signal until it is recorded at the supervising station shall not exceed 90 seconds.~~

~~(b) When any number of subsequent alarm signals occur at any rate, they shall be recorded at a rate no slower than one every additional 10 seconds.~~

~~(2) For time lapse from an adverse condition, both of the following shall apply:~~

~~(a) The maximum allowable time lapse from the occurrence of an adverse condition in any transmission channel until recording of the adverse condition is started shall not exceed 200 seconds for Type 4 and Type 5 systems.~~

~~(b) The requirements of 26.6.5.1.4 shall~~

~~apply~~

a pply .

(3) In addition to the maximum operating time allowed for alarm signals, the requirements of one of the following shall be met:

(a) A system unit that has more than 500 initiating device circuits shall be able to record not less than 50 simultaneous status changes within 90 seconds.

(b) A system unit that has fewer than 500 initiating device circuits shall be able to record not less than 10 percent of the total number of simultaneous status changes within 90 seconds.

Statement of Problem and Substantiation for Public Input

This is a MOS edit submitted by the MOS Task Group assigned by the Chair the review the 2022 final edition.

Submitter Information Verification

Submitter Full Name: Christopher Creamer
Organization: UL LLC
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 13 13:36:45 EDT 2022
Committee: SIG-SSS

Committee Statement

Resolution: FR-5150-NFPA 72-2022

Statement: This section has been revised to align with the Manual of Style.

Public Input No. 307-NFPA 72-2022 [Section No. 26.6.5.1.2]

26.6.5.1.2 Supervisory and Control Functions.

26.6.5.1.2.1 Facilities shall be provided at the supervising station for the following supervisory and control functions of the supervising or subsidiary station and the repeater station radio transmitting and receiving equipment

~~, which shall be accomplished via a supervised circuit where the radio equipment is remotely located from the system unit~~

:

(1) RF transmitter in use (radiating)

(2) Failure of ac power supplying the radio equipment

(3) RF receiver malfunction

(4) Indication of automatic switchover

~~Independent~~

(5) Independent deactivation of either RF transmitter controlled from the supervising station

26.6.5.1.2.2 Where the radio equipment is remotely located from the system unit , s upervisory and control functions of the supervising or subsidiary station and the repeater station radio transmitting and receiving equipment shall be accomplished via a supervised circuit .

Statement of Problem and Substantiation for Public Input

This is a MOS edit submitted by the MOS Task Group assigned by the Chair to review the 2022 Ed

Submitter Information Verification

Submitter Full Name: Christopher Creamer
Organization: UL LLC
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 13 13:43:48 EDT 2022
Committee: SIG-SSS

Committee Statement

Resolution: FR-5151-NFPA 72-2022
Statement: This section has been revised to align with the Manual of Style.

Public Input No. 308-NFPA 72-2022 [Section No. 26.6.5.1.4.1]

26.6.5.1.4.1 ~~A Type 4 system shall have two or more control sites configured as follows:~~

(1) Each site shall have an RF receiver interconnected to the supervising or subsidiary station by a separate channel.

(2) The RF transmitter/receiver located at the protected premises shall be within transmission range of at least two RF receiving sites.

(3) The system shall contain two RF transmitters that are one of the following:

(4) Located at one site with the capability of interrogating all of the RF transmitters/receivers on the premises

(5) Dispersed with all of the

~~RF~~

(1)

(a) RF transmitters/receivers on the premises having the capability to be interrogated by two different RF transmitters

(2) Each RF transmitter shall

~~maintain~~

(1) operate as follows:

(2) M aintain a status that allows immediate use at all times.

(3) Facilities

~~shall be~~

(1)

(a) are provided in the supervising or subsidiary station to operate any off-line RF transmitter at least once every 8 hours.

~~Any failure~~

(1) The Type 4 system shall operate as follows:

(2) Failure of one of the RF receivers shall

~~in no way~~

(1)

(a) not interfere with the operation of the system from the other RF receiver.

(b) Failure of any receiver shall be annunciated at the supervising station.

- ~~A physically separate channel shall be required between each RF transmitter or RF receiver site, or both, and the system unit.~~

Statement of Problem and Substantiation for Public Input

This is a MOS edit submitted by the MOS Task Group assigned by the Chair for the final review of the 2022 Ed.

Submitter Information Verification

Submitter Full Name: Christopher Creamer
Organization: UL LLC
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 13 13:51:01 EDT 2022
Committee: SIG-SSS

Committee Statement

Resolution: FR-5147-NFPA 72-2022
Statement: This section has been revised to align with the Manual of Style.

Public Input No. 309-NFPA 72-2022 [Section No. 26.6.5.2.2]

26.6.5.2.2* Maximum Operating Time.– ~~The end-to-end operating time parameters allowed for a one-way radio alarm system shall be as follows:~~

(1) There shall be a 90 percent probability that the time between the initiation of a single alarm signal until it is recorded at the supervising

~~station~~
station will not exceed 90 seconds.

(2) There shall be a 99 percent probability that the time between the initiation of a single alarm signal until it is recorded at the supervising station will not exceed 180 seconds.

(3) There shall be a 99.999 percent probability that the time between the initiation of a single alarm signal until it is recorded at the supervising station will not exceed 7.5 minutes (

~~450 seconds), at which time the~~
450 seconds).

(4) The RAT shall cease transmitting

~~. When~~
at 7.5 minutes (450 seconds) after initiation after initiation of an alarm signal

(5) When any number of subsequent alarm signals occurs at any rate, they shall be recorded at an average rate no slower than one every additional 10 seconds.

~~In~~
(6) In addition to the maximum operating time allowed for alarm signals, the system shall be able to record not less than 12 simultaneous status changes within 90 seconds at the supervising station.

(7) The system shall be supervised to ensure that at least two independent RARSRs or one RARSR and one independent RASSR are receiving signals for each RAT during each 24-hour period.

Statement of Problem and Substantiation for Public Input

This is a MOS edit submitted by the MOS Task Group assigned by the Chair to review the final version of the 2022 Ed.

Submitter Information Verification

Submitter Full Name: Christopher Creamer
Organization: UL LLC
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 13 13:59:14 EDT 2022
Committee: SIG-SSS

Committee Statement

Resolution: FR-5169-NFPA 72-2022

Statement: This section has been revised to align with the Manual of Style.

Public Input No. 310-NFPA 72-2022 [Section No. 26.6.5.2.4.1]

26.6.5.2.4.1 ~~The one-way RF transmission channel shall originate with a RAT at the protected premises~~

~~and shall terminate~~

and terminate at the RF receiving system of an RARSR or RASSR capable of receiving transmissions from such transmitting devices.

Statement of Problem and Substantiation for Public Input

This is a MOS submission based on the MOS Task Group assigned by the Chair to review the 2022 Ed.

Submitter Information Verification

Submitter Full Name: Christopher Creamer
Organization: UL LLC
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 13 14:44:40 EDT 2022
Committee: SIG-SSS

Committee Statement

Resolution: FR-5154-NFPA 72-2022
Statement: This section has been revised to align with the Manual of Style.

Public Input No. 311-NFPA 72-2022 [Section No. 26.6.5.2.4.5]

26.6.5.2.4.5 ~~The system shall provide information that indicates the quality of the received signal for each RARSR supervising each RAT in accordance with~~ ~~26.6.5.2~~

~~and shall provide information at the supervising station when such signal quality falls below the minimum signal quality levels set forth in 26~~

.

~~6.5.2.~~

Statement of Problem and Substantiation for Public Input

This is a MOS submission by the MOS Task Group assigned by the Chair to address the final edits of the 2022 ed.

Submitter Information Verification

Submitter Full Name: Christopher Creamer
Organization: UL LLC
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 13 14:53:16 EDT 2022
Committee: SIG-SSS

Committee Statement

Resolution: FR-5156-NFPA 72-2022
Statement: This section has been revised to align with the Manual of Style.

Public Input No. 312-NFPA 72-2022 [Section No. 26.6.5.2.4.6]

26.6.5.2.4.6 The system shall provide information at the supervising station when such signal quality falls below the minimum signal quality levels set forth in 26.6.5.2.

26.6.5.2.4.7 Each RAT shall be installed in such a manner so as to provide a signal quality over at least two independent one-way RF transmission channels, of the minimum quality level specified, that satisfies the performance requirements in 26.6.2.4 and 26.6.6 .

Statement of Problem and Substantiation for Public Input

This is a MOS edit submitted by the MOS Task Group appointed by the Chair to address the 2022 Ed final version.

Submitter Information Verification

Submitter Full Name: Christopher Creamer
Organization: UL LLC
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 13 14:57:30 EDT 2022
Committee: SIG-SSS

Committee Statement

Resolution: Section numbers are automatically revised based on first revisions.

Public Input No. 313-NFPA 72-2022 [Section No. 26.6.5.2.8]

26.6.5.2

~~.8 Wireless Mesh Networks (WMN).~~

~~* -- One-Way Private Radio Alarm Systems.~~

~~26.6.5.2.1 A one-way private radio system shall be in accordance with 26.6.5.2.2 or 26.6.5.2.3 - 26.6.5.2.10~~

~~26.6.5.2.2 - A wireless mesh network (WMN) utilizing listed components~~

~~satisfies the requirements of~~

Renumber existing 26.6.5.2 . 1 - 26.6.5.2.7 as 26.6.5.2.3 - 26.6.5.2.9

Statement of Problem and Substantiation for Public Input

This is a MOS submission by the MOS Task Group assigned by the Chair to review the final version of the 2022 ed.

Submitter Information Verification

Submitter Full Name: Christopher Creamer
Organization: UL LLC
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 13 15:06:23 EDT 2022
Committee: SIG-SSS

Committee Statement

Resolution: FR-5165-NFPA 72-2022
Statement: This information in this section has been incorporated into a new 26.6.5.2.2 under a separate revision to align with the Manual of Style.

Public Input No. 314-NFPA 72-2022 [Section No. 26.6.6.5]

26.6.6.5* ~~Any method of recording and display or indication of change of status signals shall be permitted, provided that the status signals are not test signals required by 26.6.4.2.5 at a DACR and all of the following conditions are met:~~

(1) ~~Each change of status signal requiring action to be taken by the operator shall result in an audible signal and not less than two independent methods of identifying the type, condition, and location of the status change.~~

(2) ~~Each change of status signal shall be automatically recorded~~

~~. The record shall provide the~~

(1) in a manner that includes the time and date the signal was received, and the type of signal, condition, and location, as required by 26.6.6.1

~~, in addition to the time and date the signal was received~~

(1) .

- ~~Failure of an operator to acknowledge or act upon a change of status signal shall not prevent subsequent alarm signals from being received, indicated or displayed, and recorded.~~
- ~~Change of status signals requiring action to be taken by the operator shall be displayed or indicated in a manner that clearly differentiates them from those that have been acted upon and acknowledged.~~
- ~~Each incoming signal to a DACR shall cause an audible signal that persists until manually acknowledged.~~

Statement of Problem and Substantiation for Public Input

This is a MOS submission by the MOS Task Group assigned by the Chair to review the final edit of the 2022 Ed.

Submitter Information Verification

Submitter Full Name: Christopher Creamer
Organization: UL LLC
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 13 15:09:42 EDT 2022
Committee: SIG-SSS

Committee Statement

Resolution: FR-5170-NFPA 72-2022

Statement: This section has been revised to align with the Manual of Style.

Public Input No. 267-NFPA 72-2022 [Section No. 27.5 [Excluding any Sub-Sections]]

The alarm processing equipment required to receive and control the public emergency alarm reporting system shall be installed in the communications center or remote communications center used by emergency response agencies as defined in ~~NFPA 1221~~ NFPA 1225 .

Statement of Problem and Substantiation for Public Input

As part of the Emergency Response and Responder Safety Document Consolidation Plan (consolidation plan) as approved by the NFPA Standards Council, the NFPA 1221 Standard has been combined into a new consolidated Standard, NFPA 1225.

Submitter Information Verification

Submitter Full Name: Rodger Reiswig
Organization: Johnson Controls
Street Address:
City:
State:
Zip:
Submittal Date: Fri Apr 29 09:21:19 EDT 2022
Committee: SIG-PRS

Committee Statement

Resolution: FR-5117-NFPA 72-2022
Statement: As part of the Emergency Response and Responder Safety Document Consolidation Plan, as approved by the NFPA Standards Council, the NFPA 1221 Standard has been combined into a new consolidated Standard, NFPA 1225, Standard for Emergency Services Communications.

Public Input No. 266-NFPA 72-2022 [Section No. 27.5.2.5.8]

27.5.2.5.8

Where the electrical service/capacity of the equipment required under ~~Section 4~~ Section 12 .~~7~~ 8 of ~~NFPA 1221 satisfies~~ NFPA 1225 satisfies the needs of equipment in this chapter, such equipment shall not be required to be duplicated.

Statement of Problem and Substantiation for Public Input

As part of the Emergency Response and Responder Safety Document Consolidation Plan (consolidation plan) as approved by the NFPA Standards Council, the NFPA 1221 Standard has been combined into a new consolidated Standard, NFPA 1225.
The section referenced within NFPA 1225 has been updated as well as the proper document.

Submitter Information Verification

Submitter Full Name: Rodger Reiswig
Organization: Johnson Controls
Street Address:
City:
State:
Zip:
Submittal Date: Fri Apr 29 09:17:33 EDT 2022
Committee: SIG-PRS

Committee Statement

Resolution: FR-5118-NFPA 72-2022
Statement: As part of the Emergency Response and Responder Safety Document Consolidation Plan, as approved by the NFPA Standards Council, the NFPA 1221 Standard has been combined into a new consolidated Standard, NFPA 1225, Standard for Emergency Services Communications. The section referenced within NFPA 1225 has been updated as well as the proper document.

Public Input No. 264-NFPA 72-2022 [Section No. 27.5.2.7]

27.5.2.7 Engine-Driven Generators.

The installation of engine-driven generator sets shall conform to the provisions of NFPA 37, NFPA 110, and ~~NFPA 1221~~ NFPA 1225 .

Statement of Problem and Substantiation for Public Input

As part of the Emergency Response and Responder Safety Document Consolidation Plan (consolidation plan) as approved by the NFPA Standards Council, NFPA 1221 has been combined into a new consolidated Standard, NFPA 1225.

Submitter Information Verification

Submitter Full Name: Rodger Reiswig
Organization: Johnson Controls
Street Address:
City:
State:
Zip:
Submittal Date: Fri Apr 29 09:12:12 EDT 2022
Committee: SIG-PRS

Committee Statement

Resolution: FR-5119-NFPA 72-2022
Statement: As part of the Emergency Response and Responder Safety Document Consolidation Plan, as approved by the NFPA Standards Council, NFPA 1221 has been combined into a new consolidated Standard, NFPA 1225, Standard for Emergency Services Communications.

Public Input No. 450-NFPA 72-2022 [Section No. 29.1.1]

29.1.1*

The performance, selection, installation, operation, and use of single- and multiple-station alarms ~~and household alarm~~ , system-based detectors and household signaling systems shall comply with the requirements of this chapter.

Statement of Problem and Substantiation for Public Input

The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 26 16:26:56 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: Household alarm systems is a defined term used throughout the standard.

Public Input No. 452-NFPA 72-2022 [Section No. 29.1.2]

29.1.2*

~~Alarms~~ Warning equipment shall be installed in all occupancies where required by other governing laws, codes, or standards.

Statement of Problem and Substantiation for Public Input

This update makes 29.1.2 consistent with 29.2.1 and 29.2.2. The word "alarms" refers to only single- and multi-station devices throughout Chapter 29. The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 26 16:45:44 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5011-NFPA 72-2022
Statement: The first revision replaces the term "alarms" with "equipment" to encompass all devices and warning equipment covered by Chapter 29.

Public Input No. 422-NFPA 72-2022 [Section No. 29.2.2]

29.2.2

Carbon monoxide warning equipment for ~~residential occupancies~~ all occupancy types shall provide a reliable means to notify the occupants of the presence of carbon monoxide levels that constitute a potential life safety risk and the need for action as a consequence of those levels.

Statement of Problem and Substantiation for Public Input

This is the work of a Task Group that reviewed Chapter 29 for needed changes as a result of the expansion of allowed use of CO alarms to non-residential occupancies in certain states and in the International Fire Code.

Submitter Information Verification

Submitter Full Name: Wendy Gifford
Organization: Consultant
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 26 11:31:09 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5225-NFPA 72-2022

Statement: The first revision is consistent with a change to the 2024 edition of the International Fire Code/International Building Code that will allow carbon monoxide alarms to be installed inside rooms or spaces within commercial buildings that are remote from dwelling units and sleeping units.

Public Input No. 355-NFPA 72-2022 [Section No. 29.3.3]

29.3.3*

The installation of smoke, heat, fire, or carbon monoxide ~~alarms or systems, or combinations of these,~~ detection devices shall comply with the requirements of this chapter and shall satisfy the minimum requirements for number and location of ~~alarms or detectors~~ detection devices by one of the following arrangements:

(1) The required minimum number and location of detection devices shall be satisfied (independently) through the installation of single- or multiple-station alarms. The installation of additional single- or multiple-station alarms shall be permitted. The installation of additional system-based detectors, including partial or complete duplication of the single- or multiple-station alarms satisfying the required minimum, shall be permitted.

(2) The required minimum number and location of detection devices shall be satisfied (independently) through the installation of system-based detectors. The installation of additional system-based detectors shall be permitted. The installation of additional single- or multiple-station alarms, including partial or complete duplication of the system-based detectors satisfying the required minimum, shall be permitted.

Statement of Problem and Substantiation for Public Input

We keep referring to the same thing by different names which creates confusion, especial to individuals just learning the fire code. This should be easy to understand, not a guessing game of what is being referred to. In 23.3.3(1) we refer to "smoke, heat, fire, or carbon monoxide alarms or systems" as "detection devices". The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 24 16:45:06 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: The text recommended in the public input does not provide clarity.

Public Input No. 4-NFPA 72-2021 [Section No. 29.3.3]

29.3.3*

The installation of smoke, heat, fire, or carbon monoxide alarms or systems, or combinations of these, shall comply with the requirements of this chapter.

29.3.3.1 The requirements of 29.7.1 and ~~shall satisfy the minimum requirements for number and location of alarms or detectors by one of the following arrangements:~~

- ~~The required minimum number and location of detection devices shall be satisfied (independently) through the installation of alarms. The installation of additional alarms shall be permitted. The installation of additional system-based detectors, including partial or complete duplication of the alarms satisfying the required minimum, shall be permitted.~~

~~The required minimum number and location of detection devices shall be satisfied (independently) through the installation of system detectors. The installation of additional detectors shall be permitted. The installation of additional alarms, including partial or complete duplication of the detectors satisfying the required minimum, shall be permitted~~ 29.8.1 shall be met in its entirety with either the installations of smoke alarms or system-based detectors and carbon monoxide alarms or carbon monoxide detectors.

29.3.3.2 The installation of additional smoke, heat, fire, or carbon monoxide alarms or systems-based detectors shall be permitted

29.3.3.3 The installation of additional smoke, heat, fire, or carbon monoxide alarms or systems-based detectors shall comply with the requirements of this chapter.

29.3.3.4 The duplication of devices meeting the requirements of this chapter shall be considered supplementary as defined in 3.3.307.

29.3.3.5 The installation of supplementary devices shall comply with this chapter .

Statement of Problem and Substantiation for Public Input

Arranges texts to comply with the Manual of Style. This is being submitted by the MOS Task Group. Consisting of Tom Miller as Task Group Chair and Jeff McBride, Paul Murphy, and George Bish as members

Submitter Information Verification

Submitter Full Name: George Bish
Organization: Amazon/Ring Protect Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Fri Nov 05 12:46:20 EDT 2021
Committee: SIG-HOU

Committee Statement

Resolution: FR-5244-NFPA 72-2022

Statement: This revision is made to comply with the NFPA Manual of Style and adds the word "smoke" in front of the word "alarms" to clarify the type of alarm being discussed. The term "smoke" encompasses both single and multiple stations. The addition of the term "detection devices" adds no clarity to the text. The term "detector" already indicates the device is connected to a system.

Public Input No. 11-NFPA 72-2021 [Section No. 29.3.4]

29.3.4

Supplementary functions, including the extension of an alarm beyond the residential occupancy, shall ~~be permitted and shall not~~ comply with both of the following:

(1) Be permitted

(2) Not interfere with the performance requirements of this chapter.

Statement of Problem and Substantiation for Public Input

Arranges texts to comply with the Manual of Style. This is being submitted by the MOS Task Group. Consisting of Tom Miller as Task Group Chair and Jeff McBride, Paul Murphy, and George Bish as members

Submitter Information Verification

Submitter Full Name: George Bish
Organization: Amazon/Ring Protect Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Mon Nov 08 09:01:08 EST 2021
Committee: SIG-HOU

Committee Statement

Resolution: FR-5029-NFPA 72-2022
Statement: The first revision clarifies the supplementary function requirement and provides MOS compliance. Additionally, the first revision incorporates edits necessitated by the allowance of CO alarms in non-residential occupancies in the I-Codes.

Public Input No. 317-NFPA 72-2022 [Section No. 29.3.4]

29.3.4

Supplementary functions, including the extension of an alarm beyond the ~~residential~~ occupancy installed location , shall be permitted and shall not interfere with the performance requirements of this chapter.

Statement of Problem and Substantiation for Public Input

This is the work of a Task Group asked to propose edits necessitated by the allowance of CO alarms in non-residential occupancies in the I-Codes.

Submitter Information Verification

Submitter Full Name: Wendy Gifford
Organization: Consultant
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 19 14:09:25 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5029-NFPA 72-2022
Statement: The first revision clarifies the supplementary function requirement and provides MOS compliance. Additionally, the first revision incorporates edits necessitated by the allowance of CO alarms in non-residential occupancies in the I-Codes.

Public Input No. 453-NFPA 72-2022 [Section No. 29.3.4]

29.3.4

Supplementary functions, including the extension of ~~an alarm beyond~~ warning eqipment beyond the residential occupancy, shall be permitted and shall not interfere with the performance requirements of this chapter.

Statement of Problem and Substantiation for Public Input

The meaning of the word "alarm" is very vague. The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 26 17:05:30 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: Alarm is the correct term in this requirement because it encompasses all signals required by this Code.

Public Input No. 321-NFPA 72-2022 [New Section after 29.4]

29.4.1 Remote Annunciation from Listening Equipment or Services

Remote annunciation provided from fire-warning (T3) and carbon monoxide-warning (T4) listening equipment or services shall be permitted, provided signals at the remote annunciator properly identify the hazard.

Statement of Problem and Substantiation for Public Input

Currently there are no NFPA, UL, or industry standard requirements for smart speakers and home security systems that provide "listening" equipment or services that alert remote monitoring centers when a fire-warning (T3) or carbon monoxide-warning (T4) alarm has been detected. NFPA 72 requires all devices, combinations of devices, and equipment to be installed in conformity with Chapter 29 to be approved or listed for the purposes for which they are intended. Since remote monitoring centers respond to remote annunciations from the listening equipment or services and potentially dispatch emergency services, manufacturers and service providers need to somehow demonstrate that signals coming from the equipment properly identify the hazard.

Submitter Information Verification

Submitter Full Name: Greg Hansen
Organization: Vivint Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 20 20:33:02 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: CI-5034-NFPA 72-2022
Statement: There is currently no definition or listing for “listening equipment or services”. A task group will be formed to examine all listening devices and the use of these devices and to provide public comment on the use of this technology.

Public Input No. 347-NFPA 72-2022 [Section No. 29.5.1]

29.5.1*

Unless otherwise permitted by 29.5.3, fire-warning equipment to be installed in residential occupancies shall produce the ~~audible~~ T-3, three-pulse temporal pattern, audible emergency evacuation signal described in ANSI/ASA S3.41, *Audible Emergency Evacuation (E2) and Evacuation Signals with Relocation Instructions (ESRI)*, whenever the intended response is to evacuate the building.

Statement of Problem and Substantiation for Public Input

Adds clarification without needing to find a copy of ANSI/ASA S3.41.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 348-NFPA 72-2022 [Section No. 29.5.2]	
Public Input No. 349-NFPA 72-2022 [Section No. 29.5.3]	

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 24 15:35:33 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5037-NFPA 72-2022

Statement: The words “three-pulse temporal pattern is added to define what is meant by “emergency evacuation signal”. The term “T3” is added to the requirement because it is widely used and recognized in the industry and this action codifies the term. “Audible” was removed because T3 is an acronym for an emergency audible evacuation signal. This also provides consistency with the use of “T4” elsewhere in the document.

Public Input No. 348-NFPA 72-2022 [Section No. 29.5.2]

29.5.2

The T-3 audible emergency evacuation signal shall be permitted to be used for other devices as long as the desired response is immediate evacuation.

Statement of Problem and Substantiation for Public Input

Adds clarification without needing to find a copy of ANSI/ASA S3.41.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 347-NFPA 72-2022 [Section No. 29.5.1]	Directly related to one another.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 24 15:43:09 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5038-NFPA 72-2022
Statement: “T3” was added based on the action taken in the first revision on 29.5.1. “Audible” was removed because T3 is an acronym for an emergency audible evacuation signal. The annex provides additional information which explains the terminology.

Public Input No. 349-NFPA 72-2022 [Section No. 29.5.3]

29.5.3

Where mechanically powered single-station heat alarms are used as supplementary devices, unless required by applicable laws, codes, or standards, such devices shall not be required to produce the T-3 audible emergency evacuation signal described in ANSI/ASA S3.41, *Audible Emergency Evacuation (E2) and Evacuation Signals with Relocation Instructions (ESRI)*.

Statement of Problem and Substantiation for Public Input

Adding "T-3" and it's definition brings consistency and clarification to section 5.2. We use "T-4" in section 29.5.4. The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 347-NFPA 72-2022 [Section No. 29.5.1]	Directly related

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 24 15:45:39 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5039-NFPA 72-2022
Statement: “T3” was added based on the action taken in the first revision on 29.5.1.

Public Input No. 547-NFPA 72-2022 [New Section after 29.5.4]

29.5.4.1

Carbon monoxide-warning equipment shall be permitted to produce the audible emergency evacuation signal, as required for fire-warning equipment, during an event in which other notification appliances on the same circuit are required to produce that signal.

Statement of Problem and Substantiation for Public Input

In multi-unit residential occupancies, it is common to install system detectors paired with sounder bases as a means to meet the requirements for single- and multiple- station alarms and household signaling systems for each residential unit. In combination systems, these sounder bases are used to sound the Temporal Code Three (T3) audible tone in the event of a fire detector (smoke or heat) activation, or the Temporal Code Four (T4) tone in the event of a carbon monoxide (CO) detector activation. Often, these systems are configured with a tone generator producing the T3 or T4 tone on the Notification Appliance Circuit (NAC) serving these sounder bases (rather than the individual sounder bases generating the tone themselves).

The NAC can only carry a single tone (either T3 or T4 at a given time). In the event of a CO detector activation, the associated sounder base will sound the T4 tone; in the event of a fire detector activation, the associated sounder base will sound the T3 tone. However, in the unlikely event of a CO detector activation in one unit, followed by a fire detector activation in another unit, sounder bases within both units would sound the T3 tone (assuming that both sounder bases are on the same NAC). The intent of this code change proposal is to clarify that this is acceptable.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 554-NFPA 72-2022 [New Section after 29.10.7.4]	

Submitter Information Verification

Submitter Full Name: Maxwell French
Organization: Code Red Consultants
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 17:28:37 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: The proposed text is currently covered by the requirement in 29.11.2.1(5).

Public Input No. 12-NFPA 72-2021 [Section No. 29.5.4]

29.5.4*

Carbon monoxide–warning equipment to be installed in residential occupancies shall produce the T-4 signal ~~. After~~ and after the initial 4 minutes of alarm, the 5-second "off" ~~time of the alarm signal shall be~~ time permitted to be changed to 60 seconds ± 10 percent.

Statement of Problem and Substantiation for Public Input

Arranges texts to comply with the Manual of Style. This is being submitted by the MOS Task Group. Consisting of Tom Miller as Task Group Chair and Jeff McBride, Paul Murphy, and George Bish as members

Submitter Information Verification

Submitter Full Name: George Bish
Organization: Amazon/Ring Protect Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Mon Nov 08 09:05:24 EST 2021
Committee: SIG-HOU

Committee Statement

Resolution: FR-5237-NFPA 72-2022
Statement: This revision is made to comply with the NFPA Manual of Style.

Public Input No. 150-NFPA 72-2022 [Section No. 29.5.4]

29.5.4*

Carbon monoxide–warning equipment to be installed in residential occupancies shall produce the T-4 ~~signal~~ , four-pulse temporal, audible evacuation signal . After the initial 4 minutes of ~~alarm~~ the audible evacuation signal , the 5-second “off” time of ~~the alarm signal~~ the audible evacuation signal shall be permitted to be changed to 60 seconds ± 10 percent.

Statement of Problem and Substantiation for Public Input

Adds clarification to what a T-4 signal is and adds definition to what the "alarm" is. The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Tue Feb 22 09:38:06 EST 2022
Committee: SIG-HOU

Committee Statement

Resolution: T4 is defined adequately in the standard.

Public Input No. 13-NFPA 72-2021 [Section No. 29.5.5]

29.5.5*

Fire-warning equipment producing the audible emergency evacuation signal ~~shall be permitted to incorporate~~ incorporating voice notification ~~under either~~ shall meet either or both of ~~the following conditions: Where the voice message is~~ 29.5.5.1 and 29.5.5.2:
29.5.5.1 T he voice message shall be contained completely within the 1.5-second pause period of the audible emergency evacuation signal

~~Where the voice message complies with~~
29.5.5

~~(2)(a) and~~ ~~29.5.5(2)(b)~~ ~~as follows:~~
.2 The voice message shall comply with both of the following

(a) The voice message is first preceded by a minimum of eight cycles of the audible emergency evacuation signal.

(b) The voice message periodically interrupts the signal for no longer than 10 seconds, followed by a minimum of two cycles of the audible emergency evacuation signal between each voice message. The initial eight-cycle period shall not be required to be repeated.

Statement of Problem and Substantiation for Public Input

Arranges texts to comply with the Manual of Style. This is being submitted by the MOS Task Group. Consisting of Tom Miller as Task Group Chair and Jeff McBride, Paul Murphy, and George Bish as members

Submitter Information Verification

Submitter Full Name: George Bish
Organization: Amazon/Ring Protect Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Mon Nov 08 09:09:33 EST 2021
Committee: SIG-HOU

Committee Statement

Resolution: FR-5238-NFPA 72-2022
Statement: This revision is made to comply with the NFPA Manual of Style. The addition of T3 to the MOS revisions adds clarification and specifies which "emergency evacuation signal" the section is referring to.

Public Input No. 350-NFPA 72-2022 [Section No. 29.5.5]

29.5.5*

Fire-warning equipment producing the T-3 audible emergency evacuation signal shall be permitted to incorporate voice notification under either or both of the following conditions:

(1) Where the voice message is contained completely within the 1.5-second pause period of the T-3 audible emergency evacuation signal

(2) Where the voice message complies with 29.5.5(2)(a) and 29.5.5(2)(b) as follows:

(3) The voice message is first preceded by a minimum of eight cycles of the T-3 audible emergency evacuation signal.

(4) The voice message periodically interrupts the T-3 audible emergency evacuation signal for no longer than 10 seconds, followed by a minimum of two cycles of the T-3 audible emergency evacuation signal between each voice message. The initial eight-cycle period shall not be required to be repeated.

Statement of Problem and Substantiation for Public Input

Adds clarification and specifies which "emergency evacuation signal" the section is referring to. The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 24 15:59:54 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5238-NFPA 72-2022
Statement: This revision is made to comply with the NFPA Manual of Style. The addition of T3 to the MOS revisions adds clarification and specifies which "emergency evacuation signal" the section is referring to.

Public Input No. 14-NFPA 72-2021 [Section No. 29.5.6]

29.5.6*

Carbon monoxide–warning equipment producing the audible notification signal ~~shall be permitted to incorporate~~ incorporating voice notification ~~under~~ shall meet either or both of ~~the following:~~

~~Where the voice message is~~

29.5.6.1 and 29.5.6.2:

29.5.6.1 T he voice message shall be contained completely within the 5-second pause period of the audible notification signal

~~Where the voice message complies with~~

29.5.6

~~(2)(a) and 29.5.6(2)(b) as follows:~~

.2 The voice message shall comply with both of the following

(a) The voice message is first preceded by a minimum of 6 cycles of the audible notification signal.

(b) The voice message periodically interrupts the signal for no longer than 10 seconds, followed by a minimum of two cycles of the audible notification signal between each voice message.

~~The initial 6-cycle period shall not be required to be repeated.~~

Statement of Problem and Substantiation for Public Input

Arranges texts to comply with the Manual of Style. This is being submitted by the MOS Task Group. Consisting of Tom Miller as Task Group Chair and Jeff McBride, Paul Murphy, and George Bish as members

Submitter Information Verification

Submitter Full Name: George Bish
Organization: Amazon/Ring Protect Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Mon Nov 08 09:17:59 EST 2021
Committee: SIG-HOU

Committee Statement

Resolution: FR-5239-NFPA 72-2022

Statement: This revision is made to comply with the NFPA Manual of Style. The addition of T4 to the MOS revisions adds clarification and specifies which "emergency evacuation signal" the section is referring to.

Public Input No. 351-NFPA 72-2022 [Section No. 29.5.6]

29.5.6*

Carbon monoxide–warning equipment producing the ~~audible notification signal~~ T-4 audible emergency evacuation signal shall be permitted to incorporate voice notification under either or both of the following:

(1) Where the voice message is contained completely within the 5-second pause period of the T-4 audible ~~notification~~ emergency evacuation signal

(2) Where the voice message complies with 29.5.6(2)(a) and 29.5.6(2)(b) as follows:

(a) The voice message is first preceded by a minimum of 6 cycles of the T-4 audible ~~notification~~ emergency evacuation signal.

(b) The voice message periodically interrupts the ~~signal~~ T-4 audible emergency evacuation signal for no longer than 10 seconds, followed by a minimum of two cycles of the T-4 audible ~~notification~~ emergency evacuation signal between each voice message. The initial 6-cycle period shall not be required to be repeated.

Statement of Problem and Substantiation for Public Input

Adds clarification and specifies which audible emergency evacuation signal is being referred to. The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 24 16:05:16 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5239-NFPA 72-2022
Statement: This revision is made to comply with the NFPA Manual of Style. The addition of T4 to the MOS revisions adds clarification and specifies which "emergency evacuation signal" the section is referring to.

Public Input No. 153-NFPA 72-2022 [Section No. 29.5.7]

29.5.7

All audible notification ~~signals~~ appliances installed shall meet the performance requirements of 18.4.4, 18.4.6.1, 18.4.6.2, and 29.5.10.

Statement of Problem and Substantiation for Public Input

A "signal" cannot be installed. Appliances is a more appropriate term. The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Wed Feb 23 18:04:25 EST 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5044-NFPA 72-2022
Statement: This revision clarifies that a signal cannot be installed.

Public Input No. 154-NFPA 72-2022 [Section No. 29.5.8]

29.5.8*

Where visual notification appliances are provided, they shall meet the requirements of Section 18.5.

Statement of Problem and Substantiation for Public Input

Section 18.5 refers to these as "visual notification appliances". The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Wed Feb 23 18:09:29 EST 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5048-NFPA 72-2022
Statement: Section 18.5 refers to these appliances as “visual notification appliances”.

Public Input No. 220-NFPA 72-2022 [Section No. 29.5.9]

29.5.9

Since hearing deficits are often not apparent, the responsibility for advising the appropriate person(s) of the existence of this deficit shall be that of the party with hearing loss. A.29.5.9. As requirements around the disclosure of disabilities are defined in various laws, the owner, under the Fair Housing Act or the Americans with Disabilities Act, may have responsibility to provide, install and make ready for use a device when a request is received.

Statement of Problem and Substantiation for Public Input

The NFPA Disability Access Review and Advisory Committee (DARAC) (www.nfpa.org/darac) would like to propose this new annex material to provide additional context for the existing requirement, while also providing a reference to the Fair Housing Act and Americans with Disabilities Act for reference and guidance.

Submitter Information Verification

Submitter Full Name: Marsha Mazz
Organization: United Spinal Association
Affiliation: Representing the DARAC Advisory Committee
Street Address:
City:
State:
Zip:
Submittal Date: Thu Apr 14 10:40:19 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5208-NFPA 72-2022
Statement: The requirement has been editorially revised. The annex material is useful in describing the potential responsibilities of the owner.

Public Input No. 585-NFPA 72-2022 [Sections 29.5.9, 29.5.10]

Sections 29.5.9, 29.5.10

29.5.9 _

~~Since hearing deficits are often not apparent, the responsibility for advising the appropriate person(s) of the existence of this deficit shall be that of the party with hearing loss.~~

~~**29.5.10**~~ _

Notification appliances provided in sleeping rooms and guest rooms

~~for those with hearing loss~~

shall comply with 29.5.

~~10~~

9 .1 and 29.5.

~~10~~

9 .2 , as applicable.

29.5.

~~10~~

9 .1

~~* – Mild to Severe Hearing Loss.~~

~~Notification appliances provided for those with mild to severe hearing loss shall comply with the following: An audible~~

Fire Alarm System Signals

29.5.9.1.1 Sleeping rooms, guest rooms, and dwelling units containing a fire alarm system shall be provided with a fire alarm system audible alarm notification appliance producing a 520 Hz low - frequency

~~alarm~~

signal

~~shall be installed in the following situations:~~

(1) ~~Where required by governing laws, codes, or standards for people with hearing loss~~

(2) ~~Where provided voluntarily for those with hearing loss~~

* ~~The low frequency alarm signal output shall comply with the following:~~

- ~~The waveform shall have a fundamental frequency of 520 Hz ± 10 percent.~~

meeting the requirements of Chapter 18.

29.5.9.1.2 The minimum sound level at the pillow shall be 75 dBA, or 15 dB above the average ambient sound level, or 5 dB above the maximum sound level having a duration of at least

~~60 seconds~~

60 seconds , whichever is greater.

29.5.

~~10~~

9 .2

~~* – Moderately Severe to Profound Hearing Loss.~~

~~Visual notification appliances in accordance with the requirements of 18.5.5.10 and tactile notification appliances in accordance with the requirements of Section 18.10 shall be required for those with moderately severe to profound hearing loss in the following situations:~~

(1)* ~~Where required by governing laws, codes, or standards for people with hearing loss~~

(2) ~~Where provided voluntarily for those with hearing loss~~

Smoke Alarm Signals

29.5.9.2.1* The audible alarm activated by single- or multiple-station smoke alarms shall activate a 520 Hz low-frequency signal throughout the sleeping rooms, guest rooms, and dwelling unit.

29.5.9.2.2* Where a sleeping room smoke alarm is unable to produce a 520 Hz low-frequency signal, a 520 Hz low-frequency alarm signal shall be provided by a listed low-frequency notification appliance or by a smoke detector with an integral 520 Hz sounder.

29.5.9.2.3 The minimum sound level at the pillow shall be 75 dBA, or 15 dB above the average ambient sound level, or 5 dB above the maximum sound level having a duration of at least 60 seconds, whichever is greater.

Statement of Problem and Substantiation for Public Input

The requirement of 29.5.9 for self-identification of hearing loss is not a viable way to design the audible alarm for a sleeping occupancy, and thus not enforceable. The requirements of 29.5.10.1 for "mild to severe hearing loss" and 29.5.10.2 for "moderately severe to profound hearing loss" are overlapping and confusing in application. Multiple Fire Protection Research Foundation studies have proven that a low-frequency signal provides the best waking ability for people with and without hearing loss. It is impossible for a designer to know if a sleeping room will be occupied with someone with hearing loss, much less what degree of hearing loss is experienced. Thus, the low frequency requirements should be applied evenly to all sleeping rooms. This rewrite is in line with the IFC 2021 section 907.5.2.1.3.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 586-NFPA 72-2022 [Sections A.29.5.10.1, A.29.5.10.1(2), A.29.5.10.2, A.29.5.1...]	Annex material to code sections
Public Input No. 586-NFPA 72-2022 [Sections A.29.5.10.1, A.29.5.10.1(2), A.29.5.10.2, A.29.5.1...]	

Submitter Information Verification

Submitter Full Name: Larry Rietz
Organization: Jensen Hughes
Street Address:
City:
State:
Zip:
Submittal Date: Wed Jun 01 19:55:53 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: The substantiation does not support the scale of the proposed revisions. While it is understood by the committee that other model codes are moving in the direction of wide-reaching implementation of low frequency devices, there needs to be more data provided to support the level of implementation suggested by the public input. There currently are no smoke alarms in the marketplace that can meet the proposed requirements. Chapter 29 does not preclude the use of this technology once it becomes available. A task group will be convened between the first and second draft phases of the revision process to study this topic.

Public Input No. 195-NFPA 72-2022 [Section No. 29.5.10 [Excluding any Sub-Sections]]

Notification appliances provided in sleeping rooms and guest rooms ~~for those with hearing loss~~ shall comply with 29.5.10.1 and 29.5.10.2 , as applicable.

Statement of Problem and Substantiation for Public Input

Requirements in a code or standard applicable to only a specific segment of the population are impossible to comply with from a design perspective and enforce from an authority having jurisdiction perspective. How will a designer know if an occupant has "mild to severe hearing loss"? How will an AHJ know while reviewing design drawings if future occupant(s) will have "mild to severe hearing loss". From an AHJ perspective, a section of a code or standard that cannot be enforced, will not be enforced. Or worse, ignored altogether. The changes proposed will correlate the NFPA 72 smoke alarm requirements with section 907 in the International Fire Code. The 2021 Edition of the International Fire Code added new requirements that the smoke alarm signal in guest rooms and dwelling units produce a low frequency tone.

Submitter Information Verification

Submitter Full Name: John Swanson
Organization: Self
Affiliation: Self
Street Address:
City:
State:
Zip:
Submittal Date: Fri Mar 25 17:27:30 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: The substantiation does not support the scale of the proposed revisions. While it is understood by the committee that other model codes are moving in the direction of wide-reaching implementation of low frequency devices, there needs to be more data provided to support the level of implementation suggested by the public input. There currently are no smoke alarms in the marketplace that can meet the proposed requirements. Chapter 29 does not preclude the use of this technology once it becomes available. A task group will be convened between the first and second draft phases of the revision process to study this topic.

Public Input No. 196-NFPA 72-2022 [Section No. 29.5.10.1]

~~29.5.10.1~~ *

~~Mild~~

~~Mild~~ ~~to Severe Hearing Loss.~~

~~Notification appliances provided for those with mild to severe hearing loss shall comply with the following:~~

(1) ~~An audible notification appliance producing a low frequency alarm signal shall be installed in the following situations:~~

(2) ~~Where required by governing laws, codes, or standards for people with hearing loss~~

(3) ~~Where provided voluntarily for those with hearing loss~~

(4) * ~~The low frequency alarm signal output shall comply with the following:~~

(5) ~~The waveform shall have a fundamental frequency of 520 Hz ± 10 percent.~~

(6) ~~The minimum sound level at the pillow shall be 75 dBA, or 15 dB above the average ambient sound level, or 5 dB above the maximum sound level having a duration of at least 60 seconds, whichever is greater.~~

29.5.10.1* Smoke alarm signal

The smoke alarm signal in dwelling units and guest rooms shall comply with the following:

(1) The waveform shall have a fundamental frequency of 520 Hz ± 10 percent.

(2) The minimum sound level at the pillow shall be 75 dBA, or 15 dB above the average ambient sound level, or 5 dB above the maximum sound level having a duration of at least 60 seconds, whichever is greater.

Statement of Problem and Substantiation for Public Input

Requirements in a code or standard specific to only a specific segment of the population are impossible to comply with from a design perspective and an enforcement perspective. How does a fire alarm designer know if an occupant will have mild to severe hearing loss? How does an AHJ know when reviewing fire alarm plans if future occupant(s) will have mild to severe hearing loss. The intent of this change is to coordinate the smoke alarm signal requirements with the International Fire Code. The 2021 International Fire Code requires the smoke alarm signal to produce a low frequency tone in Section 907.

Submitter Information Verification

Submitter Full Name: John Swanson
Organization: Self

Affiliation: Self
Street Address:
City:
State:
Zip:
Submittal Date: Fri Mar 25 17:34:06 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: The substantiation does not support the scale of the proposed revisions. While it is understood by the committee that other model codes are moving in the direction of wide-reaching implementation of low frequency devices, there needs to be more data provided to support the level of implementation suggested by the public input. There currently are no smoke alarms in the marketplace that can meet the proposed requirements. Chapter 29 does not preclude the use of this technology once it becomes available. A task group will be convened between the first and second draft phases of the revision process to study this topic.

Public Input No. 45-NFPA 72-2021 [Section No. 29.5.10.1]

29.5.10.1* Mild to Severe Hearing Loss.

Notification appliances provided for those with mild to severe hearing loss shall comply with the following:

(1) An audible notification appliance producing a low frequency alarm signal shall be installed in the following situations:

(2) Where required by governing laws, codes, or standards for people with hearing loss

(3) Where provided voluntarily for those with hearing loss

(4)* The low frequency alarm signal output shall comply with both of the following:

~~The waveform shall have~~

(a) Have a fundamental

~~frequency~~

(a) waveform of 520 Hz ± 10 percent.

~~The~~

(a) Have a minimum sound level at the pillow

~~shall be~~

(a) of 75 dBA, or 15 dB above the average ambient sound level, or 5 dB above the maximum sound level having a duration of at least 60 seconds, whichever is greater.

Statement of Problem and Substantiation for Public Input

Arranges text to comply Manual of Style (MOS). This is being submitted by the MOS Task Group consisting of Tom Miller as Task Group Chair, Jeffery McBride, Paul Murphy and George as Bish as members.

Submitter Information Verification

Submitter Full Name: Jeffery McBride
Organization: EBL Engineers, LLC
Affiliation: Special Expert
Street Address:
City:
State:
Zip:
Submittal Date: Thu Dec 30 13:12:43 EST 2021
Committee: SIG-HOU

Committee Statement

Resolution: FR-5215-NFPA 72-2022

Statement: The revisions clarify the requirement and additionally provide for MoS compliance.

Public Input No. 148-NFPA 72-2022 [New Section after 29.6.3]

29.6.3.2

When fire- and carbon monoxide- warning equipment are connected to a control unit, all required audible and visual trouble indications, and applicable supervision requirements shall automatically be programmed into the control unit. These features will be programmed such that they cannot be disabled.

Statement of Problem and Substantiation for Public Input

There are currently control units on the market that do not automatically make these life safety adjustments. They are optional. This defeats the whole purpose of life safety devices.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Mon Feb 21 16:19:20 EST 2022
Committee: SIG-HOU

Committee Statement

Resolution: The proposed requirement addresses the operation of residential fire alarm control panels and is better suited for inclusion in the product certification standard. The proposed requirement does not address a common installation problem and should be addressed through the commissioning of the system, which is a requirement of this standard.

Public Input No. 354-NFPA 72-2022 [Section No. 29.7 [Excluding any Sub-Sections]]

The warning functions intended in this standard shall be performed by single or multiple-station alarms or by system-based detectors connected to a control unit and associated equipment.

Statement of Problem and Substantiation for Public Input

Adds uniformity to what we are referring to. We use the term "system-based detectors" in section 29.3.3. The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 24 16:31:31 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: The defined term “detector” indicates a system based solution already.

Public Input No. 356-NFPA 72-2022 [Section No. 29.7.1.1]

29.7.1.1*

Where required by other governing laws, codes, or standards for a specific type of occupancy, listed carbon monoxide alarms or system-based detectors shall be installed as follows:

(1) Outside of each separate dwelling unit sleeping area, within 21 ft (6.4 m) of any door to a sleeping room, with the distance measured along a path of travel

(2) On every occupiable level of a dwelling unit, including basements, excluding attics and crawl spaces

(3) In all sleeping rooms and guest rooms containing installed fuel-burning appliances

(4) Other locations where required by applicable laws, codes, or standards

Statement of Problem and Substantiation for Public Input

The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 24 17:14:19 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: The term “system-based” is not consistent with terms used in this section. See the committee action on PI 339.

Public Input No. 339-NFPA 72-2022 [Sections 29.7.1.1, 29.7.1.2]

Sections 29.7.1.1, 29.7.1.2

29.7.1.1*

Where required by other governing laws, codes, or standards for a specific type of occupancy, listed carbon monoxide alarms or detectors shall be ~~installed as~~ sited as follows:

~~Each alarm or detector shall be located on the wall, ceiling, or other location as specified in the manufacturer's published instructions that accompany the unit~~

(1) Outside of each separate dwelling unit sleeping area, within 21 ft (6.4 m) of any door to a sleeping room, with the distance measured along a path of travel

(2) On every occupiable level of a dwelling unit, including basements, excluding attics and crawl spaces

(3) ~~In all sleeping rooms and guest rooms containing installed fuel-burning appliances~~

(4) ~~Other locations where required by applicable laws, codes, or standards~~

~~**29.7.1.2 ***~~ –

(1) On the ceiling or on the wall with the top of the alarm or detector within 12 inches of the ceiling , when installed in the same room as permanently installed fuel-burning appliances.

(2) In accordance with manufacturer's published instructions .

Additional Proposed Changes

File Name	Description	Approved
SIG-HOU_CO_PI_29.7_Roberts_v2.docx	word document summarizing the proposed changes	

Statement of Problem and Substantiation for Public Input

This public input (PI) being submitted on behalf of the NFPA 72 Chapter 29 carbon monoxide detection working group (WG) and it has two objectives.

1. Remove requirements for when to install CO alarm/detectors that conflict with various ICC and NFPA model fire/building codes.
2. Provide requirements for how to physically to install CO alarms/detectors when they are required in a room or area by governing laws, codes, or standards.

As written in the 2022 edition of NFPA 72, section 29.7.1.1 requires CO detection to be installed in certain rooms or areas. This PI modifies this section to focus on how and where to install detection devices when they are required by fire/building codes or laws. This change is needed because fire and building codes provide requirement for when a system or device is to be installed in a particular occupancy classification. Also, the requirements in model fire/building codes take precedence over NFPA 72 with respect to when CO detection is to be installed. The rewritten requirements focus on the specific conclusions of the 2007 Fire Protection Research Foundation (FPRF) report entitled, "Development of a Technical Basis for Carbon Monoxide Detector Siting."

Submitter Information Verification

Submitter Full Name: Richard Roberts

Organization: Honeywell Fire Safety
Affiliation: On behalf of the NFPA 72 Chapter 29 carbon monoxide detection working group (WG)
Street Address:
City:
State:
Zip:
Submittal Date: Mon May 23 17:04:39 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5227-NFPA 72-2022
Statement: The first revision is consistent with a change to the 2024 edition of the International Fire Code/International Building Code that will allow carbon monoxide alarms to be installed inside rooms or spaces within commercial buildings that are remote from dwelling units and sleeping units. A task group will be convened to review this topic between the First and Second Draft phases of the revision process.

Public Input No. 491-NFPA 72-2022 [New Section after 29.7.1.2]

TITLE OF NEW CONTENT

29.7.1.2.1 * Where governing laws, codes, or standards require, or permit carbon monoxide alarms to be installed in an area or room of a commercial building that is remote from dwelling units, sleeping units, guest rooms, or guest suites , all of the following shall apply:

(1) Where specifically permitted in the manufacturer's published instructions.

(2) *When installed in a normally unoccupied area or room of a commercial building , the CO alarm shall initiate an audible and visual signal by means of a connected notification appliance in a normally occupied area or room of the building.

(3) * When installed in a normally occupied area or room of a commercial building, the CO alarm shall initiate an audible and visual signal by means of a connected notification appliance in said area or room.

(4) The audible notification appliance shall produce a four-pulse temporal 4 alarm pattern in accordance with Chapter 18 of this Code.

(5) The visual notification appliance shall be marked with the word "CO" or "ALERT".

(6) The inspection, testing and maintenance shall be performed by personnel meeting the requirements of 10.5.3 and in accordance with Chapter 14.

A.29.7.1.2.1 The reason for new section 29.7.1.2.1 is in response to new laws in several states (New York and New Jersey) and a new requirement in the 2024 edition of the International Fire Code (IFC) that:

- Expand the carbon monoxide detection (CO) requirements beyond apartment buildings, dormitories, hotels, healthcare occupancies and education facilities to be included in most all commercial occupancies having a known CO source in the building.
- Require, or permit CO alarms to be installed in commercial occupancies even though the scope of the current edition of UL 2034 only permits CO alarms to be installed in dwelling units.

The intent of Section 29.7.1.2.1 is to make sure building occupants are alerted of a CO leak before the gas spreads throughout the building and that CO alarms remain operational by requiring them to be inspected, tested, and maintained by a qualified technician. Notifying building occupants of an emergency and having life safety equipment remain operational by qualified technicians are a fundamental life safety requirement for commercial buildings.

Commercial buildings include all buildings other than one- and two-family dwellings. Examples of commercial buildings include but not limited to assembly occupancies, mercantile, business, hotels/motels, apartment buildings, dormitories, healthcare, and education.

A.29.7.1.2.1(3) The intent of 29.7.1.2.1(1) is to ensure people are alerted if there is a CO leak in a normally unoccupied area or room of a commercial building by requiring an audible/visual notification appliance to be installed in normally occupied room or area of the building. The reason for requiring a visual notification appliance is to alert people who are hard of hearing or deaf.

A.29.7.1.2.1(3) The intent of 29.7.1.2.1(2) is to ensure people, as well as people who are hard of hearing or deaf, are alerted if there is a CO leak in a normally occupied area or room of a commercial building by requiring an audible/visual notification appliance to be installed in said room or area.

Statement of Problem and Substantiation for Public Input

1. Ensure that all building occupants, including people who are hard of hearing or deaf, are alerted of an activated CO alarm that is installed in a normally unoccupied or occupied area or room of a commercial building.
2. Ensure CO alarms perform as intended when they are installed in non-dwelling units, sleeping units, guest rooms or guest suites of commercial buildings by requiring them to be inspected, tested, and maintained by a qualified technician and in accordance with Chapter 14 of this Code.

New section 29.7.1.2 is being proposed because of a new requirement in the 2024 edition of the International Fire Code (IFC)/International Building Code (IBC) that permits CO alarms to be installed in commercial buildings that are not required to have a fire alarm system if there is a known CO source. The ICC membership approved Public Comment 1 to proposal F102-21 during the Public Comment Haring). New section 29.7.1.2 is adding several new requirements to make sure building occupants are alerted of a CO leak before the gas spreads throughout the building and that CO alarms remain operational by requiring them to be inspected, tested, and maintained by a qualified technician. Notifying building occupants of an emergency and having life safety equipment remain operational by qualified technicians are a fundamental life safety requirement for commercial buildings.

Submitter Information Verification

Submitter Full Name: Tim Knisely
Organization: Automatic Fire Alarm Association (AFAA)
Affiliation: Automatic Fire Alarm Association (AFAA)
Street Address:
City:
State:
Zip:
Submittal Date: Mon May 30 09:23:28 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: The recommended text contains requirements that duplicative and conflict with other requirements in the standard. A task group will be convened to review this topic between the First and Second Draft phases of the revision process.

Public Input No. 357-NFPA 72-2022 [Section No. 29.7.1.2]

29.7.1.2*

Each carbon monoxide alarm or system-based detector shall be located on the wall, ceiling, or other location as specified in the manufacturer's published instructions that accompany the unit.

Statement of Problem and Substantiation for Public Input

The word "alarm" and "detector" needs to be defined to add uniformity to Chapter 29. The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 24 17:17:27 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5227-NFPA 72-2022

Statement: The first revision is consistent with a change to the 2024 edition of the International Fire Code/International Building Code that will allow carbon monoxide alarms to be installed inside rooms or spaces within commercial buildings that are remote from dwelling units and sleeping units. A task group will be convened to review this topic between the First and Second Draft phases of the revision process.

Public Input No. 358-NFPA 72-2022 [Section No. 29.8 [Excluding any Sub-Sections]]

The use ~~of fire alarm system~~ of system-based smoke detectors and notification appliances shall be permitted to meet the fire-warning requirements for smoke alarms specified in 29.8.1.

Statement of Problem and Substantiation for Public Input

System-based detectors adds clarification and distinguishes between system based detectors and single- and multiple-station alarms that we refer to as "smoke alarms". The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 24 17:23:02 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: System-based is not a defined term within the chapter, additionally changing the term fire alarm system to system-based does not add clarity to the code.

Public Input No. 362-NFPA 72-2022 [Section No. 29.8.1.2]

29.8.1.2

Where the area addressed in 29.8.1.1(2) is separated from the adjacent living areas by a door, a smoke alarm shall be installed in the area between the door and the sleeping rooms, and additional smoke alarms shall be installed on the living area side of the door as specified by 29.8.1.1 and 29.8.1.3.

Statement of Problem and Substantiation for Public Input

The word "alarm" always needs to be defined as to what type unless the word "alarm" matches the definition in section 3.3.11. This is the only place in section 29.8.1 that the word "alarm" does not have smoke in front of it. The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 24 17:55:33 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5241-NFPA 72-2022
Statement: This revision is made to comply with the NFPA Manual of Style. The order of smoke alarm and smoke detector was made to be consistent throughout the chapter.

Public Input No. 46-NFPA 72-2021 [Section No. 29.8.1.2]

29.8.1.2

Where the area addressed in 29.8.1.1(2) is separated from the adjacent living areas by a door, ~~a smoke~~ smoke alarm ~~shall be installed~~ or smoke detector placement shall comply with both of the following:

(1) Installed in the area between the door and the sleeping ~~rooms, and additional alarms shall be~~ room(s).

(2) Have additional smoke alarms or smoke detectors installed on the living area side of the door as specified by 29.8.1.1 and 29.8.1.3 .

Statement of Problem and Substantiation for Public Input

Arranges text to comply Manual of Style (MOS). This is being submitted by the MOS Task Group consisting of Tom Miller as Task Group Chair, Jeffery McBride, Paul Murphy and George as Bish as members.

Submitter Information Verification

Submitter Full Name: Jeffery McBride
Organization: EBL Engineers, LLC
Affiliation: Special Expert
Street Address:
City:
State:
Zip:
Submittal Date: Thu Dec 30 13:56:48 EST 2021
Committee: SIG-HOU

Committee Statement

Resolution: FR-5241-NFPA 72-2022
Statement: This revision is made to comply with the NFPA Manual of Style. The order of smoke alarm and smoke detector was made to be consistent throughout the chapter.

Public Input No. 47-NFPA 72-2021 [Section No. 29.8.1.3.1]

29.8.1.3.1*

All points on the ceiling shall ~~have~~ comply with one of the following:

(1) Have a smoke alarm ~~within a distance of 30 ft~~ or smoke detector within 30 ft (9.1 m) travel distance ~~or shall have~~ .

(2) Have an equivalent of one smoke alarm or smoke detector per 500 ft^2 (46 m^2) of floor area.

Statement of Problem and Substantiation for Public Input

Arranges text to comply Manual of Style (MOS). This is being submitted by the MOS Task Group consisting of Tom Miller as Task Group Chair, Jeffery McBride, Paul Murphy and George as Bish as members.

Submitter Information Verification

Submitter Full Name: Jeffery McBride
Organization: EBL Engineers, LLC
Affiliation: Special Expert
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State:
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Submittal Date: Thu Dec 30 14:05:01 EST 2021
Committee: SIG-HOU

Committee Statement

Resolution: FR-5242-NFPA 72-2022
Statement: This revision is made to comply with the NFPA Manual of Style.

Public Input No. 454-NFPA 72-2022 [Section No. 29.8.2.1 [Excluding any Sub-Sections]]

Fire-warning equipment used to provide required or optional detection shall produce ~~audible fire alarm signals that~~ the T-3 audible emergency evacuation signal and comply with 29.8.2.1.1 or 29.8.2.1.2.

Statement of Problem and Substantiation for Public Input

The T-3 emergency evacuation signal should always be produced by fire warning equipment. The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 26 18:05:30 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: The requirements for the T3 signal are specified elsewhere in this standard.

Public Input No. 363-NFPA 72-2022 [Section No. 29.8.2.1.1]

29.8.2.1.1* Interconnected Smoke and Heat Alarms.

For other than mechanically powered single-station heat alarms and unless exempted by applicable laws, codes, or standards, smoke or heat alarms used to provide a fire-warning function, and where two or more smoke or heat alarms are installed within a dwelling unit, suite of rooms, or similar area, shall be arranged so that the operation of any smoke or heat alarm causes all alarms within these locations to sound a T-3 emergency evacuation signal .

Statement of Problem and Substantiation for Public Input

This is the only spot in section 29.8.2.1.1 that "smoke or heat" does not identify the word "alarms". Added a definition of the "sound". The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
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Zip:
Submittal Date: Tue May 24 18:01:40 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: This section addresses interconnection and does not need to repeat the use of the T3 signal as it is specified elsewhere. Smoke and heat alarms are already included in the section heading and within the section itself.

Public Input No. 48-NFPA 72-2021 [Section No. 29.8.2.2]

29.8.2.2*

Unless otherwise permitted by the authority having jurisdiction, audible fire alarm signals shall ~~sound~~ comply with both of the following:

(1) Sound only in an individual dwelling unit, suite of rooms, or similar area~~ and shall not~~ .

(2) Not be arranged to operate fire-warning equipment or fire alarm systems outside these locations.

Statement of Problem and Substantiation for Public Input

Arranges text to comply Manual of Style (MOS). This is being submitted by the MOS Task Group consisting of Tom Miller as Task Group Chair, Jeffery McBride, Paul Murphy and George as Bish as members.

Submitter Information Verification

Submitter Full Name: Jeffery McBride
Organization: EBL Engineers, LLC
Affiliation: Special Expert
Street Address:
City:
State:
Zip:
Submittal Date: Thu Dec 30 14:09:48 EST 2021
Committee: SIG-HOU

Committee Statement

Resolution: FR-5243-NFPA 72-2022
Statement: This revision is made to comply with the NFPA Manual of Style.

Public Input No. 364-NFPA 72-2022 [Section No. 29.9.1]

29.9.1 Smoke and Heat and Carbon Monoxide Alarms.

Smoke and heat and carbon monoxide alarms shall meet the requirements of 29.8.2.1.1 and be powered by one of the following means:

(1) A commercial light and power source along with a secondary power source that is capable of operating the device for at least 7 days in the normal condition, followed by 4 minutes of audible and visual alarm. Carbon monoxide alarms shall have sufficient capacity to operate the audible and visual alarm signal(s) for at least 12 continuous hours.

(2) If a commercial light and power source is not normally available, a dependable, noncommercial ac power source along with a secondary power source that is capable of operating the device for at least 7 days in the normal condition, followed by 4 minutes of audible and visual alarm for smoke and heat alarms or 12 hours of audible and visual alarm for carbon monoxide alarms.

(3) A nonrechargeable, nonreplaceable primary battery that meets the requirements of 29.9.2.

(4) If a battery primary power supply is specifically permitted by governing laws, codes, or standards, a battery meeting the requirements of 29.9.7 or the requirements of 29.9.2.

(5) A suitable spring-wound mechanism for the nonelectrical portion of a listed single-station alarm with a visible indication to show that sufficient operating power is not available.

Statement of Problem and Substantiation for Public Input

The word "alarm" needs to be defined. The word "alarm" in this section does not meet the definition in section 3.3.11. The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 24 18:06:36 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: The substantiation does not support increasing the requirement to include both audible and visual notification.

Public Input No. 49-NFPA 72-2021 [Section No. 29.9.1]

29.9.1 Smoke and Heat and Carbon Monoxide Alarms.

Smoke and heat and carbon monoxide alarms shall meet the requirements of 29.8.2.1.1 and be powered by one of the following means:

(1) A commercial light and power source along with a secondary power source that is capable of operating the device ~~for~~ as follows: (a) smoke and heat alarms for at least 7 days in the normal condition, followed by 4 minutes of alarm. (b) Carbon monoxide ~~alarms shall have sufficient capacity to operate the alarm signal(s)~~ alarms for at least 12 continuous hours.

(2) If a commercial light and power source is not normally available, a dependable, noncommercial ac power source along with a secondary power source that is capable of operating the ~~device for at least 7 days in the normal condition, followed by 4 minutes of alarm for smoke and heat alarms or 12 hours of alarm for carbon monoxide alarms.~~ device as described in 29.9.1 (1) and 29.9.1 (2).

(3) A nonrechargeable, nonreplaceable primary battery that meets the requirements of 29.9.2.

(4) If a battery primary power supply is specifically permitted by governing laws, codes, or standards, a battery meeting the requirements of 29.9.7 or the requirements of 29.9.2.

(5) A suitable spring-wound mechanism for the nonelectrical portion of a listed single-station alarm with a visible indication to show that sufficient operating power is not available.

Statement of Problem and Substantiation for Public Input

Arranges text to comply Manual of Style (MOS). This is being submitted by the MOS Task Group consisting of Tom Miller as Task Group Chair, Jeffery McBride, Paul Murphy and George as Bish as members.

Submitter Information Verification

Submitter Full Name: Jeffery McBride
Organization: EBL Engineers, LLC
Affiliation: Special Expert
Street Address:
City:
State:
Zip:
Submittal Date: Thu Dec 30 14:15:31 EST 2021
Committee: SIG-HOU

Committee Statement

Resolution: FR-5246-NFPA 72-2022
Statement: The revision is made to comply with the NFPA Manual of Style. In (2) the words “normally” and “dependable” were deleted because they are vague and subjective. T3 and T4 signals were added for consistency with other requirements in the standard.

Public Input No. 365-NFPA 72-2022 [Section No. 29.9.2]

29.9.2 Primary Power Source Nonreplaceable Primary Battery.

If smoke, heat, or carbon monoxide alarms are powered by a nonrechargeable, nonreplaceable primary battery, the battery shall be monitored to ensure the following conditions are met:

(1) Single-station smoke alarm power requirements are met for at least 10 years of battery life, including required periodic testing.

(2) Single-station carbon monoxide alarm power requirements are met for at least 10 years of battery life, including required periodic testing.

(3) Multiple-station alarm power requirements are met for at least 7 years of battery life, including required periodic testing.

(4) A distinctive audible and visable trouble signal occurs before the battery is incapable of operating the device(s) for alarm purposes.

(5) At the battery voltage at which a trouble signal is obtained, the unit is capable of producing ~~a~~ an audible and visual fire alarm signal for at least 4 minutes, or ~~a~~ an audible and visual carbon monoxide alarm signal for at least 12 continuous hours in accordance with 29.5.4, followed by not less than 7 days of trouble signal operation.

(6) The audible and visable trouble signal is produced at least once every minute for 7 consecutive days.

(7) The trouble signal is allowed to be silenced for up to 12 hours.

(8) A visible "power on" indicator is provided.

Statement of Problem and Substantiation for Public Input

By ensuring that the trouble signal is both audible and visible, similar to a commercial system. The addition of adding a visual notification, it will also make the device easier to locate. The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 24 18:12:28 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: There has been no substantiation provided to support requiring audible and visual notification. Further research that this feature is necessary needs to be provided.

Public Input No. 253-NFPA 72-2022 [Section No. 29.9.3]

29.9.3 Household Fire and Carbon Monoxide Alarm Systems.

Power for household alarm systems shall comply with the following requirements:

(1) Household fire and carbon monoxide alarm systems shall have two independent power sources consisting of a primary source that uses commercial light and power and a secondary source that consists of a rechargeable battery.

(2) The secondary source shall be capable of operating the household alarm system for at least 24 hours in the normal condition, followed by 4 minutes of fire alarm or 12 hours of carbon monoxide alarm.

(a) ~~Effective January 1, 2022, the~~ The secondary power source of the household carbon monoxide system shall be capable of operating the system for at least 12 hours of alarm in accordance with 29.5.4.

(b) The secondary power source of a household carbon monoxide system shall not be required to operate the system for 12 hours of alarm if the power source of carbon monoxide detectors and carbon monoxide audible notification appliances incorporating a low-power radio (wireless) transmitter/transceiver is capable of providing at least 24 hours in the normal condition, followed by 12 hours of alarm.

(3) The secondary power source shall be supervised and shall cause a distinctive audible and visible trouble signal upon removal or disconnection of a battery or a low-battery condition.

(4) A rechargeable battery used as a secondary power source shall meet the following criteria:

(5) Be automatically recharged by an ac circuit of the commercial light and power source

(6) Be recharged within 48 hours

(7) Provide a distinctive audible trouble signal before the battery is incapable of operating the device(s) for alarm purposes

(8) Low-power wireless systems shall comply with the performance criteria of Section 23.16, except as modified by 29.10.8.1.1.

Statement of Problem and Substantiation for Public Input

The effective date has expired and needs to be removed.

Submitter Information Verification

Submitter Full Name: Rodger Reiswig
Organization: Johnson Controls
Street Address:
City:
State:
Zip:
Submittal Date: Wed Apr 27 15:25:54 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5070-NFPA 72-2022

Statement: The date listed in the section has passed and no longer necessary. Section 29.3 (3) was changed to comply with MoS by eliminating a double shall.

Public Input No. 371-NFPA 72-2022 [Section No. 29.9.3]

29.9.3 Household Fire and Carbon Monoxide Alarm Systems.

Power for household alarm systems shall comply with the following requirements:

(1) ~~Household~~ Household alarm systems that are connected to system-based fire and carbon monoxide ~~alarm systems~~ detectors shall have two independent power sources consisting of a primary source that uses commercial light and power and a secondary source that consists of a rechargeable battery.

(2) The secondary source shall be capable of operating the entire household alarm system for at least 24 hours in the normal condition, followed by 4 minutes of audible and visible fire alarm or 12 hours of audible and visible carbon monoxide alarm.

(a) Effective January 1, 2022, the secondary power source of ~~the household~~ a household alarm system that is connected to a system based- carbon monoxide ~~system~~ detectors shall be capable of operating the entire household alarm system for at least 12 hours of alarm in accordance with 29.5.4.

(b) The secondary power source of a household alarm system that is connected to a system-based carbon monoxide ~~system~~ detector shall not be required to operate the entire household alarm system for 12 hours of alarm if the power source of the system-based carbon monoxide detectors and carbon monoxide audible notification appliances incorporating a low-power radio (wireless) transmitter/transceiver is capable of providing at least 24 hours in the normal condition, followed by 12 hours of audible and visible alarm.

(3) The secondary power source for the household alarm system shall be supervised and shall cause a distinctive audible and visible trouble signal at the control unit and annunciator(s) upon removal or disconnection of a battery or a low-battery condition.

(4) A rechargeable battery used as a secondary power source for the household alarm system shall meet the following criteria:

(5) Be automatically recharged by an ac circuit of the commercial light and power source

(6) Be recharged within 48 hours

(7) Provide a distinctive audible and visible trouble signal at the control unit and annunciator(s) before the battery is incapable of operating the device(s) for alarm purposes

(8) Low-power wireless systems shall comply with the performance criteria of Section 23.16, except as modified by 29.10.8.1.1.

(9) The audible trouble signal is allowed to be silenced for up to 12 hours.

Statement of Problem and Substantiation for Public Input

Update adds clarity. Original implies that the "household alarm system" is only for fire and carbon monoxide devices. Due to some manufactures not wanting their systems to bother people when in trouble, it has become necessary to mandate visible and audible trouble indications at the control unit and annunciators. The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 25 12:17:04 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: This section covers household fire and carbon monoxide alarm systems in the heading, adding system-based, changing alarms to detectors, and adding in visible, does not add clarity. Adding in the entire household alarm system for secondary power is a modification to the code where no substantiation is provided. Additionally, there had been no substation to allow a trouble signal to be silenced for up to 12 hours.

Public Input No. 50-NFPA 72-2021 [Section No. 29.9.3]

29.9.3 Household Fire and Carbon Monoxide Alarm Systems.

Power for household alarm systems shall comply with the following requirements:

(1) Household fire and carbon monoxide alarm systems shall have two independent power sources consisting of a primary source that uses commercial light and power and a secondary source that consists of a rechargeable battery.

(2) The secondary source shall be capable of operating the household alarm system for at least 24 hours in the normal condition, followed by 4 minutes of fire alarm or 12 hours of carbon monoxide alarm.

(a) Effective January 1, 2022, the secondary power source of the household carbon monoxide system shall be capable of operating the system for at least 12 hours of alarm in accordance with 29.5.4.

(b) The secondary power source of a household carbon monoxide system shall not be required to operate the system for 12 hours of alarm if the power source of carbon monoxide detectors and carbon monoxide audible notification appliances incorporating a low-power radio (wireless) transmitter/transceiver is capable of providing at least 24 hours in the normal condition, followed by 12 hours of alarm.

(3) The secondary power source shall be supervised ~~and shall cause a~~ with a distinctive audible and visible trouble signal upon removal or disconnection of a battery or a low-battery condition.

(4) A rechargeable battery used as a secondary power source shall meet the following criteria:

(5) Be automatically recharged by an ac circuit of the commercial light and power source

(6) Be recharged within 48 hours

(7) Provide a distinctive audible trouble signal before the battery is incapable of operating the device(s) for alarm purposes

(8) Low-power wireless systems shall comply with the performance criteria of Section 23.16, except as modified by 29.10.8.1.1.

Statement of Problem and Substantiation for Public Input

Arranges text to comply Manual of Style (MOS). This is being submitted by the MOS Task Group consisting of Tom Miller as Task Group Chair, Jeffery McBride, Paul Murphy and George as Bish as members.

Submitter Information Verification

Submitter Full Name: Jeffery McBride
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Affiliation: Special Expert
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Submittal Date: Thu Dec 30 14:21:19 EST 2021
Committee: SIG-HOU

Committee Statement

Resolution: FR-5070-NFPA 72-2022
Statement: The date listed in the section has passed and no longer necessary. Section 29.3 (3) was changed to comply with MoS by eliminating a double shall.

Public Input No. 372-NFPA 72-2022 [Section No. 29.9.4]

29.9.4 AC Primary Power Source.

The ac power source specified in 29.9.1 and 29.9.3 shall comply with the following conditions:

(1) A visible “power on” indicator shall be provided and readily visible at the control unit and annunciator(s) .

(2) All electrical systems designed to be installed by other than a qualified electrician shall be powered from a source not in excess of 30 volts that meets the requirements for power-limited fire alarm circuits as defined in Article 760 of *NFPA 70*.

(3) * A restraining means shall be used at the plug-in of any cord-connected installation, unless the unit utilizes a secondary (standby) power source meeting the requirements of Section 29.9 and loss of the ac primary power source results in annunciation of an audible and visible trouble signal meeting 29.10.6.5.

(4) AC primary (main) power shall be supplied either from a dedicated branch circuit or the unswitched portion of a branch circuit also used for power and lighting.

(5) Operation of a switch (other than a circuit breaker) shall not cause loss of primary (main) power. ~~Alarms~~ Alarm equpment powered by branch circuits protected by arc-fault circuit-interrupters (AFCI) or ground-fault circuit-interrupters (GFCI) shall have a secondary power source.

(6) Neither loss nor restoration of primary (main) power shall cause an audible or visible alarm signal that exceeds 2 seconds.

(7) Where a secondary (standby) battery is provided, the primary (main) power supply shall be of sufficient capacity to operate the entire system under all conditions of loading with any secondary (standby) battery disconnected or fully discharged.

Statement of Problem and Substantiation for Public Input

Update provides clarity to manufactures that are putting these indicators an a secondary screen and are allowed to be disabled. The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 25 12:43:14 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5234-NFPA 72-2022

Statement: The first revision provides compliance with the NFPA Manual of Style and revises text for clarity. The Technical Committee does not support the need for both audible and visual signals.

Public Input No. 562-NFPA 72-2022 [Section No. 29.9.4]

29.9.4 AC Primary Power Source.

The ac power source specified in 29.9.1 and 29.9.3 shall comply with the following conditions:

(1) A visible “power on” indicator shall be provided.

(2) All electrical systems designed to be installed by other than a qualified electrician shall be powered from a source not in excess of 30 volts that meets the requirements for power-limited fire alarm circuits as defined in Article 760 of *NFPA 70*.

(3) * A restraining means shall be used at the plug-in of any cord-connected installation, unless the unit utilizes a secondary (standby) power source meeting the requirements of Section 29.9 and loss of the ac primary power source results in annunciation of an audible trouble signal meeting 29.10.6.5.

(4) AC primary (main) power shall be supplied either from a dedicated branch circuit or the unswitched portion of a branch circuit also used for power and lighting.

(5) Operation of a switch (other than a circuit breaker) shall not cause loss of primary (main) power.

(6) Alarms powered by branch circuits protected by arc-fault circuit-interrupters (AFCI) or ground-fault circuit-interrupters (GFCI) shall have a secondary power source.

(7) Neither loss nor restoration of primary (main) power shall cause an alarm signal that exceeds 2 seconds.

(8) Where a secondary (standby) battery is provided, the primary (main) power supply shall be of sufficient capacity to operate the system under all conditions of loading with any secondary (standby) battery disconnected or fully discharged.

Statement of Problem and Substantiation for Public Input

Changes proposed are to comply with the NFPA MOS.

Submitter Information Verification

Submitter Full Name: Thomas Miller
Organization: Hansen Engineering Services
Affiliation: Chapter 29 MOS Task Group
Street Address:
City:
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Submittal Date: Wed Jun 01 13:34:37 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5234-NFPA 72-2022

Statement: The first revision provides compliance with the NFPA Manual of Style and revises text for clarity. The Technical Committee does not support the need for both audible and visual signals.

Public Input No. 2-NFPA 72-2021 [Section No. 29.9.5]

29.9.5 Secondary (Standby) Power Source.

Where ~~alarms~~ single- or multi-station, or system-based detectors include a battery that is used as a secondary power source, the following conditions shall be met:

(1) The secondary power source shall be supervised and shall cause a distinctive audible ~~or~~ and visible trouble signal identifying the affected device(s) upon removal or disconnection of a battery or a low-battery condition.

(2) Acceptable replacement batteries shall be clearly identified by the manufacturer's name and model number on the ~~unit~~ device near the battery compartment.

(3) A rechargeable battery used as a secondary power source shall meet the following criteria:

(4) Be automatically recharged by the primary power source

(5) Be recharged within 4 hours where power is provided from a circuit that can be switched on or off by means other than a circuit breaker, or within 48 hours where power is provided from a circuit that cannot be switched on or off by means other than a circuit breaker

(6) Provide a distinctive audible and visible trouble signal identifying the affected device(s) before the battery is incapable of operating the device(s) for alarm purposes

(7) At the battery condition at which a trouble signal is obtained, be capable of producing

~~a~~

(a) an audible and visible fire alarm signal for at least 4 minutes or the audible and visible carbon monoxide signal for 12 continuous hours, followed by not less than 7 days of audible and visible trouble signal operation that identifies the affected device(s)

(b) Produce an audible and visible trouble signal identifying the affected device(s) at least once every minute for 7 consecutive days

(8) Where required by law for disposal reasons, rechargeable batteries shall be removable.

Statement of Problem and Substantiation for Public Input

Update provides clarity to what type of alarms and what type of signals. The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
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Submittal Date: Tue Nov 02 16:35:01 EDT 2021

Committee: SIG-HOU

Committee Statement

Resolution: The recommended text does not provide additional clarity to the requirement. Section 29.9.5 deals with alarms and not detectors. Changing “or” to “and” adds additional requirements which are not covered by any substantiation. Unit and device cannot be used interchangeably based on the current definitions.

Public Input No. 563-NFPA 72-2022 [Section No. 29.9.5]

29.9.5 Secondary (Standby) Power Source.

Where alarms include a battery that is used as a secondary power source, all of the following conditions shall be met:

(1) The secondary power source shall be supervised ~~and shall~~ .

(2) The secondary power source shall cause a distinctive audible or visible trouble signal upon removal or disconnection of a battery or a low-battery condition.

(3) Acceptable replacement batteries shall be clearly identified by the manufacturer's name and model number on the unit near the battery compartment.

(4) A rechargeable battery used as a secondary power source shall meet all of the following criteria:

(5) Be automatically recharged by the primary power source .

(6) Be recharged within 4 hours where power is provided from a circuit that can be switched on or off by means other than a circuit breaker, or within 48 hours where power is provided from a circuit that cannot be switched on or off by means other than a circuit breaker .

(7) Provide a distinctive audible trouble signal before the battery is incapable of operating the device(s) for alarm purposes .

(8) At the battery condition at which a trouble signal is obtained, be capable of producing a fire alarm signal for at least 4 minutes or the carbon monoxide signal for 12 continuous hours, followed by not less than 7 days of trouble signal operation ..

(9) Produce an audible trouble signal at least once every minute for 7 consecutive days

(10) Where required by law for disposal reasons, rechargeable batteries shall be removable.

Statement of Problem and Substantiation for Public Input

Changes proposed are to comply with the NFPA MOS.

Submitter Information Verification

Submitter Full Name: Thomas Miller
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Street Address:
City:
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Submittal Date: Wed Jun 01 13:41:21 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5075-NFPA 72-2022

Statement: The technical committee moves to make the FR as shown. Section 29.9.5 has been rewritten to comply with MoS.

Public Input No. 373-NFPA 72-2022 [Section No. 29.9.7]

29.9.7 Primary Replaceable Battery, Sole Power Source (Nonrechargeable).

If single- or multi-station alarms or system-based detectors are powered solely by a replaceable primary battery, the battery shall be monitored to ensure the following conditions are met:

(1) All power requirements are met for at least 1 year of battery life, including weekly required periodic testing.

(2) ~~A~~ Provide a distinctive audible and visible trouble signal before the battery is incapable of operating the device(s) for alarm purposes.

(3) For a system-~~connected unit employing~~ based detector employing a lock-in alarm feature, automatic transfer is provided from alarm to an audible and visible trouble ~~condition~~ signal when the ~~unit~~ device(s) has insufficient power to ~~support an alarm condition~~ operate the device(s) for alarm purposes .

(4) At the battery voltage at which a trouble signal is obtained, the ~~unit~~ device is capable of producing an audible and/or visible fire alarm signal for at least 4 minutes or an audible and/or visible carbon monoxide alarm signal for at least 12 continuous hours, followed by not less than 7 days ~~of~~ of a udible and visible trouble signal operation.

(5) The audible ~~trouble~~ and visible trouble signal is produced at least once every minute for 7 consecutive days.

(6) Acceptable replacement batteries are clearly identified by the manufacturer’s name and model number on the ~~unit~~ device near the battery compartment.

(7) A noticeable, visible indication is displayed when a primary battery is removed from the unit.

Statement of Problem and Substantiation for Public Input

Update provide clarity as to what "alarms" are. Also now uses verbiage that is used throughout Chapter 29. Added in visual indicators to assist in location the device in trouble. The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
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Street Address:
City:
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Submittal Date: Wed May 25 13:14:04 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: The recommended text does not provide additional clarity to the requirement. Section 29.9.7 deals with alarms and not detectors. Changing “or” to “and” adds additional requirements which are not covered by any substantiation. Unit and device cannot be used interchangeably based on the current definitions.

Public Input No. 374-NFPA 72-2022 [Section No. 29.9.8]

29.9.8 Primary Power Source (Rechargeable Battery).

If single- or multi-station alarms, or system-based detectors are powered by a rechargeable battery, the following conditions shall be met:

(1) The battery shall, with proper charging, be able to power the ~~alarm~~ device(s) for a life of 1 year.

(2) The battery shall be automatically recharged by a circuit of the commercial light and power source.

(3) The battery shall be recharged within 4 hours where power is provided from a circuit that can be switched on or off by means other than a circuit breaker or within 48 hours where power is provided from a circuit that cannot be switched on or off by means other than a circuit breaker.

(4) ~~A~~ Provide a distinctive audible and visible trouble signal ~~shall sound~~ before the battery is incapable of operating the device(s) for alarm purposes.

(5) For a

~~unit~~

(6) system-based detector employing a lock-in alarm feature, automatic transfer

~~shall be~~

(7) is provided from alarm to

~~a trouble condition~~

(8) an audible and visible trouble signal .

(9) At the battery ~~condition~~ voltage at which a trouble signal is obtained, the ~~unit~~ device(s) shall be capable of producing ~~a fire~~ an audible and/or visible fire alarm signal for at least 4 minutes or ~~a carbon~~ an audible and/or visible carbon monoxide alarm signal for 12 continuous hours, followed by not less than 7 days ~~of~~ of audible and visible trouble signal operation.

(10) The audible and visible trouble signal shall be produced at least once every minute for 7 consecutive days.

(11) The battery shall be nonremovable, or a noticeable and visible indication shall be displayed when the battery is removed from the ~~unit~~ device(s) .

Statement of Problem and Substantiation for Public Input

Update provides clarity and makes all of section 29.9 uniform and consistent. The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC

Street Address:
City:
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Submittal Date: Wed May 25 14:57:49 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: The recommended text does not provide additional clarity to the requirement. Section 29.9.8 deals with alarms and not detectors. “Unit” and “device” cannot be used interchangeably based on the current definitions. There has been no substantiation provided to support requiring audible and visual notification. Further research that this feature is necessary needs to be provided.

Public Input No. 564-NFPA 72-2022 [Section No. 29.9.8]

29.9.8 Primary Power Source (Rechargeable Battery).

If alarms are powered by a rechargeable battery, all of the following conditions shall be met:

(1) The battery shall, with proper charging, be able to power the alarm for a life of 1 year.

(2) The battery shall be automatically recharged by a circuit of the commercial light and power source.

(3) The battery shall be recharged within 4 hours where power is provided from a circuit that can be switched on or off by means other than a circuit breaker or within 48 hours where power is provided from a circuit that cannot be switched on or off by means other than a circuit breaker.

(4) A distinctive audible trouble signal shall sound before the battery is incapable of operating the device(s) for alarm purposes.

(5) For a unit employing a lock-in alarm feature, automatic transfer shall be provided from alarm to a trouble condition.

(6) At the battery condition at which a trouble signal is obtained, the unit shall be capable of producing a fire alarm signal for at least 4 minutes or a carbon monoxide alarm signal for 12 continuous hours, followed by not less than 7 days of trouble signal operation.

(7) The audible trouble signal shall be produced at least once every minute for 7 consecutive days.

(8) The battery shall ~~be nonremovable, or a~~ comply with either of the following:

(9) Be nonremovable.

(10) A noticeable and visible indication shall be displayed when the battery is removed from the unit.

Statement of Problem and Substantiation for Public Input

Changes proposed are to comply with the NFPA MOS.

Submitter Information Verification

Submitter Full Name: Thomas Miller
Organization: Hansen Engineering Services
Affiliation: Chapter 29 MOS Task Group
Street Address:
City:
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Submittal Date: Wed Jun 01 13:47:23 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5078-NFPA 72-2022

Statement: Section 29.9.8 has been rewritten to comply with MoS.

Public Input No. 381-NFPA 72-2022 [Section No. 29.9.9]

29.9.9 Secondary (Standby) Non-Battery Power Source.

Where single-or multi-station alarms, or system-based detectors include a secondary power source (non-battery), the following conditions shall be met:

(1) The secondary power source shall be supervised and shall cause a distinctive audible or visible trouble signal upon depletion or failure.

(2) A distinctive audible trouble signal shall be provided before the power source is incapable of operating the device(s) for alarm purposes.

(3) At a power source condition at which a trouble signal is obtained, the power source shall be capable of producing ~~a fire~~ an audible and/or visible fire alarm signal for at least 4 minutes or ~~a carbon~~ an audible and/or visible carbon monoxide alarm signal for at least 12 continuous hours, followed by not less than 7 days of audible and visible trouble signal operation.

(4) The audible and visible trouble signal shall be produced at least once every minute for 7 consecutive days.

(5) A rechargeable secondary power source shall meet the following criteria:

(6) Be automatically recharged

(7) Be recharged within 4 hours where power is provided from a circuit that can be switched on or off by means other than a circuit breaker or within 48 hours where power is provided from a circuit that cannot be switched on or off by means other than a circuit breaker

Statement of Problem and Substantiation for Public Input

Update provides clarity to the word "signal" since per our definition it can mean many different things. The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 25 16:50:32 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: The recommended text does not provide additional clarity to the requirement. Section

29.9.9 deals with alarms and not detectors. Changing “or” to “and” adds requirements which are not covered by any substantiation. There has been no substantiation provided to support requiring audible and visual notification. Further research that this feature is necessary needs to be provided.

Public Input No. 565-NFPA 72-2022 [Section No. 29.9.9]

29.9.9 Secondary (Standby) Non-Battery Power Source.

Where alarms include a secondary power source (non-battery), all of the following conditions shall be met:

(1) The secondary power source shall be supervised ~~and shall~~ .

(2) The secondary power source shall cause a distinctive audible or visible trouble signal upon depletion or failure.

(3) A distinctive audible trouble signal shall be provided before the power source is incapable of operating the device(s) for alarm purposes.

(4) At a power source condition at which a trouble signal is obtained, the power source shall be capable of producing a fire alarm signal for at least 4 minutes or a carbon monoxide alarm signal for at least 12 continuous hours, followed by not less than 7 days of trouble signal operation.

(5) The audible trouble signal shall be produced at least once every minute for 7 consecutive days.

(6) A rechargeable secondary power source shall meet both of the following criteria:

(7) Be automatically recharged .

(8) Be recharged within 4 hours where power is provided from a circuit that can be switched on or off by means other than a circuit breaker or within 48 hours where power is provided from a circuit that cannot be switched on or off by means other than a circuit breaker .

Statement of Problem and Substantiation for Public Input

Changes proposed are to comply with the NFPA MOS.

Submitter Information Verification

Submitter Full Name: Thomas Miller
Organization: Hansen Engineering Services
Affiliation: Chapter 29 MOS Task Group
Street Address:
City:
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Submittal Date: Wed Jun 01 13:52:35 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5081-NFPA 72-2022
Statement: Section 29.9.9 has been rewritten to comply with MoS.

Public Input No. 385-NFPA 72-2022 [Section No. 29.10.1]

29.10.1 Self-Diagnostic.

Any failure of any nonreliable or short-life component that renders ~~the detector~~ a detection device inoperable shall result in ~~a~~ an audible and visible trouble signal or otherwise be apparent to the occupant of the living unit without the need for test.

Statement of Problem and Substantiation for Public Input

Update defines what kind of signal since our definition has several different meanings. The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 25 17:09:26 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5109-NFPA 72-2022
Statement: The revision to change “the detector” to “a detection device” provides clarity. Audible and visible trouble signals constituted a significant change to the standard which has not been substantiated with any data.

Public Input No. 566-NFPA 72-2022 [Section No. 29.10.2]

29.10.2* Smoke Alarms, System Smoke Detectors, and Other Non-Heat Fire Detectors.

Each device shall ~~detect~~ comply with all of the following:

(1) Detect abnormal quantities of smoke or applicable fire signature~~, shall operate~~ .

(2) Operate in the normal environmental conditions~~, and shall be~~ .

(3) Be in compliance with applicable standards such as UL 217, *Smoke Alarms* or UL 268, *Smoke Detectors for Fire Alarm Systems*~~, or UL 217, *Smoke Alarms*~~ .

Statement of Problem and Substantiation for Public Input

UL 268, Smoke Detectors for Fire Alarm Systems, or

Submitter Information Verification

Submitter Full Name: Thomas Miller
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Affiliation: Chapter 29 MOS Task Group
Street Address:
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Submittal Date: Wed Jun 01 13:56:52 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5247-NFPA 72-2022
Statement: The revision was made to comply with the NFPA Manual of Style and to clarify the text to emphasize the intention. The deleted text is part of the testing and listing standards.

Public Input No. 191-NFPA 72-2022 [Section No. 29.10.3.1]

29.10.3.1*

Each carbon monoxide alarm shall be in compliance with UL 2034, *Single and Multiple Station Carbon Monoxide Alarms*.

29.10.3.1.(1) Each carbon monoxide alarm or carbon monoxide detector installed in an unconditioned room or space shall be tested and listed to the unconditioned space requirements in UL 2034 or UL 2075 .

Statement of Problem and Substantiation for Public Input

With expansion of carbon monoxide protection to additional occupancies in the I-Codes, there may be requirements for coverage in unconditioned spaces. Specific requirements for these spaces are being added to UL 2034 and UL 2075. This change highlights the need to have the appropriate devices used for those locations.

This is the work of a Task Group reviewing updates to the carbon monoxide references in Chapter 29 in light of the expansion of the I-Code requirements.

Submitter Information Verification

Submitter Full Name: Wendy Gifford
Organization: Consultant
Street Address:
City:
State:
Zip:
Submittal Date: Wed Mar 23 15:06:47 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5366-NFPA 72-2022

Statement: The first revision is consistent with a change to the 2024 edition of the International Fire Code/International Building Code that will allow carbon monoxide alarms to be installed inside rooms or spaces within commercial buildings that are remote from dwelling units and sleeping units.

Public Input No. 567-NFPA 72-2022 [Section No. 29.10.3.2]

29.10.3.2

Each ~~carbon monoxide detector shall be in compliance with UL 2075, *Gas and Vapor Detectors and Sensors* , and shall meet the~~ detection device shall comply with one of the following:

(1) Meet the sensitivity testing and alarm thresholds of UL 2034, *Single and Multiple Station Carbon Monoxide Alarms*.

(2) Be in compliance with UL 2075, *Gas and Vapor Detectors and Sensors.*

Statement of Problem and Substantiation for Public Input

carbon monoxide detector shall be in compliance with UL 2075, Gas and Vapor Detectors and Sensors, and

Submitter Information Verification

Submitter Full Name: Thomas Miller
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Street Address:
City:
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Zip:
Submittal Date: Wed Jun 01 14:03:04 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5248-NFPA 72-2022
Statement: The revision is made to comply with the NFPA Manual of Style and to clarify the text to emphasize the intention.

Public Input No. 24-NFPA 72-2021 [Section No. 29.10.4]

29.10.4* Heat ~~Detectors~~ Alarms and Heat ~~Alarms~~ Detectors .

29.10.4.1

Each heat alarm and heat detector~~ and heat alarm~~ , including a heat ~~detector or~~ alarm or heat ~~alarm integrally~~ detector integrally mounted on a smoke alarm or smoke detector~~ or smoke alarm~~ , shall detect abnormally high temperature or rate-of-temperature rise, and all such detectors shall be listed for not less than 50 ft (15.2 m) spacing.

29.10.4.2*

Fixed-temperature ~~detectors or alarms shall~~ alarms or detectors shall have a temperature rating at least 25ºF (14ºC) above the normal ambient temperature and shall not be rated 50ºF (28ºC) higher than the maximum anticipated ambient temperature in the room or space where installed.

Statement of Problem and Substantiation for Public Input

Aligns stating Alarm requirements before Detector requirements

Submitter Information Verification

Submitter Full Name: George Bish
Organization: Amazon/Ring Protect Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Mon Nov 22 09:45:59 EST 2021
Committee: SIG-HOU

Committee Statement

Resolution: FR-5121-NFPA 72-2022
Statement: “Alarm” and “detector” have been realigned sequentially for consistency throughout the standard. Additional changes have been made for MoS compliance. The revision associates the annex material with the related requirement in Section 29.10.4.1.

Public Input No. 568-NFPA 72-2022 [Section No. 29.10.4.1]

29.10.4.1

Each heat alarm and heat detector ~~and heat alarm~~ , including a heat ~~detector or~~ alarm or heat ~~alarm integrally~~ detector integrally mounted on a smoke alarm or smoke detector ~~or smoke alarm~~ , shall ~~detect~~ comply with both of the following:

(1) Detect abnormally high temperature or rate-of-temperature rise~~, and all such detectors shall be~~ .

(2) Be listed for not less than ~~50 ft (15.2 m) spacing.~~ 50 ft spacing.

Statement of Problem and Substantiation for Public Input

Changes proposed are to comply with the NFPA MOS.

Submitter Information Verification

Submitter Full Name: Thomas Miller
Organization: Hansen Engineering Services
Affiliation: Chapter 29 MOS Task Group
Street Address:
City:
State:
Zip:
Submittal Date: Wed Jun 01 14:07:46 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5121-NFPA 72-2022
Statement: “Alarm” and “detector” have been realigned sequentially for consistency throughout the standard. Additional changes have been made for MoS compliance. The revision associates the annex material with the related requirement in Section 29.10.4.1.

Public Input No. 570-NFPA 72-2022 [Section No. 29.10.4.2]

29.10.4.2*

Fixed-temperature alarms or detectors ~~or alarms shall have~~ shall comply with both of the following:

(1) Have a temperature rating at least ~~25ºF (14ºC) above~~ 25ºF above the normal ambient temperature~~ and shall not~~ .

(2) Not be rated 50ºF ~~(28ºC)~~ higher than the maximum anticipated ambient temperature in the room or space where installed.

Statement of Problem and Substantiation for Public Input

Changes proposed are to comply with the NFPA MOS.

Submitter Information Verification

Submitter Full Name: Thomas Miller
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Affiliation: Chapter 29 MOS Task Group
Street Address:
City:
State:
Zip:
Submittal Date: Wed Jun 01 14:13:06 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5121-NFPA 72-2022
Statement: “Alarm” and “detector” have been realigned sequentially for consistency throughout the standard. Additional changes have been made for MoS compliance. The revision associates the annex material with the related requirement in Section 29.10.4.1.

Public Input No. 386-NFPA 72-2022 [Section No. 29.10.6.5]

29.10.6.5

A means for silencing the audible trouble ~~notification appliance(s)~~ signal shall be permitted only if the following conditions are satisfied:

(1) The means is key-operated or located within a locked enclosure ~~,~~ or arranged to provide equivalent protection against unauthorized use.

(2) The means automatically transfers the audible trouble ~~indication to an identified lamp or other acceptable visible indicator~~ signal to a visible trouble signal , and the visible ~~indication~~ signal persists until the trouble condition has been corrected.

Statement of Problem and Substantiation for Public Input

The update adds clarity and uniformity to the section. The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
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Submittal Date: Wed May 25 17:20:04 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: The current language is not ambiguous and is sufficient. It calls out notification appliances, and the action of silencing is limited to audible devices.

Public Input No. 387-NFPA 72-2022 [Section No. 29.10.6.7]

29.10.6.7

Initiating devices and notification appliances connected to ~~household~~ a control ~~units shall~~ unit shall be monitored for integrity so that the occurrence of a single open or single ground fault in the interconnection, which prevents normal operation of the interconnected devices, is indicated by a distinctive audible and visible trouble signal.

Statement of Problem and Substantiation for Public Input

This section is for Control Units. The word "household" is not used anywhere else in this section. The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

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Street Address:
City:
State:
Zip:
Submittal Date: Wed May 25 17:32:42 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: The term “household alarm systems” is utilized throughout Chapter 29 as well as other chapters within this code and making this change would not provide any clarity. The addition of audible and visual alarm requirements was deemed a substantial change to the standard.

Public Input No. 389-NFPA 72-2022 [Section No. 29.10.6.9]

29.10.6.9

Any data exchange between the control unit and separate independent devices via remote access shall not compromise the integrity of the ~~fire alarm~~ household signaling system.

Statement of Problem and Substantiation for Public Input

This section is dealing with control units that can be connected to fire and carbon monoxide detection devices. We should not limit this to fire alarms. The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 25 17:36:19 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5133-NFPA 72-2022
Statement: The first revision expands the requirement to cover all alarm systems.

Public Input No. 391-NFPA 72-2022 [Section No. 29.10.6.10]

29.10.6.10

Remote resetting and silencing of a control unit from other than the protected premises shall be inhibited for a minimum of 4 minutes from the initial activation of ~~the~~ any fire or carbon monoxide alarm signal.

Statement of Problem and Substantiation for Public Input

This should apply to all life safety alarm signals, not just fire. This is a household signaling system. The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 25 17:56:31 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5144-NFPA 72-2022
Statement: The first revision expands the requirement to apply to fire and CO alarm signals.

Public Input No. 392-NFPA 72-2022 [Section No. 29.10.6.11]

29.10.6.11

Each ~~electrical carbon monoxide detection system~~ control unit shall have an integral test means to allow testing of the detection devices and the system operation.

Statement of Problem and Substantiation for Public Input

Section 29.10.6 deals with "Control Units". As written, section 29.10.6.11 deals with electrical carbon monoxide systems. That does not fit in this section. The other option is to remove 29.10.6.11 completely. The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 25 18:03:51 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5148-NFPA 72-2022
Statement: The requirement adds a mandate to equip control units to have an integral test means which is not currently required by the product certification standard.

Public Input No. 554-NFPA 72-2022 [New Section after 29.10.7.4]

29.10.7.4.1

Where common audible notification appliances are used, multiple distinctive signals shall not be required to be generated simultaneously as long as all active audible notification appliances on a given circuit generate the highest priority audible notification signal active for that circuit.

Statement of Problem and Substantiation for Public Input

In multi-unit residential occupancies, it is common to install system detectors paired with sounder bases as a means to meet the requirements for single- and multiple- station alarms and household signaling systems for each residential unit. In combination systems, these sounder bases are used to sound the Temporal Code Three (T3) audible tone in the event of a fire detector (smoke or heat) activation, or the Temporal Code Four (T4) tone in the event of a carbon monoxide (CO) detector activation. Often, these systems are configured with a tone generator producing the T3 or T4 tone on the Notification Appliance Circuit (NAC) serving these sounder bases (rather than the individual sounder bases generating the tone themselves).

The NAC can only carry a single tone (either T3 or T4 at a given time). In the event of a CO detector activation, the associated sounder base will sound the T4 tone; in the event of a fire detector activation, the associated sounder base will sound the T3 tone. However, in the unlikely event of a CO detector activation in one unit, followed by a fire detector activation in another unit, sounder bases within both units would sound the T3 tone (assuming that both sounder bases are on the same NAC). The intent of this code change proposal is to clarify that this is acceptable.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 547-NFPA 72-2022 [New Section after 29.5.4]	Public Input No. 547 (new section after 29.5.4) and 554 (new section after 29.10.7.1) are both proposed to clarify intent relative to a common problem/substantiation.

Submitter Information Verification

Submitter Full Name: Maxwell French
Organization: Code Red Consultants
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 22:22:13 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: The hierarchy of signals is covered by the requirements in 29.10.7.2 and 29.10.7.7. The proposed text is beyond the scope of Chapter 29.

Public Input No. 395-NFPA 72-2022 [Section No. 29.10.7.4]

29.10.7.4

The use of a common audible notification appliance shall be permitted as long as ~~distinctive signals are generated~~ fire devices activate a T-3 signal and carbon monoxide devices activate a T-4 signal .

Statement of Problem and Substantiation for Public Input

Section 29.5 defines the required signals for fire and carbon monoxide. This removes any doubt of what distinct signal is supposed to be produced. The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 25 18:09:55 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5152-NFPA 72-2022
Statement: The revision identifies the specific distinctive signals that are required for fire devices and carbon monoxide devices.

Public Input No. 396-NFPA 72-2022 [Section No. 29.10.7.5]

29.10.7.5

Faults in other systems or components shall not affect the operation of the fire alarm system or carbon monoxide alarm system .

Statement of Problem and Substantiation for Public Input

Faults in other systems or components should not interfere with any life safety systems including fire and carbon monoxide. The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 25 18:15:40 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5155-NFPA 72-2022
Statement: The first revision expands the requirement to apply to CO systems. The terminology has been revised for consistency with existing definitions.

Public Input No. 405-NFPA 72-2022 [Section No. 29.10.7.8.2]

29.10.7.8.2

Single- or multiple-station smoke alarms and carbon monoxide alarms shall be permitted to be connected to ~~system control equipment~~ a control unit located within the dwelling unit.

Statement of Problem and Substantiation for Public Input

Single- and multi-station carbon monoxide alarms should also be allowed. Changed to a household signaling system control unit since that what we are referring to. The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 25 19:04:48 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5158-NFPA 72-2022
Statement: The first revision expands the requirement to apply to CO alarms and amends “control equipment” to “control unit” for specificity of application.

Public Input No. 407-NFPA 72-2022 [Section No. 29.10.7.8.3]

29.10.7.8.3

When single- or multiple-station alarms are connected to a control unit , the following shall occur:

(1) The actuation of a single- or multiple-station smoke ~~alarm shall initiate an alarm signal at the system control equipment~~ alarm shall initiate a fire alarm signal at the control unit located within the dwelling unit.

(2) The actuation of a single- or multiple-station carbon monoxide alarm shall initiate a carbon monoxide alarm signal at the control unit located within the dwelling unit.

Statement of Problem and Substantiation for Public Input

Adds clarity and consistency. Adds carbon monoxide to the mix. The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 25 19:11:49 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5159-NFPA 72-2022
Statement: The first revision expands the requirement to apply to CO alarms and has been structured for MoS compliance.

Public Input No. 409-NFPA 72-2022 [Section No. 29.10.7.8.4]

29.10.7.8.4

A sprinkler waterflow fire alarm initiating device shall be permitted to be connected to the multiple-station alarms or ~~household fire alarm system~~ control unit to actuate ~~an alarm~~ a fire alarm signal.

Statement of Problem and Substantiation for Public Input

The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 25 19:22:51 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5162-NFPA 72-2022
Statement: The first revision clarifies the requirement to specify that fire sprinkler waterflow alarm initiating devices are required to initiate a fire alarm signal.

Public Input No. 410-NFPA 72-2022 [Section No. 29.10.8.1 [Excluding any Sub-Sections]]

Household fire alarm and carbon monoxide systems utilizing low-power wireless transmission of signals within the protected dwelling unit shall comply with the requirements of Section 23.16, except as modified by 29.10.8.1.1.

Statement of Problem and Substantiation for Public Input

Added in carbon monoxide since it is not addressed and is part if current life safety systems. The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 26 09:14:42 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5167-NFPA 72-2022
Statement: The first revision expands the requirement to apply to CO detection systems.

Public Input No. 1-NFPA 72-2021 [Section No. 29.10.8.1.1]

29.10.8.1.1

The requirements of 23.16.4.2 shall not apply where periodic monitoring for integrity complies with all of the following:

(1) Each low-power transmitter/transceiver shall transmit check-in signals at intervals not exceeding 80 minutes.

(2) Any transmission interruption between a low-power radio transmitter/transceiver and the receiver/~~fire alarm~~ control unit exceeding 4 hours shall cause a latching audible and visible trouble signal at the ~~household fire alarm~~ control unit ~~/operator interface~~ and annunciator(s) .

(3) Low-power transmitters/transceivers shall be limited to serving a single initiating device; however, a single initiating device shall be permitted to ~~send~~ transmit multiple types of alarm signals.

(4) Redundant retransmission devices (repeaters) shall be provided such that disconnecting or failure of any single retransmission device (repeater) does not interrupt communications between any low-power transmitter/transceiver and the receiver/~~fire alarm~~ control unit.

Statement of Problem and Substantiation for Public Input

Update adds uniformity and consistency to Chapter 29 and section 29.10.8. The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Tue Nov 02 13:29:01 EDT 2021
Committee: SIG-HOU

Committee Statement

Resolution: The substantiation does not support expanding the requirement to specify both audible and visible latching trouble signals.

Public Input No. 571-NFPA 72-2022 [Section No. 29.10.8.1.1]

29.10.8.1.1

The requirements of 23.16.4.2 shall not apply where periodic monitoring for integrity complies with all of the following:

(1) Each low-power transmitter/transceiver shall transmit check-in signals at intervals not exceeding 80 minutes.

(2) Any transmission interruption between a low-power radio transmitter/transceiver and the receiver/fire alarm control unit exceeding 4 hours shall cause a latching trouble signal at the household fire alarm control unit/operator interface.

(3) Low-power transmitters/transceivers shall be limited to serving a single initiating device; however, ~~a single~~ the initiating device ~~shall be~~ is permitted to send multiple types of alarm signals.

(4) Redundant retransmission devices (repeaters) shall be provided such that disconnecting or failure of any single retransmission device (repeater) does not interrupt communications between any low-power transmitter/transceiver and the receiver/fire alarm control unit.

Statement of Problem and Substantiation for Public Input

Changes proposed are to comply with the NFPA MOS.

Submitter Information Verification

Submitter Full Name: Thomas Miller
Organization: Hansen Engineering Services
Affiliation: Chapter 29 MOS Task Group
Street Address:
City:
State:
Zip:
Submittal Date: Wed Jun 01 14:17:42 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5173-NFPA 72-2022
Statement: The first revision makes a an editorial change in list item (3).

Public Input No. 411-NFPA 72-2022 [Section No. 29.10.9.1 [Excluding any Sub-Sections]]

Household ~~alarm~~ signaling systems shall be permitted to be supervised by a supervising station or by a public emergency alarm reporting system.

Statement of Problem and Substantiation for Public Input

Chapter 29 refers to Household Signaling Systems, not "alarm" systems. The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 26 10:04:22 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: The term “household alarm systems” is utilized throughout Chapter 29 as well as other chapters within this code and making this change would not provide any clarity or substantive change.

Public Input No. 412-NFPA 72-2022 [Section No. 29.10.9.1.1]

29.10.9.1.1

Transmission of signals from single- and multiple-station alarms to a constantly attended supervising station or public emergency alarm reporting system shall be processed by a household ~~alarm system~~ signaling system .

Statement of Problem and Substantiation for Public Input

Chapter 29 refers to Household Signaling Systems, not "alarm" systems. The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 26 10:17:44 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: The term “household alarm systems” is utilized throughout Chapter 29 as well as other chapters within this code and making this change would not provide any clarity or substantive change.

Public Input No. 413-NFPA 72-2022 [Section No. 29.10.9.1.2]

29.10.9.1.2

Where off-premises supervision is provided, the household signaling system shall transmit at least a general alarm signal.

Statement of Problem and Substantiation for Public Input

Chapter 29 refers to Household Signaling Systems, not "systems". The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 26 10:20:02 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: The affected text is a subsection of 29.10.9 which clearly identifies the types of systems covered by these requirements.

Public Input No. 261-NFPA 72-2022 [Section No. 29.10.9.4]

29.10.9.4

Public emergency alarm reporting systems shall transmit signals to an emergency services communications system meeting the requirements of ~~NFPA 1221~~ NFPA 1225 .

Statement of Problem and Substantiation for Public Input

As part of the Emergency Response and Responder Safety Document Consolidation Plan (consolidation plan) as approved by the NFPA Standards Council, NFPA 1221 Standard has been combined into a new consolidated Standard, NFPA 1225.

Submitter Information Verification

Submitter Full Name: Rodger Reiswig
Organization: Johnson Controls
Street Address:
City:
State:
Zip:
Submittal Date: Fri Apr 29 08:55:53 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5090-NFPA 72-2022
Statement: The first revision references the new NFPA 1225 standard after consolidation of NFPA 1221 as part of the Emergency Response and Responder Safety Consolidation Plan.

Public Input No. 557-NFPA 72-2022 [New Section after 29.10.9.7]

TITLE OF NEW CONTENT

CO Alarm disposition

29.10.9.8 Upon receipt of a household carbon monoxide alarm signal, supervising station shall perform the following actions in the order listed:

29.10.9.8.1 If someone answers the notification call

(1) The occupants shall be instructed to leave the premises and move to fresh air.

(2) The supervising station shall ask the following questions of the individual answering the telephone:

a) Are all the occupants accounted for and are they out of the premises?

b) Is anyone nauseous, ill, have a headache or dizzy?

(3) The supervising station shall instruct the occupants not to re-enter the premises until cleared by the responding response agency.

(4) The supervising station shall then immediately call the appropriate response agency and inform them of the alarm. The emergency response agency shall be informed that the occupants answered the telephone, were told to leave the premises and of any reported symptoms.

26.2.4.1.4.2 If no one answers the notification call :

The supervising station shall then immediately call the appropriate response agency and report that a CO alarm was received from a particular premises and were unable to reach an occupant.

26.2.4.1.4.3 In the case of 26.2.4.1.4.2, after dispatch, the supervising station shall contact the responsible party(ies) in accordance with the notification plan

Statement of Problem and Substantiation for Public Input

Provides guidance to the supervising station when the co alarm is activated within the protected premise. Moving occupants to a location where co is not present prior to dispatching authorities may save lives.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 556-NFPA 72-2022 [Section No. 26.2.4.1.4]	similar notification response if an alarm is activated within protected premise

Submitter Information Verification

Submitter Full Name: Richard Simpson
Organization: Vector Security Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Wed Jun 01 06:22:51 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: The technical committee resolves this public input because the information regarding how emergency responders should handle CO calls, including guidelines for dispatchers, is already included in a CPSC document referenced in Annex H.2.

Public Input No. 414-NFPA 72-2022 [Section No. 29.10.9.8]

29.10.9.8

Household ~~fire alarm systems~~ signaling systems shall be programmed by the manufacturer to generate at least a monthly test of the communication or transmission means.

Statement of Problem and Substantiation for Public Input

Chapter 29 refers to Household Signaling Systems, not "fire alarm" systems. The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 26 10:23:28 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: The term “household fire alarm systems” is utilized throughout Chapter 29 as well as other Chapters within this code and making this change would not provide any clarity or substantive change.

Public Input No. 415-NFPA 72-2022 [Section No. 29.10.9.9]

29.10.9.9

The activation of a keypad/touchscreen fire alarm signal shall require a manual operation of two simultaneous or sequential operations.

Statement of Problem and Substantiation for Public Input

Updating terminology since most household signaling systems now utilize touchscreens. The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 26 10:33:25 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5177-NFPA 72-2022
Statement: The first revision recognizes all types of user interface devices/equipment covered by this requirement.

Public Input No. 23-NFPA 72-2021 [Section No. 29.10.9.10]

29.10.9.10

Communications methods shall comply with 29.10.9.10.1 through 29.10.9.10.~~7~~ 9 .

29.10.9.10.1

Where a digital alarm communicator transmitter (DACT) is used, the DACT serving the protected premises shall only require a single ~~telephone line and shall only require a call to a single digital alarm communicator receiver (DACR) number.~~ communication technology path. (as newly defined in PI# 88-NFPA 72-2022)

29.10.9.10.2

Where a DACT is used, the DACT test signals shall be transmitted ~~at least monthly~~ once every 24 hours .

29.10.9.10.3

Where ~~a communication or transmission means other than DACT~~ a DACT is used, only a single communication technology ~~and~~ path shall be required to serve the protected premises.

29.10.9.10.4

Where a communication ~~or transmission means other than DACT~~ technology path is used, all equipment necessary to transmit an alarm signal shall be provided with a minimum of 24 hours of secondary power capacity and shall report a trouble condition indicating loss of primary power.

29.10.9.10.5

Failure of the communication path ~~referenced in 29.10.9.10.3~~ shall be annunciated at the supervising station ~~and at the protected premises~~ within ~~not~~ no more than ~~7 days of the failure~~ 24 hours .

29.10.9.10.6

~~A dedicated cellular telephone connection shall be permitted to be used as a single means to transmit alarms to a constantly attended remote monitoring location~~

Failure of the communication path shall be annunciated at the protected premises within no more than 24 hours .

29.10.9.10.~~7~~ 8

Transmission devices connected to the supervising station shall be in compliance with applicable standards such as UL 985, *Household Fire Warning System Units*.

29.10.9.10.~~8~~ 9

Transmission devices connected to the supervising station sharing on-premises equipment shall be listed as communications or information technology equipment.

Statement of Problem and Substantiation for Public Input

A new definition of DACT has been submitted to mean only the transmitter and not the entire communication technology path. A new definition for "Communication Technology Path" has also been submitted which includes Cellular, IP, Radio or other approved means.

The use of new technologies has created a need for a more frequent test timer such as internet or cellular communications which may be less stable in particular such as in rural setting. To stay

consistent with language used in other chapters and for clarity a 24 hour test timer should be implemented.

Submitter Information Verification

Submitter Full Name: Riley Fields
Organization: Ring Protect Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Thu Nov 18 11:32:46 EST 2021
Committee: SIG-HOU

Committee Statement

Resolution: The technical committee resolves this public input because the submitter has not provided data or evidence to support why a monthly timer for DACT test signals is inadequate and a 24-hour timer for communication paths other than standard telephone lines is necessary.

Public Input No. 5-NFPA 72-2021 [Section No. 29.10.9.10.1]

29.10.9.10.1

Where a digital alarm communicator transmitter (DACT) is used, the DACT serving the protected premises shall ~~only require a single telephone line and shall only require a call to a single~~ comply with both of the following:

(1) Require one telephone line.

(2) Require a call to one digital alarm communicator receiver (DACR) number.

Statement of Problem and Substantiation for Public Input

Changes proposed to comply with the NFPA MOS.

Submitter Information Verification

Submitter Full Name: Thomas Miller
Organization: Hansen Engineering Services
Affiliation: Chapter 29 MOS Task Group
Street Address:
City:
State:
Zip:
Submittal Date: Fri Nov 05 16:52:44 EDT 2021
Committee: SIG-HOU

Committee Statement

Resolution: FR-5249-NFPA 72-2022
Statement: The first revision is made for compliance with the NFPA Manual of Style.

Public Input No. 6-NFPA 72-2021 [Section No. 29.10.9.10.4]

29.10.9.10.4

Where a communication or transmission means other than DACT is used, all equipment necessary to transmit an alarm signal shall ~~be~~ comply with both of the following:

(1) Be provided with a minimum of ~~24 hours~~ 24 hours of secondary power capacity~~ and shall report~~ .

(2) Report a trouble condition indicating loss of primary power.

Statement of Problem and Substantiation for Public Input

Changes proposed to comply with the NFPA MOS.

Submitter Information Verification

Submitter Full Name: Thomas Miller
Organization: Hansen Engineering Services
Affiliation: Chapter 29 MOS Task Group
Street Address:
City:
State:
Zip:
Submittal Date: Fri Nov 05 16:59:31 EDT 2021
Committee: SIG-HOU

Committee Statement

Resolution: FR-5250-NFPA 72-2022
Statement: The first revision is made for compliance with the NFPA Manual of Style.

Public Input No. 22-NFPA 72-2021 [Section No. 29.10.10]

29.10.10 Cybersecurity.

29.10.10. 1

All control units shall comply with section 11. 1 Cybersecurity.

29.10.10.2 *

All control units shall be designed for cybersecurity as determined by the manufacturer.

29.10.10.2 3

All devices that are connected wirelessly to a control unit and rely on the control unit for occupant notification activation shall not diminish the cybersecurity of the control unit.

29.10.10.3 – 4

All system or software updates required or initiated by the manufacturer shall not diminish the cybersecurity of the control unit.

29.10.10.4 5 *

All alarms that use IP or cellular communication shall be designed for cybersecurity as determined by the manufacturer.

Statement of Problem and Substantiation for Public Input

Chapter 11 is dedicated to Cybersecurity which is a complex subject and I believe its evolution in this standard will most likely take place in Chapter 11. By referencing the requirements of Chapter 11, in Chapter 29 section 29.10.10 will not get overlooked.

Submitter Information Verification

Submitter Full Name: Ty McCurdy
Organization: Ring Protect Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Thu Nov 18 10:56:19 EST 2021
Committee: SIG-HOU

Committee Statement

Resolution: Currently Section 11.1 does not provide any specific requirements on cybersecurity for this type of equipment.

Public Input No. 417-NFPA 72-2022 [Section No. 29.10.10.2]

29.10.10.2

All ~~devices~~ equipment that ~~are~~ is connected wirelessly to a control unit and rely on the control unit for occupant notification activation shall not diminish the cybersecurity of the control unit.

Statement of Problem and Substantiation for Public Input

The word "equipment" is used throughout Chapter 29, not "devices". This adds consistency to Chapter 29. See sections 29.11.1.1 and 29.11.1.3 to list a few. The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 26 10:54:01 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: The recommended revision does not provide additional clarity to the requirement. The term “devices” is used throughout Chapter 29.

Public Input No. 418-NFPA 72-2022 [Section No. 29.10.10.3]

29.10.10.3

All ~~system or~~ equipment or software updates required or initiated by the manufacturer shall not diminish the cybersecurity of the control unit.

Statement of Problem and Substantiation for Public Input

The word "equipment" is used throughout Chapter 29. The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 26 10:58:55 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: The term “system” is clear in the context of this requirement.

Public Input No. 419-NFPA 72-2022 [Section No. 29.10.10.4]

29.10.10.4*

All ~~alarms~~ household signaling system equipment that use IP or cellular communication shall be designed for cybersecurity as determined by the manufacturer.

Statement of Problem and Substantiation for Public Input

The update adds clarity. The word "alarms" is very vague. The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 26 11:01:36 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: The recommended revision changes the application of this requirement which is specifically intended to apply to alarms.

Public Input No. 420-NFPA 72-2022 [Section No. 29.11.1.2]

29.11.1.2

All ~~devices~~ equipment shall be so located and mounted that accidental operation is not caused by jarring or vibration.

Statement of Problem and Substantiation for Public Input

The word "equipment" is used throughout Chapter 29, not "devices". The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 26 11:06:36 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: Equipment is an assembly/compilation of devices. This clause is specifically intended to reference devices, not the equipment. In addition, the word “device” and/or “devices” are used extensively throughout Chapter 29.

Public Input No. 21-NFPA 72-2021 [Section No. 29.11.1.4]

29.11.1.4

The ~~supplier~~ Manufacturer or installing contractor shall provide the system owner or other responsible parties with the following:

(1) An instruction booklet illustrating typical installation layouts

(2) Instruction charts describing the operation, method, and frequency of testing and maintenance of the warning equipment

(3) Printed information for establishing an emergency evacuation plan

(4) Printed information to inform system owners where they can obtain repair or replacement service, and where and how parts requiring regular replacement, such as batteries or bulbs, can be obtained within 2 weeks

(5) Information noting both of the following:

(6) Unless otherwise recommended by the manufacturer's published instructions, smoke alarms shall be replaced when they fail to respond to tests.

(7) Smoke alarms shall not remain in service longer than 10 years from the date of manufacture unless otherwise provided by manufacturer's published instructions.

(8) The instructions required in Section 29.14

Statement of Problem and Substantiation for Public Input

Supplier can be anyone from Home Depot,Best Buy,ADI. They have no control over what documents are included in the manufacturers sealed package. By changing to Manufacturer it clarifies responsible parties.

Submitter Information Verification

Submitter Full Name: Michael G. Slossar
Organization: Ring Protect Inc,.
Affiliation: None
Street Address:
City:
State:
Zip:
Submittal Date: Thu Nov 18 10:33:14 EST 2021
Committee: SIG-HOU

Committee Statement

Resolution: The end-product manufacturer should not be the supplier of the required documents therefore, a more accurate word to use is “supplier”.

Public Input No. 421-NFPA 72-2022 [Section No. 29.11.1.4]

29.11.1.4

The supplier or installing contractor shall provide the system owner or other responsible parties with the following:

(1) An instruction booklet illustrating typical installation layouts

(2) Instruction charts describing the operation, method, and frequency of testing and maintenance of the warning equipment

(3) Printed information for establishing an emergency evacuation plan

(4) Printed information to inform system owners where they can obtain repair or replacement service, and where and how parts requiring regular replacement, such as batteries or bulbs, can be obtained within 2 weeks

(5) Information noting both of the following:

(6) Unless otherwise recommended by the manufacturer's published instructions, smoke and carbon monoxide alarms shall be replaced when they fail to respond to tests.

(7) Smoke and carbon monoxide alarms shall not remain in service longer than 10 years from the date of manufacture unless otherwise provided by manufacturer's published instructions.

(8) The instructions required in Section 29.14

Statement of Problem and Substantiation for Public Input

Added in carbon monoxide since this would also apply to that equipment. The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 26 11:13:52 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5219-NFPA 72-2022

Statement: The revision aligns with the Manual of Style (MOS) by making sure that all requirements are met by separating them into two sections, 29.11.1.4.1 and 29.11.1.4.2. Adding carbon monoxide alarms to this section will add uniformity and consistency and these criteria should apply to carbon monoxide alarms.

Public Input No. 8-NFPA 72-2021 [Section No. 29.11.1.4]

29.11.1.4

The supplier or installing contractor shall comply with 29.11.1.4.1 and 29.11.1.4.2.

29.11.1.4.1 The supplier or installing contractor shall provide the system owner or other responsible parties with the following:

(1) An instruction booklet illustrating typical installation layouts.

(2) Instruction charts describing the operation, method, and frequency of testing and maintenance of the warning equipment.

(3) Printed information for establishing an emergency evacuation plan.

(4) Printed information to inform system owners where they can obtain repair or replacement service, and where and how parts requiring regular replacement, such as batteries or bulbs, can be obtained within 2 weeks

~~Information noting both of the~~

(5) .

(6) The instructions required in Section 29.14.

29.11.1.4.2 The supplier or installing contractor shall provide the system owner or other responsible parties with the following:

(1) Unless otherwise recommended by the manufacturer's published instructions, smoke alarms shall be replaced when they fail to respond to tests. .

(2) Smoke alarms shall not remain in service longer than 10 years from the date of manufacture unless otherwise provided by manufacturer's published instructions.

(3) ~~The instructions required in Section~~ 29.14

Statement of Problem and Substantiation for Public Input

Changes proposed are to comply with the NFPA MOS.

Submitter Information Verification

Submitter Full Name: Thomas Miller
Organization: Hansen Engineering Services
Affiliation: Chapter 29 MOS Task Group
Street Address:
City:
State:
Zip:
Submittal Date: Fri Nov 05 17:06:02 EDT 2021
Committee: SIG-HOU

Committee Statement

Resolution: FR-5219-NFPA 72-2022

Statement: The revision aligns with the Manual of Style (MOS) by making sure that all requirements are met by separating them into two sections, 29.11.1.4.1 and 29.11.1.4.2. Adding carbon monoxide alarms to this section will add uniformity and consistency and these criteria should apply to carbon monoxide alarms.

Public Input No. 9-NFPA 72-2021 [Section No. 29.11.3 [Excluding any Sub-Sections]]

Smoke alarms, smoke detectors, devices, combination of devices, and equipment shall ~~be~~ comply with the following:

(1) Be installed in accordance with the manufacturer's listing and published instructions~~, and, unless specifically listed for the application, shall comply~~ .

(2) Comply with requirements in 29.11.3.1 through 29.11.3.4.

Statement of Problem and Substantiation for Public Input

Proposed changes to comply with the NFPA MOS.

Submitter Information Verification

Submitter Full Name: Thomas Miller
Organization: Hansen Engineering Services
Affiliation: Chapter 29 MOS Task Group
Street Address:
City:
State:
Zip:
Submittal Date: Fri Nov 05 17:21:55 EDT 2021
Committee: SIG-HOU

Committee Statement

Resolution: FR-5251-NFPA 72-2022
Statement: This revision is made to comply with the NFPA Manual of Style and deletes language that is redundant.

Public Input No. 160-NFPA 72-2022 [Section No. 29.11.3.4]

29.11.3.4 Specific Location Requirements.

The installation of smoke alarms and smoke detectors shall comply with the following requirements:

(1) Smoke alarms and smoke detectors shall not be located where ambient conditions, including humidity and temperature, are outside the limits specified by the manufacturer's published instructions.

(2) Smoke alarms and smoke detectors shall not be located within unfinished attics or garages or in other spaces where temperatures can fall below 40ºF (4.4ºC) or exceed 100ºF (38ºC).

(3)* Where the mounting surface could become considerably warmer or cooler than the room, such as a poorly insulated ceiling below an unfinished attic or an exterior wall, smoke alarms and smoke detectors shall be mounted on an inside wall.

(4)* Smoke alarms and smoke detectors shall not be installed between 10 ft (3.0 m) and 20 ft (6.1 m) along a horizontal flow path from a stationary or fixed cooking appliance unless the devices comply with the following:

(a) Prior to January 1, 2023, smoke alarms and smoke detectors shall be equipped with an alarm silencing means, use photoelectric detection, or be listed for resistance to common nuisance sources from cooking in accordance with the 8th edition of UL 217, *Smoke Alarms,* the 7th edition of UL 268, *Smoke Detectors for Fire Alarm Systems,* or subsequent editions.

(b) Effective January 1, 2023, smoke alarms and smoke detectors shall be listed for resistance to common nuisance sources from cooking in accordance with the 8th edition of UL 217, the 7th edition of UL 268, or subsequent editions.

(5) Smoke alarms and smoke detectors shall not be installed within an area of exclusion determined by a 10 ft (3.0 m) radial distance along a horizontal flow path from a stationary or fixed cooking appliance. When the 10 ft (3.0 m) area of exclusion would prohibit the placement of a smoke alarm or smoke detector required by other sections of this Code, and when the kitchen or cooking area and adjacent spaces have no clear interior partitions or headers, smoke alarms or smoke detectors shall be permitted for installation at a radial distance between 6 ft (1.8 m) and 10 ft (3.0 m) from any stationary or fixed cooking appliance unless the devices comply with the following:

(a) Prior to January 1, 2023, the devices shall use photoelectric detection or be listed for resistance to common nuisance sources from cooking in accordance with the 8th edition of UL 217, the 7th edition of UL 268, or subsequent editions.

(b) Effective January 1, 2023, the devices shall be listed for resistance to common nuisance sources from cooking nuisance alarms in accordance with the 8th edition of UL 217, the 7th edition of UL 268, or subsequent editions.

(6)* Smoke alarms and smoke detectors shall not be installed within a 36 in. (910 mm) horizontal path from a door to a bathroom containing a shower or tub unless listed for installation in close proximity to such locations.

(7) Smoke alarms and smoke detectors shall not be installed within a 36 in. (910 mm) horizontal path from the supply registers of a forced air heating or cooling system and shall be installed outside of the direct airflow from those registers.

(8)* Smoke alarms and smoke detectors shall not be installed within a 36 in. (910 mm) horizontal path from the tip of the blade of a ceiling-suspended (paddle) fan unless the room configuration restricts meeting this requirement.

(9) Where stairs lead to other occupiable levels, a smoke alarm or smoke detector shall be located so that smoke rising in the stairway cannot be prevented from reaching the smoke alarm or smoke detector by an intervening door or obstruction.

(10) For stairways leading up from a basement, smoke alarms or smoke detectors shall be located on the basement ceiling near the entry to the stairs.

(11)* For tray-shaped ceilings (coffered ceilings), smoke alarms and smoke detectors shall be

installed on the highest portion of the ceiling or on the sloped portion of the ceiling within 12 in. (300 mm) vertically down from the highest point.

(12) Smoke alarms and detectors installed in rooms with joists or beams shall comply with the requirements of 17.7.4.2.4.

(13) Heat alarms and detectors installed in rooms with joists or beams shall comply with the requirements of 17.6.3.

Additional Proposed Changes

File Name	Description	Approved
TIA_72_22_3.pdf		

Statement of Problem and Substantiation for Public Input

NOTE: This public input originates from Tentative Interim Amendment No. 22-3 (Log 1568) issued by the Standards Council on August 26, 2021 and per the NFPA Regs., needs to be reconsidered by the Technical Committee for the next edition of the Document.

SUBSTANTIATION:
Underwriters Laboratories has moved the UL217 and UL268 effective dates to June 30, 2022. This creates a conflict in the 2022 Draft edition of NFPA 72 Chapter 29 installation requirements. The current installation date is May 1, 2022. This date must now be adjusted to reflect the change in the effective date of the listing standard to allow manufacturers to meet the new listing requirements and provide product to the marketplace.

Emergency Nature:
The NFPA Standard contains a conflict within the NFPA Standard or within another NFPA Standard. The proposed TIA intends to accomplish a recognition of an advance in the art of safeguarding property or life where an alternative method is not in current use or is unavailable to the public. The current situation presented by the COVID pandemic is causing significant delays in getting products through the UL listing process. If the date remains as currently drafted, it will conflict with the new UL compliance date. Due to this fact there will not be sufficient product in the marketplace to support the current date.

Submitter Information Verification

Submitter Full Name: TC on SIG-HOU
Organization: NFPA
Street Address:
City:
State:
Zip:
Submittal Date: Thu Feb 24 17:49:59 EST 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5220-NFPA 72-2022

Statement: As the effective date for UL listing is June 30, 2024, identifying an effective date in NFPA 72, post listing date, is not necessary.

In order to stay consistent with sub-sections 1-11 (1-9 new) of Section 29.11.3.4, adding “smoke” before detectors in sub-section 12 (No. 10 new) was added for consistency.

Item 11, regarding heat alarm and detectors, was removed from 29.11.3 since this section deals with smoke alarm and smoke detectors and belongs in 29.11.4.

Public Input No. 251-NFPA 72-2022 [Section No. 29.11.3.4]

29.11.3.4 Specific Location Requirements.

The installation of smoke alarms and smoke detectors shall comply with the following requirements:

(1) Smoke alarms and smoke detectors shall not be located where ambient conditions, including humidity and temperature, are outside the limits specified by the manufacturer's published instructions.

(2) Smoke alarms and smoke detectors shall not be located within unfinished attics or garages or in other spaces where temperatures can fall below 40ºF (4.4ºC) or exceed 100ºF (38ºC).

(3)* Where the mounting surface could become considerably warmer or cooler than the room, such as a poorly insulated ceiling below an unfinished attic or an exterior wall, smoke alarms and smoke detectors shall be mounted on an inside wall.

(4)* Smoke alarms and smoke detectors shall not be installed ~~between 10 ft (3.0 m) and 20 ft (6.1 m) along a horizontal flow path from a stationary or fixed cooking appliance unless the devices comply with the following:~~

(5) ~~Prior to January 1, 2023, smoke alarms and smoke detectors shall be equipped with an alarm silencing means, use photoelectric detection, or be listed for resistance to common nuisance sources from cooking in accordance with the 8th edition of UL 217, *Smoke Alarms,* the 7th edition of UL 268, *Smoke Detectors for Fire Alarm Systems,* or subsequent editions.~~

(6) ~~Effective January 1, 2023, smoke alarms and smoke detectors shall be listed for resistance to common nuisance sources from cooking in accordance with the 8th edition of UL 217, the 7th edition of UL 268, or subsequent editions.~~

~~Smoke alarms and smoke detectors shall not be installed~~

(7) within ~~an area of exclusion determined by~~

(8) a ~~10 ft (3.0 m) radial distance along a horizontal flow path from a stationary or fixed cooking appliance. When the 10 ft (3.0 m) area of exclusion would prohibit the placement of a smoke alarm or smoke detector required by other sections of this Code, and when the kitchen or cooking area and adjacent spaces have no clear interior partitions or headers, smoke alarms or smoke detectors shall be permitted for installation at a radial distance between 6 ft (1.8 m) and 10 ft (3.0 m) from any stationary or fixed cooking appliance unless the devices comply with the following:~~

(9) ~~Prior to January 1, 2023, the devices shall use photoelectric detection or be listed for resistance to common nuisance sources from cooking in accordance with the 8th edition of UL 217, the 7th edition of UL 268, or subsequent editions.~~

(10) ~~Effective January 1, 2023, the devices shall be listed for resistance to common nuisance sources from cooking nuisance alarms in accordance with the 8th edition of UL 217, the 7th edition of UL 268, or subsequent editions.~~

(11)* ~~Smoke alarms and smoke detectors shall not be installed within a~~ 36 in. (910 mm) horizontal path from a door to a bathroom containing a shower or tub unless listed for installation in close proximity to such locations.

(12) Smoke alarms and smoke detectors shall not be installed within a 36 in. (910 mm) horizontal path from the supply registers of a forced air heating or cooling system and shall be installed outside of the direct airflow from those registers.

(13)* Smoke alarms and smoke detectors shall not be installed within a 36 in. (910 mm) horizontal path from the tip of the blade of a ceiling-suspended (paddle) fan unless the room configuration restricts meeting this requirement.

(14) Where stairs lead to other occupiable levels, a smoke alarm or smoke detector shall be

located so that smoke rising in the stairway cannot be prevented from reaching the smoke alarm or smoke detector by an intervening door or obstruction.

(15) For stairways leading up from a basement, smoke alarms or smoke detectors shall be located on the basement ceiling near the entry to the stairs.

(16) For tray-shaped ceilings (coffered ceilings), smoke alarms and smoke detectors shall be installed on the highest portion of the ceiling or on the sloped portion of the ceiling within 12 in. (300 mm) vertically down from the highest point.

(17) Smoke alarms and detectors installed in rooms with joists or beams shall comply with the requirements of 17.7.4.2.4.

(18) Heat alarms and detectors installed in rooms with joists or beams shall comply with the requirements of 17.6.3.

Statement of Problem and Substantiation for Public Input

The UL standards for 217 and 268 have been updated since 2016 and released for manufacturers to create product to be listed to these newer Standards. There has been ample time for the industry to design, list and manufacture these newer detectors and alarms, therefore the effective date in NFPA 72 should be deleted.

Submitter Information Verification

Submitter Full Name: Rodger Reiswig
Organization: Johnson Controls
Street Address:
City:
State:
Zip:
Submittal Date: Wed Apr 27 15:11:35 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5220-NFPA 72-2022

Statement: As the effective date for UL listing is June 30, 2024, identifying an effective date in NFPA 72, post listing date, is not necessary.

In order to stay consistent with sub-sections 1-11 (1-9 new) of Section 29.11.3.4, adding “smoke” before detectors in sub-section 12 (No. 10 new) was added for consistency.

Item 11, regarding heat alarm and detectors, was removed from 29.11.3 since this section deals with smoke alarm and smoke detectors and belongs in 29.11.4.

Public Input No. 423-NFPA 72-2022 [Section No. 29.11.3.4]

29.11.3.4 Specific Location Requirements.

The installation of smoke alarms and smoke detectors shall comply with the following requirements:

(1) Smoke alarms and smoke detectors shall not be located where ambient conditions, including humidity and temperature, are outside the limits specified by the manufacturer's published instructions.

(2) Smoke alarms and smoke detectors shall not be located within unfinished attics or garages or in other spaces where temperatures can fall below 40ºF (4.4ºC) or exceed 100ºF (38ºC).

(3)* Where the mounting surface could become considerably warmer or cooler than the room, such as a poorly insulated ceiling below an unfinished attic or an exterior wall, smoke alarms and smoke detectors shall be mounted on an inside wall.

(4)* Smoke alarms and smoke detectors shall not be installed between 10 ft (3.0 m) and 20 ft (6.1 m) along a horizontal flow path from a stationary or fixed cooking appliance unless the devices comply with the following:

(5) Prior to January 1, 2023, smoke alarms and smoke detectors shall be equipped with an alarm silencing means, use photoelectric detection, or be listed for resistance to common nuisance sources from cooking in accordance with the 8th edition of UL 217, *Smoke Alarms*, the 7th edition of UL 268, *Smoke Detectors for Fire Alarm Systems*, or subsequent editions.

(6) Effective January 1, 2023, smoke alarms and smoke detectors shall be listed for resistance to common nuisance sources from cooking in accordance with the 8th edition of UL 217, the 7th edition of UL 268, or subsequent editions.

(7) Smoke alarms and smoke detectors shall not be installed within an area of exclusion determined by a 10 ft (3.0 m) radial distance along a horizontal flow path from a stationary or fixed cooking appliance. When the 10 ft (3.0 m) area of exclusion would prohibit the placement of a smoke alarm or smoke detector required by other sections of this Code, and when the kitchen or cooking area and adjacent spaces have no clear interior partitions or headers, smoke alarms or smoke detectors shall be permitted for installation at a radial distance between 6 ft (1.8 m) and 10 ft (3.0 m) from any stationary or fixed cooking appliance unless the devices comply with the following:

(a) Prior to January 1, 2023, the devices shall use photoelectric detection or be listed for resistance to common nuisance sources from cooking in accordance with the 8th edition of UL 217, the 7th edition of UL 268, or subsequent editions.

(b) Effective January 1, 2023, the devices shall be listed for resistance to common nuisance sources from cooking nuisance alarms in accordance with the 8th edition of UL 217, the 7th edition of UL 268, or subsequent editions.

(8)* Smoke alarms and smoke detectors shall not be installed within a 36 in. (910 mm) horizontal path from a door to a bathroom containing a shower or tub unless listed for installation in close proximity to such locations.

(9) Smoke alarms and smoke detectors shall not be installed within a 36 in. (910 mm) horizontal path from the supply registers of a forced air heating or cooling system and shall be installed outside of the direct airflow from those registers.

(10)* Smoke alarms and smoke detectors shall not be installed within a 36 in. (910 mm) horizontal path from the tip of the blade of a ceiling-suspended (paddle) fan unless the room configuration restricts meeting this requirement.

(11) Where stairs lead to other occupiable levels, a smoke alarm or smoke detector shall be located so that smoke rising in the stairway cannot be prevented from reaching the smoke alarm or smoke detector by an intervening door or obstruction.

(12) For stairways leading up from a basement, smoke alarms or smoke detectors shall be located on the basement ceiling near the entry to the stairs.

(13) For tray-shaped ceilings (coffered ceilings), smoke alarms and smoke detectors shall be installed on the highest portion of the ceiling or on the sloped portion of the ceiling within 12 in. (300 mm) vertically down from the highest point.

(14) Smoke alarms and ~~detectors~~ smoke detectors installed in rooms with joists or beams shall comply with the requirements of 17.7.4.2.4.

(15) ~~Heat alarms and detectors installed in rooms with joists or beams shall comply with the requirements of 17.6.3~~ .

Statement of Problem and Substantiation for Public Input

Added "smoke" in front of the word detector so line (12) is consistent with all of the other lines prior to it. Removed line (13) and moved into section 29.11.4 since it refers to heat detectors and heat alarms, not smokes. The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 26 12:44:47 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5220-NFPA 72-2022

Statement: As the effective date for UL listing is June 30, 2024, identifying an effective date in NFPA 72, post listing date, is not necessary.

In order to stay consistent with sub-sections 1-11 (1-9 new) of Section 29.11.3.4, adding “smoke” before detectors in sub-section 12 (No. 10 new) was added for consistency.

Item 11, regarding heat alarm and detectors, was removed from 29.11.3 since this section deals with smoke alarm and smoke detectors and belongs in 29.11.4.

Public Input No. 25-NFPA 72-2021 [Section No. 29.11.4]

29.11.4* Heat Alarms and Heat Detectors ~~and Heat Alarms~~ .

29.11.4.1*

On smooth ceilings, heat ~~detectors and~~ alarms and heat ~~alarms shall~~ detectors shall be installed within the strict limitations of their listed spacing.

29.11.4.2*

For sloped ceilings having a rise greater than 1 ft in 8 ft (1 m in 8 m) horizontally, the ~~detector or alarm shall~~ heat alarm or heat detector shall be located within 36 in. (910 mm) of the peak.

29.11.4.3

The spacing of additional heat alarms or heat detectors ~~or alarms~~ , if any, shall be based on a horizontal distance measurement, not on a measurement along the slope of the ceiling.

29.11.4.4*

Heat ~~detectors or alarms shall~~ alarms or heat detectors shall be mounted on the ceiling at least 4 in. (100 mm) from a wall or on a wall with the top of the ~~detector or alarm not~~ heat alarm or heat detector not less than 4 in. (100 mm), nor more than 12 in. (300 mm), below the ceiling.

29.11.4.5

Where the mounting surface could become considerably warmer or cooler than the room, such as a poorly insulated ceiling below an unfinished attic or an exterior wall, the heat alarms or heat detectors ~~or alarms~~ shall be mounted on an inside wall.

29.11.4.6

In rooms with open joists or beams, all ceiling-mounted ~~detectors or alarms shall~~ heat alarms or heat detectors shall be located on the bottom of such joists or beams.

29.11.4.7*

~~Detectors or alarms installed~~ Heat alarms or heat detectors installed on an open-joisted ceiling shall have their smooth ceiling spacing reduced where this spacing is measured at right angles to solid joists; in the case of heat alarms or heat detectors ~~or heat alarms~~ , this spacing shall not exceed one-half of the listed spacing.

Statement of Problem and Substantiation for Public Input

Aligns stating Alarm requirements before Detector requirements. Also added the word heat before alarm and detector for consistency

Submitter Information Verification

Submitter Full Name: George Bish
Organization: Amazon/Ring Protect Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Mon Nov 22 09:55:24 EST 2021
Committee: SIG-HOU

Committee Statement

Resolution: FR-5221-NFPA 72-2022

Statement: The revision aligns alarm requirements before detector requirements and add the word heat before alarm and detector for consistency. Added 29.11.4.8, which was previously in the smoke detector 29.11.3 section, and modified text to be in-line with other sections.

Public Input No. 16-NFPA 72-2021 [Section No. 29.11.4.2]

29.11.4.2*

For sloped ceilings having a rise greater than 1 ft in 8 ft (1 m in 8 m) horizontally, the heat detector or heat alarm shall be located within 36 in. ~~(910 mm)~~ of the peak.

Statement of Problem and Substantiation for Public Input

proposed changes are done to comply with the NFPA Manual of Style

Submitter Information Verification

Submitter Full Name: Thomas Miller
Organization: Hansen Engineering Services
Affiliation: Chapter 29 MOS Task Group
Street Address:
City:
State:
Zip:
Submittal Date: Mon Nov 08 16:59:45 EST 2021
Committee: SIG-HOU

Committee Statement

Resolution: FR-5221-NFPA 72-2022
Statement: The revision aligns alarm requirements before detector requirements and add the word heat before alarm and detector for consistency. Added 29.11.4.8, which was previously in the smoke detector 29.11.3 section, and modified text to be in-line with other sections.

Public Input No. 424-NFPA 72-2022 [Section No. 29.11.4.2]

29.11.4.2*

For sloped ceilings having a rise greater than 1 ft in 8 ft (1 m in 8 m) horizontally, the heat detector or heat alarm shall be located within 36 in. (910 mm) of the peak.

Statement of Problem and Substantiation for Public Input

Added in the word heat to keep section 29.11.4 consistent with section 29.11.3 and the rest of Chapter 29. The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 26 12:51:31 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5221-NFPA 72-2022
Statement: The revision aligns alarm requirements before detector requirements and add the word heat before alarm and detector for consistency. Added 29.11.4.8, which was previously in the smoke detector 29.11.3 section, and modified text to be in-line with other sections.

Public Input No. 425-NFPA 72-2022 [Section No. 29.11.4.2]

29.11.4.2*

For sloped ceilings having a rise greater than 1 ft in 8 ft (1 m in 8 m) horizontally, the heat detector(s) or heat alarm(s) shall be located within 36 in. (910 mm) of the peak.

Statement of Problem and Substantiation for Public Input

Added in the word heat to keep section 29.11.4.1 consistent with section 29.11.3 and the rest of Chapter 29.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 26 12:55:18 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5221-NFPA 72-2022
Statement: The revision aligns alarm requirements before detector requirements and add the word heat before alarm and detector for consistency. Added 29.11.4.8, which was previously in the smoke detector 29.11.3 section, and modified text to be in-line with other sections.

Public Input No. 17-NFPA 72-2021 [Section No. 29.11.4.3]

29.11.4.3

The spacing of additional heat detectors or heat alarms, if any, shall be based on a horizontal distance measurement, not on a measurement along the slope of the ceiling.

Statement of Problem and Substantiation for Public Input

the proposed changes are to comply with the NFPA Manual of Style

Submitter Information Verification

Submitter Full Name: Thomas Miller
Organization: Hansen Engineering Services
Affiliation: Chapter 29 MOS Task Group
Street Address:
City:
State:
Zip:
Submittal Date: Mon Nov 08 17:02:55 EST 2021
Committee: SIG-HOU

Committee Statement

Resolution: FR-5221-NFPA 72-2022
Statement: The revision aligns alarm requirements before detector requirements and add the word heat before alarm and detector for consistency. Added 29.11.4.8, which was previously in the smoke detector 29.11.3 section, and modified text to be in-line with other sections.

Public Input No. 426-NFPA 72-2022 [Section No. 29.11.4.3]

29.11.4.3

The spacing of additional detectors or heat alarms, if any, shall be based on a horizontal distance measurement, not on a measurement along the slope of the ceiling.

Statement of Problem and Substantiation for Public Input

Added in the word heat to keep section 29.11.4.3 consistent with section 29.11.3, 29.4.1 and the rest of Chapter 29. The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 26 12:57:20 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5221-NFPA 72-2022

Statement: The revision aligns alarm requirements before detector requirements and add the word heat before alarm and detector for consistency. Added 29.11.4.8, which was previously in the smoke detector 29.11.3 section, and modified text to be in-line with other sections.

Public Input No. 427-NFPA 72-2022 [Section No. 29.11.4.4]

29.11.4.4*

Heat detectors or heat alarms shall be mounted on the ceiling at least 4 in. (100 mm) from a wall or on a wall with the top of the heat detector or heat alarm not less than 4 in. (100 mm), nor more than 12 in. (300 mm), below the ceiling.

Statement of Problem and Substantiation for Public Input

Added in the word heat to keep section 29.11.4.4 consistent with section 29.11.3, 29.11.4 and the rest of Chapter 29. The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 26 12:58:16 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5221-NFPA 72-2022
Statement: The revision aligns alarm requirements before detector requirements and add the word heat before alarm and detector for consistency. Added 29.11.4.8, which was previously in the smoke detector 29.11.3 section, and modified text to be in-line with other sections.

Public Input No. 18-NFPA 72-2021 [Section No. 29.11.4.5]

29.11.4.5

Where the mounting surface could become considerably warmer or cooler than the room, such as a poorly insulated ceiling below an unfinished attic or an exterior wall, the heat detectors or heat alarms shall be mounted on an inside wall.

Statement of Problem and Substantiation for Public Input

proposed changes are to comply with the NFPA Manual of Style

Submitter Information Verification

Submitter Full Name: Thomas Miller
Organization: Hansen Engineering Services
Affiliation: Chapter 29 MOS Task Group
Street Address:
City:
State:
Zip:
Submittal Date: Mon Nov 08 17:05:15 EST 2021
Committee: SIG-HOU

Committee Statement

Resolution: FR-5221-NFPA 72-2022
Statement: The revision aligns alarm requirements before detector requirements and add the word heat before alarm and detector for consistency. Added 29.11.4.8, which was previously in the smoke detector 29.11.3 section, and modified text to be in-line with other sections.

Public Input No. 428-NFPA 72-2022 [Section No. 29.11.4.5]

29.11.4.5

Where the mounting surface could become considerably warmer or cooler than the room, such as a poorly insulated ceiling below an unfinished attic or an exterior wall, the heat detectors or heat alarms shall be mounted on an inside wall.

Statement of Problem and Substantiation for Public Input

Added in the word heat to keep section 29.11.4.5 consistent with section 29.11.3, 29.4.4.1 and the rest of Chapter 29. The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 26 13:02:56 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5221-NFPA 72-2022
Statement: The revision aligns alarm requirements before detector requirements and add the word heat before alarm and detector for consistency. Added 29.11.4.8, which was previously in the smoke detector 29.11.3 section, and modified text to be in-line with other sections.

Public Input No. 19-NFPA 72-2021 [Section No. 29.11.4.6]

29.11.4.6

In rooms with open joists or beams, all ceiling-mounted heat detectors or heat alarms shall be located on the bottom of such joists or beams.

Statement of Problem and Substantiation for Public Input

proposed changes are to comply with the NFPA Manual of Style

Submitter Information Verification

Submitter Full Name: Thomas Miller
Organization: Hansen Engineering Services
Affiliation: Chapter 29 MOS Task Group
Street Address:
City:
State:
Zip:
Submittal Date: Mon Nov 08 17:07:02 EST 2021
Committee: SIG-HOU

Committee Statement

Resolution: FR-5221-NFPA 72-2022
Statement: The revision aligns alarm requirements before detector requirements and add the word heat before alarm and detector for consistency. Added 29.11.4.8, which was previously in the smoke detector 29.11.3 section, and modified text to be in-line with other sections.

Public Input No. 429-NFPA 72-2022 [Section No. 29.11.4.6]

29.11.4.6

In rooms with open joists or beams, all ceiling-mounted heat detectors or heat alarms shall be located on the bottom of such joists or beams.

Statement of Problem and Substantiation for Public Input

Added in the word heat to keep section 29.11.4.6 consistent with section 29.11.3, 29.11.4.1 and the rest of Chapter 29. The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 26 13:04:12 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5221-NFPA 72-2022
Statement: The revision aligns alarm requirements before detector requirements and add the word heat before alarm and detector for consistency. Added 29.11.4.8, which was previously in the smoke detector 29.11.3 section, and modified text to be in-line with other sections.

Public Input No. 431-NFPA 72-2022 [New Section after 29.11.4.7]

4.11.4.8

Heat detectors and heat alarms installed in rooms with joists or beams shall comply with the requirements of 17.6.3.

Statement of Problem and Substantiation for Public Input

Moved from 29.11.3.4 (13).

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 26 13:09:07 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5221-NFPA 72-2022

Statement: The revision aligns alarm requirements before detector requirements and add the word heat before alarm and detector for consistency. Added 29.11.4.8, which was previously in the smoke detector 29.11.3 section, and modified text to be in-line with other sections.

Public Input No. 10-NFPA 72-2021 [Section No. 29.11.4.7]

29.11.4.7*

~~Detectors~~ Heat alarms or ~~alarms~~ heat detectors installed on an open-joisted ceiling shall comply with both 29.11.4.7.1 and 29.11.4.7.2.

29.11.4.7.1 Heat alarms or heat detectors shall have their smooth ceiling spacing reduced where this spacing is measured at right angles to solid joists~~; in the case of heat detectors or heat alarms, this~~ .

29.11.4.7.2 This spacing shall not exceed one-half of the listed smooth ceiling spacing.

Statement of Problem and Substantiation for Public Input

The proposed changes are to comply with the NFPA MOS.

Submitter Information Verification

Submitter Full Name: Thomas Miller
Organization: Hansen Engineering Services
Affiliation: Chapter 29 MOS Task Group
Street Address:
City:
State:
Zip:
Submittal Date: Fri Nov 05 17:39:10 EDT 2021
Committee: SIG-HOU

Committee Statement

Resolution: FR-5221-NFPA 72-2022
Statement: The revision aligns alarm requirements before detector requirements and add the word heat before alarm and detector for consistency. Added 29.11.4.8, which was previously in the smoke detector 29.11.3 section, and modified text to be in-line with other sections.

Public Input No. 430-NFPA 72-2022 [Section No. 29.11.4.7]

29.11.4.7*

~~Detectors~~ Heat detectors or heat alarms installed on an open-~~joisted~~ joist ceiling shall have their smooth ceiling spacing reduced where this spacing is measured at right angles to solid joists; in the case of heat detectors or heat alarms, this spacing shall not exceed one-half of the listed spacing.

Statement of Problem and Substantiation for Public Input

Added in the word heat to keep section 29.11.4.7 consistent with section 29.11.3, 4.11.4.1, the rest of 4.11.4.7 and the rest of Chapter 29. The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 26 13:06:44 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5221-NFPA 72-2022
Statement: The revision aligns alarm requirements before detector requirements and add the word heat before alarm and detector for consistency. Added 29.11.4.8, which was previously in the smoke detector 29.11.3 section, and modified text to be in-line with other sections.

Public Input No. 432-NFPA 72-2022 [Section No. 29.11.6]

29.11.6 Installation and Inspection Record.

Where a form is required by the AHJ to document the installation and inspection of a household ~~alarm~~ signaling system or single- or multiple-station alarms, 7.8.2(3) shall be used to document the record of completion and inspection.

Statement of Problem and Substantiation for Public Input

The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 26 13:28:09 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: Household alarm system is a defined term and is used throughout the standard.

Public Input No. 15-NFPA 72-2021 [Section No. 29.14.1.1.1]

29.14.1.1.1

All alarms and detectors shall comply with 29.14.1.1.1.1 to 29.14.1.1.1.2.

29.14.1.1.1.1 All alarms and detectors shall be plainly marked with the following information on the unit:

(1) Manufacturer’s or listee’s name, address, and model number.

(2) A mark or certification that the unit has been listed complies with the ~~definitionof~~ requirements definition in a product standard and is included in a list published by a testing organizaton that is acceptable to the authority having jurisdiction of “Listed” in 3.2.5.

(3) Electrical rating (where applicable).

(4) Manufacturer's published operating and maintenance instructions.

(5) Test instructions.

(6) Replacement and service instructions.

(7) Explanation of signal indicators, including identification of lights, switches, meters, and similar devices, regarding their function, unless their function is obvious.

(8) Distinction between alarm and trouble signals on units employing both.

(9) Reference to an installation diagram and system owner’s manual.

(10) Date of manufacture in the format YEAR (in four digits), MONTH (in letters), and DAY (in two digits) located on the outside of the alarm or detector.

29.14.1.1.1.2 All alarms and detectors shall be plainly marked on the unit in accordance with the following:

(1) The sensitivity setting for an alarm having a fixed setting shall be indicated.

(2) For an alarm that is intended to be adjusted in the field, the range of sensitivity shall be indicated.

(3) The marked sensitivity shall be indicated as a percent per foot obscuration level.

(4) The marking shall include a nominal value plus tolerance.

~~)~~

- ~~Reference to an installation diagram and system owner’s manual~~
- ~~Date of manufacture in the format YEAR (in four digits), MONTH (in letters), and DAY (in two digits) located on the outside of the alarm~~

Statement of Problem and Substantiation for Public Input

corrects the language to comply with the NFPA Manual of Style

Submitter Information Verification

Submitter Full Name: Thomas Miller
Organization: Hansen Engineering Services
Affiliation: Chapter 29 MOS Task Group

Street Address:
City:
State:
Zip:
Submittal Date: Mon Nov 08 16:33:18 EST 2021
Committee: SIG-HOU

Committee Statement

Resolution: FR-5252-NFPA 72-2022
Statement: The revision is made to comply with the NFPA Manual of Style. Existing (9) was rewritten as 29.14.1.1.1.2.

Public Input No. 192-NFPA 72-2022 [Section No. 29.14.1.2]

29.14.1.2 Carbon Monoxide Alarms and Detectors.

In addition to 29.14.1.1, carbon monoxide alarms or detectors shall be marked with the following information:

(1) Statement that indicates the unit is not suitable as a fire detector

(2) Warning that carbon monoxide is odorless, colorless, and tasteless

(3) Emergency actions to be taken

(4) Recommended replacement date

(5) If listed for use in an Unconditioned Area, the device shall be marked as such, as required by the product standard.

Statement of Problem and Substantiation for Public Input

With the expansion of carbon monoxide protection in the I-Codes, some devices may be required in unconditioned spaces. Updates to the product standards are being made. This provision is to ensure that it is clear whether an alarm or detector is tested for installation in such a space.

This is the work of a Task Group on carbon monoxide updates for Chapter 29.

Submitter Information Verification

Submitter Full Name: Wendy Gifford
Organization: Consultant
Street Address:
City:
State:
Zip:
Submittal Date: Wed Mar 23 15:18:37 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5233-NFPA 72-2022

Statement: The first revision is consistent with a change to the 2024 edition of the International Fire Code/International Building Code that will allow carbon monoxide alarms to be installed inside rooms or spaces within commercial buildings that are remote from dwelling units and sleeping units.

Public Input No. 433-NFPA 72-2022 [Section No. 29.14.1.2]

29.14.1.2 Carbon Monoxide Alarms and Detectors.

In addition to 29.14.1.1, carbon monoxide alarms or carbon monoxide detectors shall be marked with the following information:

(1) Statement that indicates the unit is not suitable as a fire detector

(2) Warning that carbon monoxide is odorless, colorless, and tasteless

(3) Emergency actions to be taken

(4) Recommended replacement date

Statement of Problem and Substantiation for Public Input

Updated to keep this consistent with section 29.11.3 and the rest of Chapter 29. The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 26 13:34:27 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5222-NFPA 72-2022
Statement: The revisions provides consistency with previous sections where the more descriptive terminology was used.

Public Input No. 434-NFPA 72-2022 [Section No. 29.14.2.1]

29.14.2.1 Alarms and Detectors.

The following information shall be included in the instructions provided with carbon monoxide alarms and carbon monoxide detectors:

(1) Installation instructions

(2) Operating instructions

(3) Testing instructions

(4) Maintenance instructions

(5) Replacement and service instructions

Statement of Problem and Substantiation for Public Input

Updated to keep this section consistent with section 29.11.3 and the rest of Chapter 29. The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 26 13:37:21 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5223-NFPA 72-2022
Statement: The revision provides for consistency with previous sections where the more descriptive terminology was used.

Public Input No. 435-NFPA 72-2022 [Section No. 29.14.2.2]

29.14.2.2 Carbon Monoxide Alarms and Detectors.

In addition to 29.14.2.1, the following information shall be included in the instructions provided with carbon monoxide alarms and carbon monoxide detectors:

(1) Statement indicating that smoke might not be present during a carbon monoxide alarm condition

(2)* Information on the actions to be taken in case of an alarm

(3) Minimum and recommended distances from fuel-burning appliances

Statement of Problem and Substantiation for Public Input

Updated to make this statement consistent with the rest of the section and Chapter 29. The primary purpose of this update is to bring uniformity and consistency to Chapter 29. There are several sections where we refer to the same item but used different words to identify it which can lead to confusion. The intent is to also add clarity to sections of Chapter 29. There is no intent to alter the actual code.

Submitter Information Verification

Submitter Full Name: Matthew Jakusz
Organization: ADT LLC
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 26 13:39:33 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5224-NFPA 72-2022
Statement: The revision provides for consistency with previous sections where the more descriptive terminology was used.

Public Input No. 74-NFPA 72-2022 [Section No. A.1.6.5]

A.1.6.5

Where dimensions are expressed in inches, it is intended that the precision of the measurement be 1 in., thus plus or minus ½ in. The conversion and presentation of dimensions in millimeters would then have a precision of 25 mm, thus plus or minus 13 mm. It is not intended that the application or enforcement of these values be more precise than the precision expressed.

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 2.3.3.3 requires Chapter 1 written in mandatory language. The task group proposed text in PI-73 includes mandatory language for section 1.6.5 and proposes this PI for moving the second sentence to the Annex, since it is more informative vs. mandatory.

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
Organization: Fike Corporation
Affiliation: Fire Suppression Systems Association (FSSA)
Street Address:
City:
State:
Zip:
Submittal Date: Fri Jan 14 13:08:48 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5003-NFPA 72-2022
Statement: Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 2.3.1.1 requires chapter 1 to be written in mandatory language.

Public Input No. 170-NFPA 72-2022 [Section No. A.3.3.97]

A.3.3.97 Emergency Communications System.

The definition is not intended to include the emergency services communications systems as addressed in ~~NFPA 1221~~ NFPA 1225 , nor to address the public switched telephone network.

Statement of Problem and Substantiation for Public Input

NFPA 1221 has been combined with NFPA 1061 and incorporated into a new document identified as NFPA 1225, Standard for Emergency Services Communications. The current edition is the 2022 edition.

Submitter Information Verification

Submitter Full Name: Richard Kluge
Organization: Ericsson
Affiliation: Alliance for Telecommunications Industry Solutions
Street Address:
City:
State:
Zip:
Submittal Date: Fri Mar 04 11:44:09 EST 2022
Committee: SIG-ECS

Committee Statement

Resolution: FR-5274-NFPA 72-2022
Statement: As part of the emergency response and responder safety document consolidation plan (consolidation plan) as approved by the NFPA Standards Council, this Standard, NFPA 1221, has been combined into a new consolidated Standard, NFPA 1225. This revision points the reader to the new Standard.

Public Input No. 257-NFPA 72-2022 [Section No. A.3.3.97]

A.3.3.97 Emergency Communications System.

The definition is not intended to include the emergency services communications systems as addressed in ~~NFPA 1221~~ NFPA 1225 , nor to address the public switched telephone network.

Statement of Problem and Substantiation for Public Input

As part of the Emergency Response and Responder Safety Document Consolidation Plan (consolidation plan) as approved by the NFPA Standards Council, this Standard, NFPA 1221, has been combined into a new consolidated Standard, NFPA 1225. This revision points the reader to the new Standard.

Submitter Information Verification

Submitter Full Name: Rodger Reiswig
Organization: Johnson Controls
Street Address:
City:
State:
Zip:
Submittal Date: Fri Apr 29 08:42:03 EDT 2022
Committee: SIG-ECS

Committee Statement

Resolution: FR-5274-NFPA 72-2022

Statement: As part of the emergency response and responder safety document consolidation plan (consolidation plan) as approved by the NFPA Standards Council, this Standard, NFPA 1221, has been combined into a new consolidated Standard, NFPA 1225. This revision points the reader to the new Standard.

Public Input No. 258-NFPA 72-2022 [Section No. A.3.3.103]

A.3.3.103–

Emergency Response Agency (ERA).

~~An ERA includes any public, governmental, private, industrial, or military organization that engages in the operations specified in the definition. [**1221,** 2019 Organizations providing law enforcement, emergency medical, fire, rescue, communications, and related support services. [1225, 2022]~~

Statement of Problem and Substantiation for Public Input

As part of the Emergency Response and Responder Safety Document Consolidation Plan (consolidation plan) as approved by the NFPA Standards Council, the NFPA 1221 Standard has been combined into a new consolidated Standard, NFPA 1225.
Within NFPA 1225, section 3.3.56, the ERA definition has been slightly modified. The text provided in the annex is an extract from NFPA 1225, 2022 edition and is definition.

Submitter Information Verification

Submitter Full Name: Rodger Reiswig
Organization: Johnson Controls
Street Address:
City:
State:
Zip:
Submittal Date: Fri Apr 29 08:46:10 EDT 2022
Committee: SIG-SSS

Committee Statement

Resolution: FR-5164-NFPA 72-2022
Statement: As part of the Emergency Response and Responder Safety Document Consolidation Plan (consolidation plan) as approved by the NFPA Standards Council, the NFPA 1221 Standard has been combined into a new consolidated Standard, NFPA 1225.

The text provided in the annex is an extract from NFPA 1225, 2022 edition.

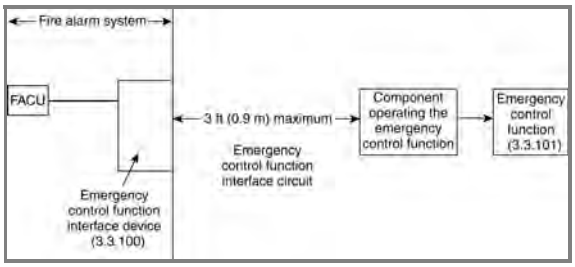
Public Input No. 361-NFPA 72-2022 [Section No. A.3.3.153.1.1]

A.3.3.153.1.1 Emergency Control Function Interface.

See Figure A.3.3.153.1.1.

Figure A.3.3.153.1.1 Emergency Control Function Interface.

Relocate A.3.3.153.1.1 to A.21.2.4



Statement of Problem and Substantiation for Public Input

The diagram indicates requirements are not part of the definitions and not part of the code and needs to be relocated.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 360-NFPA 72-2022 [Section No. A.21.2.4]	related section where graph should be moved.

Submitter Information Verification

Submitter Full Name: Chris Heaton
Organization: Electronic Security Association
Affiliation: Electronic Security Association
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 24 17:39:33 EDT 2022
Committee: SIG-PRO

Committee Statement

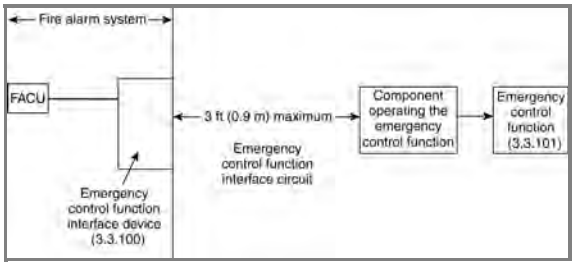
Resolution: FR-5370-NFPA 72-2022
Statement: This belongs as annex material for A.21.2.4 and is consistent with changes made to section 21.2.4.

Public Input No. 459-NFPA 72-2022 [Section No. A.3.3.153.1.1]

A 21 . ~~3.3.153.1.1~~ **2.4** Emergency Control Function Interface.

See Figure A.3.3.153.1.1.

Figure A.3.3.153.1.1 Emergency Control Function Interface.



Additional Proposed Changes

File Name	Description	Approved
NFPA_72_BS_SB_3_3_153_1_1_comments.docx		

Statement of Problem and Substantiation for Public Input

The diagram indicates requirements are not part of the definitions and not part of the code and needs to be relocated.

Submitter Information Verification

Submitter Full Name: Tim Knisely
Organization: Automatic Fire Alarm Association (AFAA)
Affiliation: Automatic Fire Alarm Association (AFAA)
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 27 09:22:31 EDT 2022
Committee: SIG-PRO

Committee Statement

Resolution: FR-5370-NFPA 72-2022
Statement: This belongs as annex material for A.21.2.4 and is consistent with changes made to section 21.2.4.

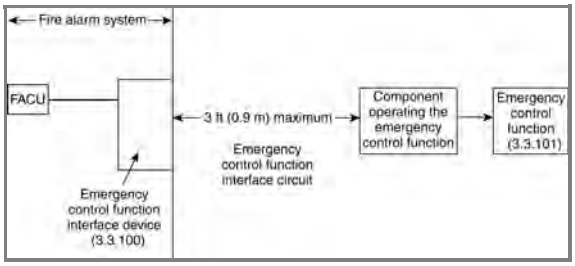
Public Input No. 500-NFPA 72-2022 [Section No. A.3.3.153.1.1]

Relocate A.3.3.153.1.1 to A.21.2.4

A.3.3.153.1.1 Emergency Control Function Interface.

See Figure A.3.3.153.1.1.

Figure A.3.3.153.1.1 Emergency Control Function Interface.



Statement of Problem and Substantiation for Public Input

The diagram indicates requirements are not part of the definitions and not part of the code and needs to be relocated.

Submitter Information Verification

Submitter Full Name: Megan Hayes
Organization: Nema
Street Address:
City:
State:
Zip:
Submittal Date: Mon May 30 15:17:12 EDT 2022
Committee: SIG-PRO

Committee Statement

Resolution: FR-5370-NFPA 72-2022
Statement: This belongs as annex material for A.21.2.4 and is consistent with changes made to section 21.2.4.

Public Input No. 269-NFPA 72-2022 [Section No. A.3.3.244]

A.3.3.244 Radio Frequency.

~~The present practicable limits of radio frequency (RF) are roughly 10 kHz to 100,000 MHz. Within this frequency range, electromagnetic waves can be detected and amplified as an electric current at the wave frequency.~~ ~~*Radio frequency*~~ ~~usually refers to the~~ ~~*RF*~~ ~~of the assigned channel. [~~ **~~1221,~~** ~~2019~~ A measurement representing the oscillation rate of the electromagnetic radiation spectrum or electromagnetic radio waves. [1225, 2022]

Statement of Problem and Substantiation for Public Input

As part of the Emergency Response and Responder Safety Document Consolidation Plan (consolidation plan) as approved by the NFPA Standards Council, the NFPA 1221 Standard has been combined into a new consolidated Standard, NFPA 1225.
The definition has been modified within NFPA 1225 and the proposed text reflects the new definition.

Submitter Information Verification

Submitter Full Name: Rodger Reiswig
Organization: Johnson Controls
Street Address:
City:
State:
Zip:
Submittal Date: Fri Apr 29 09:23:06 EDT 2022
Committee: SIG-PRS

Committee Statement

Resolution: FR-5120-NFPA 72-2022
Statement: The annex material has been removed to align with the actions of NFPA 1225 and the additional wording that was added by NFPA 1225 was not extracted by NFPA 72 as it is a repeat of the definition of Radio Frequency.

Public Input No. 274-NFPA 72-2022 [Section No. A.3.3.280]

A.3.3.280 Sleeping Area.

Bedrooms (or sleeping rooms) separated by other use areas, such as kitchens or living ~~rooms~~ rooms (but not bathrooms), ~~are~~ and living areas of residential occupancies intended for combination sleeping/living are considered separate sleeping areas.

Statement of Problem and Substantiation for Public Input

This is to clarify and expand the definition of sleeping areas to also include living areas in residential occupancies intended for combination sleeping/living.
This definition will be in the body of the code and will also comply with the intent of Annex for Section 18.4.6
This will help AHJs with enforcing audible appliances in living areas in residential occupancies in addition to bedrooms.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 273-NFPA 72-2022 [Section No. 3.3.280]	Annex material

Submitter Information Verification

Submitter Full Name: Sagiv Weiss-Ishai
Organization: San Francisco Fire Department
Affiliation: SFFD
Street Address:
City:
State:
Zip:
Submittal Date: Mon May 02 14:06:00 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: It is unknown at the time of construction if there will be a sleeping area in other areas that are not specifically bedrooms such as a den that could have a hide-a-bed.

Public Input No. 375-NFPA 72-2022 [Section No. A.7.3.2]

A.7.3.2

Design (layout) documents should contain information related to the system that could include specifications, shop drawings, ~~input/output matrix~~ sequence of operation , battery calculations, notification appliance voltage drop calculations for visual notification appliances and loudspeakers, and product technical data sheets.

Design (layout) documents could include such items as preliminary plans issued as guidance and direction, risk analysis, emergency response plan, or a combination of these.

Deviations from requirements of governing laws, codes, standards, or preliminary plan requirements specified by an engineer should be clearly identified and documented as such.

Documentation of equivalency, where applicable, should be provided in accordance with Section 1.5 and be included with the record drawings.

It is the intent that existing systems that are altered should have design (layout) documents prepared that are applicable only to the portion(s) of the system being altered.

Statement of Problem and Substantiation for Public Input

Provide consistent language among paragraphs related to the sequence of operation and add logic diagram as a means to depict the sequence of operation.

In addition to a narrative or an input/output matrix, a logic diagram is also a valid method to document the sequence of operation of a system. Sections of the Code that currently refer to documenting the sequence of operation only refer to a narrative description and/or an input/output matrix. Approvers of system design documentation are sometimes hesitant to approve or will not approve a design without a narrative or an input /output matrix even when a logic diagram is part of the design and provides more concise information, because NFPA 72 doesn't include a logic diagram as means to show the sequence of operation.

A logic diagram depicts the sequence of operation in easy-to-understand graphics, by interconnection of symbols representing the design of the entire system, not only showing the output for various inputs, but also the inter-working relationship between hardware and software within the system. A typical logic diagram will include internal components such as monitor modules, control modules, control relays, program addresses and custom messages for system inputs required for actuation of evacuation signals and ancillary functions for the intended sequence of operation. A logic diagram is particularly useful for addressable systems where an enormous amount of information representing the sequence of operation is required in large buildings or complex systems, whereas an input/output matrix is often confusing to produce and read (so many dots) when the system is large or complex. (NFPA 72 Figure A.14.6.1.1, for example, shows duplicate entries for 1st floor detectors, no 2nd floor detectors, and duct detectors that actuate alarm signals).

Older model addressable systems that require panel upgrades (CPU) for maintenance issues will come with firmware versions that won't likely support the older model software revision. In fact the older software revision software may require out of date laptop computer software (i.e., windows 98) to read it. The software media required to be controlled by NFPA 72 in cases such as this could be useless. A good logic diagram in a design is capable of providing the programming information necessary to restore the original sequence of operation because all programmable hardware is shown on the drawing with custom messages and program addresses.

A logic diagram is also a useful tool to convey detailed programming information to the programmer to ensure that site-specific software is configured to meet the owner's intended sequence of operation. Some facilities for example may be directed to implement software design control processes (i.e.,

NQA-1, Quality Assurance Requirements for Nuclear Facility Applications) that identify and document software design requirements including the operating system, function, interfaces, performance criteria, and design inputs of a computer program, such as site-specific fire alarm programs that can be created or modified. These software design requirements can be met with a logic diagram whereas an input/output matrix lacks interconnection detail between hardware and software.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 315-NFPA 72-2022 [Section No. 7.2.1]	
Public Input No. 315-NFPA 72-2022 [Section No. 7.2.1]	

Submitter Information Verification

Submitter Full Name: Herbert Hurst
Organization: Savannah River Nuclear Solutio
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 25 15:16:13 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5042-NFPA 72-2022
Statement: Sequence of Operation is a more technically accurate phrase that includes input/output matrix in addition to narrative description.

Public Input No. 451-NFPA 72-2022 [Section No. A.7.4.9]

A.7.4.9

For an example of a logic diagram see A.14.6.1.1(a) and for an example of an input/output matrix ~~of operation~~ , see A.14.6.1.1(b) .

Additional Proposed Changes

File Name	Description	Approved
NFPA_72_Figure_A.14.6.1.1_a_Final_002_.pdf	Sample Logic Diagram	

Statement of Problem and Substantiation for Public Input

Provide consistent language among paragraphs related to the sequence of operation and add logic diagram as a means to depict the sequence of operation.

In addition to a narrative or an input/output matrix, a logic diagram is also a valid method to document the sequence of operation of a system. Sections of the Code that currently refer to documenting the sequence of operation only refer to a narrative description and/or an input/output matrix. Approvers of system design documentation are sometimes hesitant to approve or will not approve a design without a narrative or an input /output matrix even when a logic diagram is part of the design and provides more concise information, because NFPA 72 doesn't include a logic diagram as means to show the sequence of operation.

A logic diagram depicts the sequence of operation in easy-to-understand graphics, by interconnection of symbols representing the design of the entire system, not only showing the output for various inputs, but also the inter-working relationship between hardware and software within the system. A typical logic diagram will include internal components such as monitor modules, control modules, control relays, program addresses and custom messages for system inputs required for actuation of evacuation signals and ancillary functions for the intended sequence of operation. A logic diagram is particularly useful for addressable systems where an enormous amount of information representing the sequence of operation is required in large buildings or complex systems, whereas an input/output matrix is often confusing to produce and read (so many dots) when the system is large or complex. (NFPA 72 Figure A.14.6.1.1, for example, shows duplicate entries for 1st floor detectors, no 2nd floor detectors, and duct detectors that actuate alarm signals).

Older model addressable systems that require panel upgrades (CPU) for maintenance issues will come with firmware versions that won't likely support the older model software revision. In fact the older software revision software may require out of date laptop computer software (i.e., windows 98) to read it. The software media required to be controlled by NFPA 72 in cases such as this could be useless. A good logic diagram in a design is capable of providing the programming information necessary to restore the original sequence of operation because all programmable hardware is shown on the drawing with custom messages and program addresses.

A logic diagram is also a useful tool to convey detailed programming information to the programmer to ensure that site-specific software is configured to meet the owner's intended sequence of operation. Some facilities for example may be directed to implement software design control processes (i.e., NQA-1, Quality Assurance Requirements for Nuclear Facility Applications) that identify and document software design requirements including the operating system, function, interfaces, performance criteria, and design inputs of a computer program, such as site-specific fire alarm programs that can be created or modified. These software design requirements can be met with a logic diagram whereas an input/output matrix lacks interconnection detail between hardware and software.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 315-NFPA 72-2022 [Section No. 7.2.1]	
Public Input No. 315-NFPA 72-2022 [Section No. 7.2.1]	

Submitter Information Verification

Submitter Full Name: Herbert Hurst
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Street Address:
City:
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Submittal Date: Thu May 26 16:44:39 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: Logic diagrams can be excessively long and complex for some systems/buildings and would be difficult for all parties involved in development, review, and approval to read. Current language does not prohibit a logic diagram in addition to narrative form or input/output matrix.

Public Input No. 456-NFPA 72-2022 [Section No. A.7.5.5.2]

A.7.5.5.2

For an example of a logic diagram, see A.14.6.1.1(a) and for an example of an input/output matrix of operation, see A.14.6.1.1(b) .

Additional Proposed Changes

File Name	Description	Approved
NFPA_72_Figure_A.14.6.1.1_a_Final_002_.1653601205227.pdf	Logic Diagram	

Statement of Problem and Substantiation for Public Input

Provide consistent language among paragraphs related to the sequence of operation and add logic diagram as a means to depict the sequence of operation.

In addition to a narrative or an input/output matrix, a logic diagram is also a valid method to document the sequence of operation of a system. Sections of the Code that currently refer to documenting the sequence of operation only refer to a narrative description and/or an input/output matrix. Approvers of system design documentation are sometimes hesitant to approve or will not approve a design without a narrative or an input /output matrix even when a logic diagram is part of the design and provides more concise information, because NFPA 72 doesn't include a logic diagram as means to show the sequence of operation.

A logic diagram depicts the sequence of operation in easy-to-understand graphics, by interconnection of symbols representing the design of the entire system, not only showing the output for various inputs, but also the inter-working relationship between hardware and software within the system. A typical logic diagram will include internal components such as monitor modules, control modules, control relays, program addresses and custom messages for system inputs required for actuation of evacuation signals and ancillary functions for the intended sequence of operation. A logic diagram is particularly useful for addressable systems where an enormous amount of information representing the sequence of operation is required in large buildings or complex systems, whereas an input/output matrix is often confusing to produce and read (so many dots) when the system is large or complex. (NFPA 72 Figure A.14.6.1.1, for example, shows duplicate entries for 1st floor detectors, no 2nd floor detectors, and duct detectors that actuate alarm signals).

Older model addressable systems that require panel upgrades (CPU) for maintenance issues will come with firmware versions that won't likely support the older model software revision. In fact the older software revision software may require out of date laptop computer software (i.e., windows 98) to read it. The software media required to be controlled by NFPA 72 in cases such as this could be useless. A good logic diagram in a design is capable of providing the programming information necessary to restore the original sequence of operation because all programmable hardware is shown on the drawing with custom messages and program addresses.

A logic diagram is also a useful tool to convey detailed programming information to the programmer to ensure that site-specific software is configured to meet the owner's intended sequence of operation. Some facilities for example may be directed to implement software design control processes (i.e., NQA-1, Quality Assurance Requirements for Nuclear Facility Applications) that identify and document software design requirements including the operating system, function, interfaces, performance criteria, and design inputs of a computer program, such as site-specific fire alarm programs that can be created or modified. These software design requirements can be met with a logic diagram whereas an input/output matrix lacks interconnection detail between hardware and software.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 315-NFPA 72-2022 [Section No. 7.2.1]	

Submitter Information Verification

Submitter Full Name: Herbert Hurst
Organization: Savannah River Nuclear Solutio
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City:
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Submittal Date: Fri May 27 09:07:37 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: Logic diagrams can be excessively long and complex for some systems/buildings and would be difficult for all parties involved in development, review, and approval to read. Current language does not prohibit a logic diagram in addition to narrative form or input/output matrix.

Public Input No. 576-NFPA 72-2022 [Section No. A.7.5.5.2]

A.7.5.5.2

For an example of an input/output matrix of operation, see A.14.6.1.1. The actually programmed sequence of operation should include all applicable items found in the list for 7.4.9.

Statement of Problem and Substantiation for Public Input

It is critical that the Owner receives a copy of the sequence of operation that is actually programmed into the fire alarm system. As such, a detailed list is included in PI No. 575 and should be referenced in this Annex material so reference is made back to this inclusive list.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 575-NFPA 72-2022 [Section No. 7.4.9]	Reference to detailed list

Submitter Information Verification

Submitter Full Name: Larry Rietz
Organization: Jensen Hughes
Street Address:
City:
State:
Zip:
Submittal Date: Wed Jun 01 17:44:20 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: The proposed list for 7.4.9 was not accepted and there is no existing list of items in 7.4.9.

Public Input No. 85-NFPA 72-2022 [Section No. A.7.5.6.6.3]

A.7.5.6.6.~~3~~ 4

It is the intent that if an original or current record of completion is not available for the overall system, the installer would provide a new record of completion that addresses items discovered about the system. The installer will complete the respective sections related to the overall system that have been discovered under the current scope of work. It is not the intent of this section to require an in-depth evaluation of an existing system solely for the purpose of completing a system-wide record of completion.

Statement of Problem and Substantiation for Public Input

This PI links with PI-82 and PI-84. If accepted/revised, this annex paragraph will require renumbering.
Substantiation from PI-82: NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue.
Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text creates a new section and provides new paragraphs for each requirement.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 82-NFPA 72-2022 [Section No. 7.5.6.6.1]	renumber

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
Organization: Fike Corporation
Affiliation: Fire Suppression Systems Association (FSSA)
Street Address:
City:
State:
Zip:
Submittal Date: Sat Jan 15 20:11:11 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5020-NFPA 72-2022
Statement: Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text.

Public Input No. 81-NFPA 72-2022 [New Section after A.7.7.1.2]

A.7.6.6

Figure 7.6.6(a) through Figure 7.6.6(f) are sample forms intended to reflect the general information that should be provided by the system and testing contractor at the time of a system test. However, they are not intended to mandate a specific format for the report. A report format customized to the specific system configuration, devices, appliances, and system functions being tested meets the intent of the requirement. If these forms are used, they can be modified as needed to provide a more complete and/or clear record, along with additional sheets, data, or calculations as necessary.

In Figure 7.6.6(e) , Section 2.1 , an example of a single-voice-channel emergency communications system is a system that provides a single message or evacuation signal to multiple floors or areas at the same time. An example of a multiple-voice-channel emergency communications system is a system that can provide multiple messages or evacuation signals to multiple floors or areas at the same time.

Figure 7.6.6(a) System Record of Inspection and Testing.

SYSTEM RECORD OF INSPECTION AND TESTING

This form is to be completed by the system inspection and testing contractor at the time of a system test.
It shall be permitted to modify this form as needed to provide a more complete and/or clear record.
Insert N/A in all unused lines.
Attach additional sheets, data, or calculations as necessary to provide a complete record.

Inspection/Test Start Date/Time: _____ Inspection/Test Completion Date/Time: _____

Supplemental Form(s) Attached: _____ (yes/no)

1. PROPERTY INFORMATION

Name of property: _____
Address: _____
Description of property: _____
Name of property representative: _____
Address: _____
Phone: _____ Fax: _____ E-mail: _____

2. TESTING AND MONITORING INFORMATION

Testing organization: _____
Address: _____
Phone: _____ Fax: _____ E-mail: _____
Monitoring organization: _____
Address: _____
Phone: _____ Fax: _____ E-mail: _____
Account number: _____ Phone line 1: _____ Phone line 2: _____
Means of transmission: _____
Entity to which alarms are retransmitted: _____ Phone: _____

3. DOCUMENTATION

Onsite location of the required record documents and site-specific software: _____

4. DESCRIPTION OF SYSTEM OR SERVICE

4.1 Control Unit

Manufacturer: _____ Model number: _____

4.2 Software Firmware

Firmware revision number: _____

4.3 System Power

4.3.1 Primary (Main) Power

Nominal voltage: _____ Amps: _____ Location: _____
Overcurrent protection type: _____ Amps: _____ Disconnecting means location: _____

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SYSTEM RECORD OF INSPECTION AND TESTING *(continued)*

4. DESCRIPTION OF SYSTEM OR SERVICE *(continued)*

4.3.2 Secondary Power

Type: _____ Location: _____

Battery type (if applicable): _____

Calculated capacity of batteries to drive the system:

In standby mode (hours): _____ In alarm mode (minutes): _____

5. NOTIFICATIONS MADE PRIOR TO TESTING

Monitoring organization	Contact: _____	Time: _____
Building management	Contact: _____	Time: _____
Building occupants	Contact: _____	Time: _____
Authority having jurisdiction	Contact: _____	Time: _____
Other, if required	Contact: _____	Time: _____

6. TESTING RESULTS

6.1 Control Unit and Related Equipment

Description	Visual Inspection	Functional Test	Comments
Control unit	❑	❑	
Lamps/LEDs/LCDs	❑	❑	
Fuses	❑	❑	
Trouble signals	❑	❑	
Disconnect switches	❑	❑	
Ground-fault monitoring	❑	❑	
Supervision	❑	❑	
Local annunciator	❑	❑	
Remote annunciators	❑	❑	
Remote power panels	❑	❑	

6.2 Secondary Power

Description	Visual Inspection	Functional Test	Comments
Battery condition	❑	❑	
Load voltage	❑	❑	
Discharge test	❑	❑	
Charger test	❑	❑	
Remote panel batteries	❑	❑	
Batteries marked with date of manufacture	❑	❑	

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SYSTEM RECORD OF INSPECTION AND TESTING *(continued)*

6. TESTING RESULTS *(continued)*

6.3 Alarm and Supervisory Alarm Initiating Device

Attach supplementary device test sheets for all initiating devices.

6.4 Notification Appliances

Attach supplementary appliance test sheets for all notification appliances.

6.5 Interface Equipment

Attach supplementary interface component test sheets for all interface components.

Circuit Interface / Signaling Line Circuit Interface / Fire Alarm Control Interface

6.6 Supervising Station Monitoring

Description	Yes	No	Time	Comments
Alarm signal	❑	❑		
Alarm restoration	❑	❑		
Trouble signal	❑	❑		
Trouble restoration	❑	❑		
Supervisory signal	❑	❑		
Supervisory restoration	❑	❑		

6.7 Public Emergency Alarm Reporting System

Description	Yes	No	Time	Comments
Alarm signal	❑	❑		
Alarm restoration	❑	❑		
Trouble signal	❑	❑		
Trouble restoration	❑	❑		
Supervisory signal	❑	❑		
Supervisory restoration	❑	❑		

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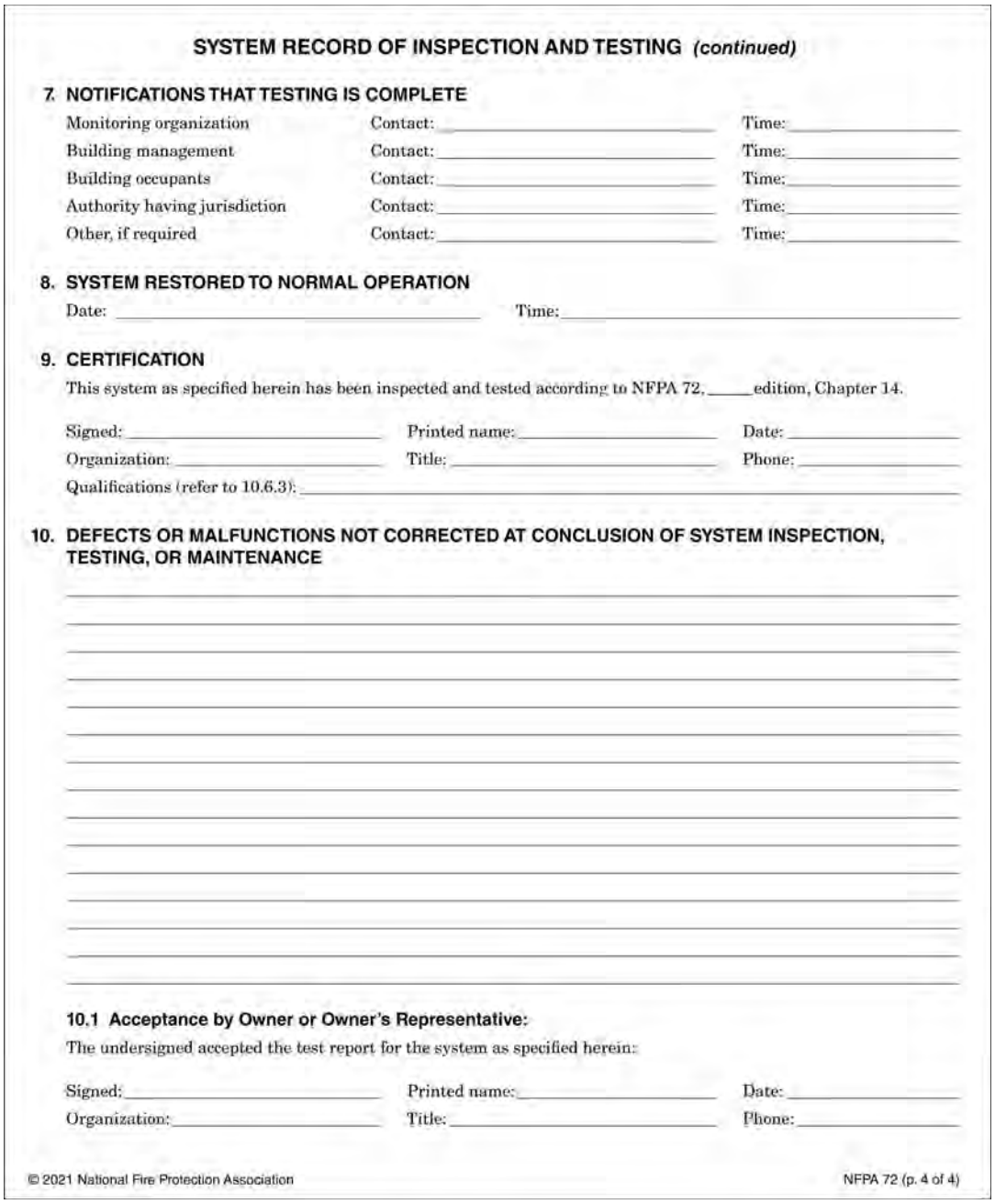

SYSTEM RECORD OF INSPECTION AND TESTING *(continued)*

7. NOTIFICATIONS THAT TESTING IS COMPLETE

Monitoring organization	Contact: _____	Time: _____
Building management	Contact: _____	Time: _____
Building occupants	Contact: _____	Time: _____
Authority having jurisdiction	Contact: _____	Time: _____
Other, if required	Contact: _____	Time: _____

8. SYSTEM RESTORED TO NORMAL OPERATION

Date: _____ Time: _____

9. CERTIFICATION

This system as specified herein has been inspected and tested according to NFPA 72, _____ edition, Chapter 14.

Signed: _____ Printed name: _____ Date: _____

Organization: _____ Title: _____ Phone: _____

Qualifications (refer to 10.6.3): _____

10. DEFECTS OR MALFUNCTIONS NOT CORRECTED AT CONCLUSION OF SYSTEM INSPECTION, TESTING, OR MAINTENANCE

10.1 Acceptance by Owner or Owner's Representative:

The undersigned accepted the test report for the system as specified herein:

Signed: _____ Printed name: _____ Date: _____

Organization: _____ Title: _____ Phone: _____

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Figure 7.6.6(b) Notification Appliance Supplementary Record of Inspection and Testing.

NOTIFICATION APPLIANCE SUPPLEMENTARY RECORD OF INSPECTION AND TESTING

This form is a supplement to the System Record of Inspection and Testing.
It includes a notification appliance test record.
This form is to be completed by the system inspection and testing contractor at the time of the inspection and/or test.
It shall be permitted to modify this form as needed to provide a more complete and/or clear record.
Insert N/A in all unused lines.

Inspection/Test Start Date/Time: _____ Inspection/Test Completion Date/Time: _____

Number of Supplemental Pages Attached: _____

1. PROPERTY INFORMATION

Name of property: _____

Address: _____

2. NOTIFICATION APPLIANCE TEST RESULTS

Appliance Type	Location/Identifier	Test Results

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NOTIFICATION APPLIANCE
SUPPLEMENTARY RECORD OF INSPECTION AND TESTING *(continued)*

2. NOTIFICATION APPLIANCE TEST RESULTS *(continued)*

Appliance Type	Location/Identifier	Test Results

See main System Record of Inspection and Testing for additional information, certifications, and approvals.

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Figure 7.6.6(c) Initiating Device Supplementary Record of Inspection and Testing.

INITIATING DEVICE
SUPPLEMENTARY RECORD OF INSPECTION AND TESTING

This form is a supplement to the System Record of Inspection and Testing.
It includes an initiating device test record.
This form is to be completed by the system inspection and testing contractor at the time of the inspection and/or test.
It shall be permitted to modify this form as needed to provide a more complete and/or clear record.
Insert N/A in all unused lines.

Inspection/Test Start Date/Time: _____ Inspection/Test Completion Date/Time: _____

Number of Supplemental Pages Attached: _____

1. PROPERTY INFORMATION

Name of property: _____

Address: _____

2. INITIATING DEVICE TEST RESULTS

Device Type	Address	Location	Test Results

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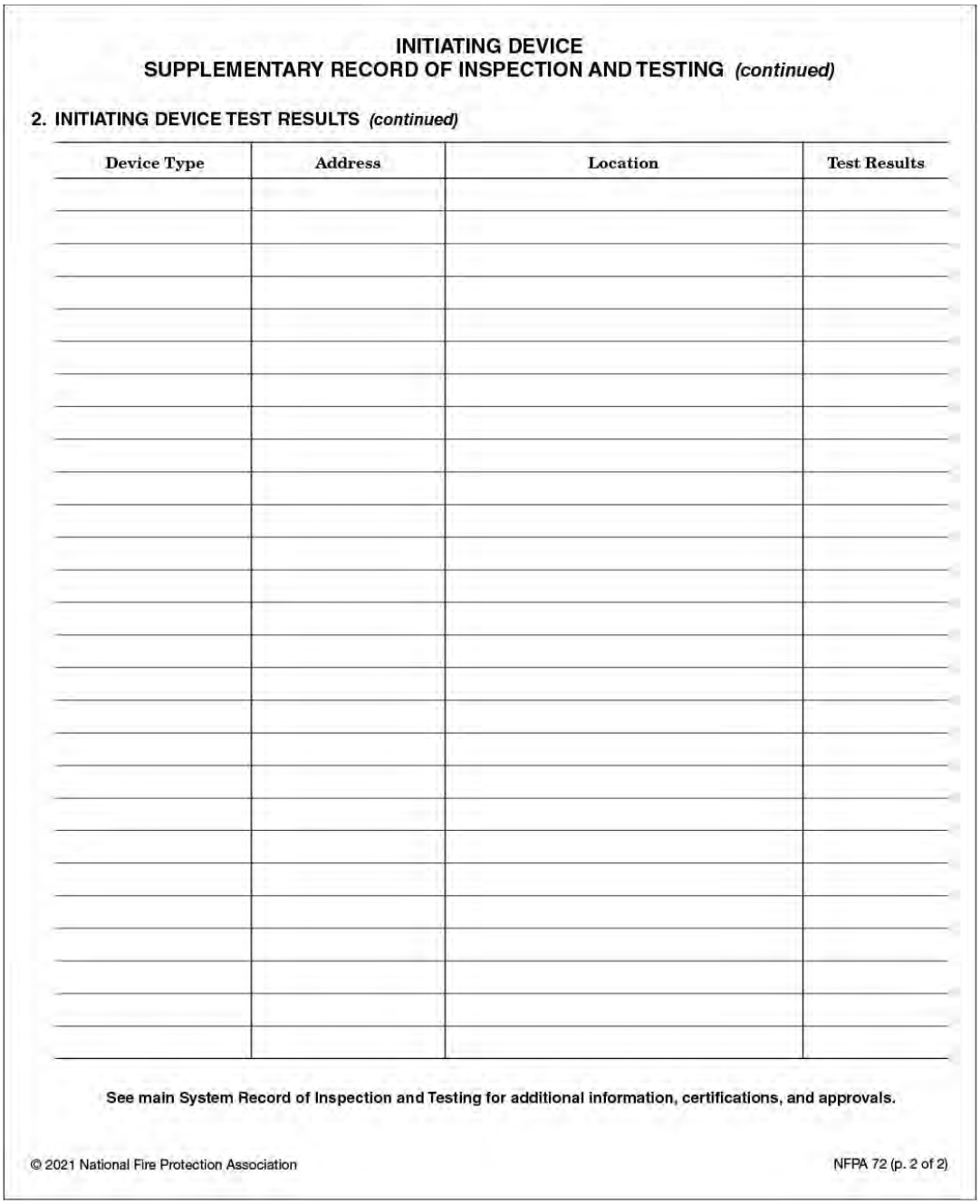

INITIATING DEVICE
SUPPLEMENTARY RECORD OF INSPECTION AND TESTING *(continued)*

2. INITIATING DEVICE TEST RESULTS *(continued)*

Device Type	Address	Location	Test Results

See main System Record of Inspection and Testing for additional information, certifications, and approvals.

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Figure 7.6.6(d) Mass Notification System Supplementary Record of Inspection and Testing.

MASS NOTIFICATION SYSTEM
SUPPLEMENTARY RECORD OF INSPECTION AND TESTING

This form is a supplement to the System Record of Inspection and Testing.
It includes a mass notification system test record.
This form is to be completed by the system inspection and testing contractor at the time of the inspection and/or test.
It shall be permitted to modify this form as needed to provide a more complete and/or clear record.
Insert N/A in all unused lines.

Inspection/Test Start Date/Time: _____ Inspection/Test Completion Date/Time: _____

Number of Supplemental Pages Attached: _____

1. PROPERTY INFORMATION

Name of property: _____

Address: _____

2. MASS NOTIFICATION SYSTEM

2.1 System Type

❑ In-building MNS—combination

❑ In-building MNS—stand alone ❑ Wide-area MNS ❑ Distributed recipient MNS

❑ Other (specify): _____

2.2 System Features

❑ Combination fire alarm/MNS ❑ MNS ACU only ❑ Wide-area MNS to regional national alerting interface

❑ Local operating console (LOC) ❑ Direct recipient MNS (DRMNS) ❑ Wide-area MNS to DRMNS interface

❑ Wide-area MNS to high-power loudspeaker array (HPLA) interface ❑ In-building MNS to wide-area MNS interface

❑ Other (specify): _____

3. IN-BUILDING MASS NOTIFICATION SYSTEM

3.1 Primary Power

Input voltage of MNS panel: _____ MNS panel amps: _____

3.2 Engine-Driven Generator ❑ This system does not have a generator.

Location of generator: _____

Location of fuel storage: _____ Type of fuel: _____

3.3 Stored-Energy Emergency Power Supply Systems ❑ This system does not have an SEPSS.

Equipment powered by an SEPSS: _____

Location of SEPSS: _____

Calculated capacity of SEPSS batteries to drive the system components connected to it:

In standby mode (hours): _____ In alarm mode (minutes): _____

3.4 Batteries

Location: _____ Type: _____ Nominal voltage: _____ Amp/hour rating: _____

Calculated capacity of batteries to drive the system:

In standby mode (hours): _____ In alarm mode (minutes): _____

❑ Batteries are marked with date of manufacture.

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MASS NOTIFICATION SYSTEM
SUPPLEMENTARY RECORD OF INSPECTION AND TESTING *(continued)*

4. MASS NOTIFICATION EQUIPMENT TEST RESULTS

Description	Visual Inspection	Functional Test	Comments
Functional test			
Reset/power down test			
Fuses			
Primary power supply			
SEPSS power test			
Trouble signals			
Disconnect switches			
Ground-fault monitoring			
CCU security mechanism			
Prerecorded message content			
Prerecorded message activation			
Software backup performed			
Test backup software			
Fire alarm to MNS interface			
MNS to fire alarm interface			
In-building MNS to wide-area MNS			
MNS to direct recipient MNS			
Sound pressure levels Occupied ❑ Yes ❑ No Ambient dBA:_____ Alarm dBA:_____ (attach supplementary notification appliance form(s) with locations, values, and weather conditions)			
System intelligibility Test method:_____ Score:_____ CIS value:_____ (attach supplementary notification appliance form(s) with locations, values, and weather conditions)			
Other (specify):			

See main System Record of Inspection and Testing for additional information, certifications, and approvals.

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Figure 7.6.6(e) Emergency Communications Systems Supplementary Record of Inspection and Testing.

EMERGENCY COMMUNICATIONS SYSTEMS
SUPPLEMENTARY RECORD OF INSPECTION AND TESTING

This form is a supplement to the System Record of Inspection and Testing.
It includes systems and components specific to emergency communication systems.
This form is to be completed by the system inspection and testing contractor at the time of the inspection and/or test.
It shall be permitted to modify this form as needed to provide a more complete and/or clear record.
Insert N/A in all unused lines.

Inspection/Test Start Date/Time: _____ Inspection/Test Completion Date/Time: _____

Number of Supplemental Pages Attached: _____

1. PROPERTY INFORMATION

Name of property: _____

Address: _____

2. DESCRIPTION OF SYSTEM OR SERVICE

❑ Fire alarm with in-building fire emergency voice alarm communications system (EVAC)

❑ Mass notification system

❑ Combination system, with the following components:

❑ Fire alarm ❑ EVACS ❑ MNS ❑ Two-way, in-building, emergency communications system

❑ Other (specify): _____

Additional description of system(s): _____

_____

2.1 In-Building Fire Emergency Voice Alarm Communications System

Manufacturer: _____ Model number: _____

Number of single voice alarm channels: _____ Number of multiple voice alarm channels: _____

Number of loudspeakers: _____ Number of loudspeaker circuits: _____

Location of amplification and sound processing equipment: _____

_____

_____

Location of paging microphone stations:

Location 1: _____

Location 2: _____

Location 3: _____

2.2 Mass Notification System

2.2.1 System Type:

❑ In-building MNS—combination

❑ In-building MNS ❑ Wide-area MNS ❑ Distributed recipient MNS

❑ Other (specify): _____

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EMERGENCY COMMUNICATIONS SYSTEMS
SUPPLEMENTARY RECORD OF INSPECTION AND TESTING *(continued)*

2. DESCRIPTION OF SYSTEM OR SERVICE *(continued)*

2.2.2 System Features:

❑ Combination fire alarm/MNS ❑ MNS autonomous control unit ❑ Wide-area MNS to regional national alerting interface
❑ Local operating console (LOC) ❑ Distributed-recipient MNS (DRMNS) ❑ Wide-area MNS to DRMNS interface
❑ Wide-area MNS to high-power loudspeaker array (HPLA) interface ❑ In-building MNS to wide-area MNS interface
❑ Other (specify): _____

2.2.3 MNS Local Operating Consoles

Location 1: _____
Location 2: _____
Location 3: _____

2.2.4 High-Power Loudspeaker Arrays

Number of HPLA loudspeaker initiation zones: _____
Location 1: _____
Location 2: _____
Location 3: _____

2.2.5 Mass Notification Devices

Combination fire alarm/MNS visual devices: _____ MNS-only visual devices: _____
Textual signs: _____ Other (describe): _____
Supervision class: _____

2.2.6 Special Hazard Notification

❑ This system does not have special suppression pre-discharge notification
❑ MNS systems DO NOT override notification appliances required to provide special suppression pre-discharge notification

3. TWO-WAY EMERGENCY COMMUNICATION SYSTEMS

3.1 Telephone System

Number of telephone jacks installed: _____ Number of warden stations installed: _____
Number of telephone handsets stored on site: _____
Type of telephone system installed: ❑ Electrically powered ❑ Sound powered

3.2 Area of Refuge Emergency Communications Systems

Number of stations: _____ Location of central control point: _____
Days and hours when central control point is attended: _____
Location of alternate control point: _____
Days and hours when alternate control point is attended: _____

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EMERGENCY COMMUNICATIONS SYSTEMS
SUPPLEMENTARY RECORD OF INSPECTION AND TESTING *(continued)*

3. TWO-WAY EMERGENCY COMMUNICATIONS SYSTEMS *(continued)*

3.3 Elevator Emergency Communications Systems

Number of elevators with stations: _____ Location of central control point: _____

Days and hours when central control point is attended: _____

Location of alternate control point: _____

Days and hours when alternate control point is attended: _____

3.4 Other Two-Way Communications System

Describe: _____

4. TESTING RESULTS

4.1 Control Unit and Related Equipment

Description	Visual Inspection	Functional Test	Comments
Control unit	❑	❑	
Lamps/LEDs/LCDs	❑	❑	
Fuses	❑	❑	
Trouble signals	❑	❑	
Disconnect switches	❑	❑	
Ground fault monitoring	❑	❑	
Supervision	❑	❑	
Local annunciator	❑	❑	
Remote annunciators	❑	❑	
Remote power panels	❑	❑	
Other:	❑	❑	

4.2 Secondary Power

Description	Visual Inspection	Functional Test	Comments
Battery condition	❑	❑	
Load voltage	❑	❑	
Discharge test	❑	❑	
Charger test	❑	❑	
Remote panel batteries	❑	❑	

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EMERGENCY COMMUNICATIONS SYSTEMS
SUPPLEMENTARY RECORD OF INSPECTION AND TESTING *(continued)*

4. TESTING RESULTS *(continued)*

4.3 Emergency Communications Equipment

Description	Visual Inspection	Functional Test	Comments
Control unit	❑	❑	
Lamps/LEDs/LCDs	❑	❑	
Fuses	❑	❑	
Secondary power supply	❑	❑	
Trouble signals	❑	❑	
Disconnect switches	❑	❑	
Ground fault monitoring	❑	❑	
Panel supervision	❑	❑	
System performance	❑	❑	
System audibility	❑	❑	
System intelligibility	❑	❑	
Other:	❑	❑	

4.4 Mass Notification Equipment

Description	Visual Inspection	Functional Test	Comments
Functional test	❑	❑	
Reset/Power down test	❑	❑	
Fuses	❑	❑	
Primary power supply	❑	❑	
SEPSS power test	❑	❑	
Trouble signals	❑	❑	
Disconnect switches	❑	❑	
Ground fault monitoring	❑	❑	
CCU security mechanism	❑	❑	
Prerecorded message content	❑	❑	
Prerecorded message activation	❑	❑	
Software backup performed	❑	❑	
Test backup software	❑	❑	
Fire alarm to MNS Interface	❑	❑	
MNS to fire alarm interface	❑	❑	
In-building MNS to wide-area MNS	❑	❑	
MNS to direct recipient MNS	❑	❑	

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EMERGENCY COMMUNICATIONS SYSTEMS
SUPPLEMENTARY RECORD OF INSPECTION AND TESTING *(continued)*

4. TESTING RESULTS *(continued)*

4.4 Mass Notification Equipment *(continued)*

Description	Visual Inspection	Functional Test	Comments
Sound pressure levels (attach report with locations, values, and weather conditions)	❑	❑	
System intelligibility ❑ CSI ❑ STI (attach report with locations, values, and weather conditions)	❑	❑	
Other:	❑	❑	

4.5 Two-Way Communication Equipment

Description	Visual Inspection	Functional Test	Comments
Phone handsets	❑	❑	
Phone jacks	❑	❑	
Off-hook indicator	❑	❑	
Call-in signal	❑	❑	
System performance	❑	❑	
System audibility	❑	❑	
System intelligibility	❑	❑	
Other:	❑	❑	

See main System Record of Inspection and Testing for additional information, certifications, and approvals.

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Figure 7.6.6(f) Interface Component Supplementary Record of Inspection and Testing.

INTERFACE COMPONENT
SUPPLEMENTARY RECORD OF INSPECTION AND TESTING

This form is a supplement to the System Record of Inspection and Testing.
It includes an interface component test record for circuit interfaces, signaling line circuit interfaces, and fire alarm control interfaces.
This form is to be completed by the system inspection and testing contractor at the time of the inspection and/or test.
It shall be permitted to modify this form as needed to provide a more complete and/or clear record.
Insert N/A in all unused lines.

Inspection/Test Start Date/Time: _____ Inspection/Test Completion Date/Time: _____

Number of Supplemental Pages Attached: _____

1. PROPERTY INFORMATION

Name of property: _____

Address: _____

2. INTERFACE COMPONENT TEST RESULTS

Interface Component Type	Address	Location	Test Results

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INTERFACE COMPONENT
SUPPLEMENTARY RECORD OF INSPECTION AND TESTING *(continued)*

2. INTERFACE COMPONENT TEST RESULTS *(continued)*

Interface Component Type	Address	Location	Test Results

See main System Record of Inspection and Testing for additional information, certifications, and approvals.

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Figure 7.8.2(m) Installation and Inspection Form Single- and Multiple-Station Alarms and Household Fire Alarm Systems.

INSTALLATION AND INSPECTION FORM
SINGLE- AND MULTIPLE-STATION ALARMS AND
HOUSEHOLD FIRE ALARM SYSTEMS

This form is to be completed at the time of installation/final inspection of any household fire alarm system and single- or multiple-station alarms. It shall be permitted to modify this form as required to provide a more complete and/or clear record.
Insert N/A in all unused lines.
Attach additional sheets, data, or calculations as necessary to complete form.

Form Completion Date: _____ Supplemental Pages Attached: _____

1. PROPERTY INFORMATION

Property Owner: _____
Address: _____
Phone: _____ E-Mail: _____ Other: _____

2. INSTALLATION, CONTRACTOR, AND MONITORING INFORMATION

Installation Contractor: _____
Address: _____
Phone: _____ E-Mail: _____ Other: _____

2.1 Type of Off-Premises Notification

Monitoring Organization: _____
Address: _____
Phone: _____ E-Mail: _____ Other: _____
Account Number: _____ Means of Transmission: _____

3. DESCRIPTION OF SYSTEM OR SERVICE

NFPA 72 Edition: _____

3.1 Type of System

❑ Single-Station ❑ Multiple-Station ❑ Household Fire Alarm System ❑ Carbon Monoxide Alarm System

3.2 Number of Devices

Single-Station Smoke Alarms: _____ Multiple-Station Smoke Alarms: _____
Single-Station Heat Alarms: _____ Multiple-Station Heat Alarms: _____
Single-Station Carbon Monoxide Alarms: _____ Multiple-Station Carbon Monoxide Alarms: _____
System Smoke Detectors: _____ System Heat Detectors: _____
Waterflow Switches: _____
Notification Appliances: _____ Type: _____
Interfaced/Other Equipment: _____

3.3 Location (L) and Date (D) of Devices

Device type, location and manufacture date of devices (date shown on back of devices)

_____ _____ _____ _____
_____ _____ _____ _____
_____ _____ _____ _____

Electrical Panel (L): _____ Breaker Number: _____
Alarm Control Unit (L): _____ Battery Back-up (D): _____
Plug in Transformer (L): _____
Relay for Interconnection (L): _____

4. PREPARED BY

Signed: _____ Printed Name: _____ Date: _____
Title: _____ Organization: _____

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Additional Proposed Changes

File Name	Description	Approved
Edits_to_I_T_Form.docx		

Statement of Problem and Substantiation for Public Input

This PI calls for Section 7.6.6 to be the placeholder for the annex note currently located at A.7.8.2.(2), pointing the reader to a new Section A.7.6.6 rather
than to Section 7.8.2 for sample forms for Inspection and Testing. Furthermore, the requirement in this section for a
record of inspection and testing more correctly points to the true basis of the forms, namely Chapter 14's requirements.

This is linked to a related PI calling for the deletion of the Inspection and Testing forms from Chapter 7

and a relocation of those same forms to A.7.6.6

Relocation (not removal) of the inspection and testing sample forms to the annex concurs with what the Code's intent has been all along (and which is stated clearly in the Annex)
which is that the forms are to serve as a guide, not a mandate. The AHJ can still mandate that these sample forms be used but in line with the Annex material currently in A.7.8.2(2), these sample forms should not be in the body of the Code. (Note: In line with the proposed move of these forms to the Annex, much of the italicized explanatory language at the beginning of each form has been incorporated into the annex note itself. See attached document. for a visual of this).

The annex note in this PI is currently found in Section A.7.8.2(2) but has been edited with regard to the form figures that appear immediately afterward.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 80-NFPA 72-2022 [Section No. 7.6.6]	
Public Input No. 67-NFPA 72-2022 [Section No. 7.8.2]	
Public Input No. 68-NFPA 72-2022 [Section No. A.7.8.2(2)]	
Public Input No. 67-NFPA 72-2022 [Section No. 7.8.2]	
Public Input No. 68-NFPA 72-2022 [Section No. A.7.8.2(2)]	
Public Input No. 80-NFPA 72-2022 [Section No. 7.6.6]	

Submitter Information Verification

Submitter Full Name: Joe Scibetta
Organization: BuildingReports
Street Address:
City:
State:
Zip:
Submittal Date: Fri Jan 14 17:01:02 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: The requirements for form content should remain in the body of the Code, and this is expressed through the provided figures in 7.8.2. However, 7.8.1.2 permits alternative form layouts to be used.

Public Input No. 68-NFPA 72-2022 [Section No. A.7.8.2(2)]

~~A.7.8.2(2)~~ —

~~Figure 7.8.2(g) through Figure 7.8.2(l) are sample forms intended to reflect the general information that should be provided as part of a system inspection and test report, but they are not intended to mandate a specific format for the report. A report format customized to the specific system configuration, devices, appliances, and system functions being tested meets the intent of the requirement.~~

~~In Figure 7.8.2(k), Section 2.1, an example of a single-voice-channel emergency communications system is a system that provides a single message or evacuation signal to multiple floors or areas at the same time. An example of a multiple-voice-channel emergency communications system is a system that can provide multiple messages or evacuation signals to multiple floors or areas at the same time.~~

Statement of Problem and Substantiation for Public Input

This PI is related to PIs 80, 81 and 67, which call for the removal of the current Section 7.8.2 (2) and the relocation of its current corresponding annex note along with the Inspection and Testing forms to Section A.7.6.6.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 67-NFPA 72-2022 [Section No. 7.8.2]	
Public Input No. 80-NFPA 72-2022 [Section No. 7.6.6]	
Public Input No. 81-NFPA 72-2022 [New Section after A.7.7.1.2]	
Public Input No. 81-NFPA 72-2022 [New Section after A.7.7.1.2]	

Submitter Information Verification

Submitter Full Name: Joe Scibetta
Organization: BuildingReports
Street Address:
City:
State:
Zip:
Submittal Date: Thu Jan 13 13:35:08 EST 2022
Committee: SIG-TMS

Committee Statement

Resolution: The requirements for form content should remain in the body of the Code, and this is expressed through the provided figures in 7.8.2. However, 7.8.1.2 permits alternative form layouts to be used.

Public Input No. 378-NFPA 72-2022 [Section No. A.10.3.1]

A.10.3.1

~~Terms used by testing laboratories for equipment that is listed or labeled could include certified, approved, or listed.~~

Just noting that a piece of equipment is listed is not sufficient. Listing involves evaluation of the equipment to determine its suitability for a specific purpose for use. The evaluation is usually accomplished using product testing standards developed to demonstrate that specific performance requirements have been met. Many of these performance requirements are based on specific requirements in the Code and go far beyond requirements used only to demonstrate electrical safety.

While most equipment would be listed for fire alarm system use, some equipment may have a different listing. For example, routers and modems that may be used with some transmission methods in the signal transmission path between a protected premises and a supervising station might be listed as general communications equipment (see 26.6.3.12).

Equipment listings generally contain information pertaining to the permitted use, required ambient conditions, mounting orientation, voltage tolerances, compatibility, and so on. Equipment must be installed, tested, and maintained in conformance with the listing and the manufacturer's published instructions to meet the requirements of the Code. Conformance with the listing and the manufacturer's instructions has been a long-standing requirement, originating in the requirements of NFPA 70.

Another aspect to equipment listing is the compatibility with the other parts of the system. This is key as it is designed to ensure system functionality and reliability.

In seismic hazard zones, the fire alarm designer should verify seismic certification requirements for control equipment with the AHJ.

Statement of Problem and Substantiation for Public Input

The text as modified further clarifies the intended listing requirements. Products must be listed to compatible standards as identified in Chapter 2.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 377-NFPA 72-2022 [Section No. 10.3.1]	related to section 10.3.1

Submitter Information Verification

Submitter Full Name: Chris Heaton
Organization: Electronic Security Association
Affiliation: Electronic Security Association
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 25 16:43:17 EDT 2022

Committee: SIG-FUN

Committee Statement

Resolution: The current language is adequate. In addition, the committee does not agree with the proposed changes. Proposed “a)” addresses equipment design rather than equipment performance (Section 1.1 & 1.2). Proposed “b)” attempts to modify and limit the definition of “Listed” in Section 3.2.5. Proposed “c)” for compatibility is adequately addressed by the process to be “Listed”. It was also noted that some of the topics this input attempts to address are already addressed in Section 10.3 (e.g., 10.3.1 and 10.3.2).

Public Input No. 343-NFPA 72-2022 [Section No. A.10.5.3.5]

A.10.5.3.5

~~This is not intended to require certification where it is not offered or required by the manufacturer.~~ -----Delete this section - language moved to chapter 10 - PI 282

Statement of Problem and Substantiation for Public Input

PI 282 recommends to move the annex material into the body of the code. There are many existing systems where the manufacturer no longer provides certification for programmers. These systems still need to be maintained and it should be clear that if certification is not available that it cannot be required to program.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 282-NFPA 72-2022 [New Section after 10.5.3.5.1]	

Submitter Information Verification

Submitter Full Name: Jason Dupuis
Organization: Cintas Fire Protection F19
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 24 11:01:29 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: The text is appropriately addressed within the annex as explanatory information and does not belong in the main body of the code as a requirement.

Public Input No. 140-NFPA 72-2022 [Section No. A.10.21.4]

A.10.21.4 5

It is important for the authority having jurisdiction, typically the local fire official, to be informed when systems have been out of service for more than 8 hours so that appropriate measures can be taken. The term *out of service* is meant to refer to the entire system or a substantial portion thereof.

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text utilized 2 separate paragraphs for the 2 requirements, thus renumbering the subsequent sections.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 139-NFPA 72-2022 [Section No. 10.21.4]	directly related

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
Organization: Fike Corporation
Affiliation: Fire Suppression Systems Association (FSSA)
Street Address:
City:
State:
Zip:
Submittal Date: Mon Jan 24 16:11:05 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5140-NFPA 72-2022
Statement: The Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text

Public Input No. 142-NFPA 72-2022 [Section No. A.10.21.5]

A.10.21.~~5~~ 6

The need for mitigating measures is typically determined on a case-by-case basis. This considers the building, occupancy type, nature and duration of impairment, building occupancy level during impairment period, active work being conducted on the fire alarm system during the impairment, condition of other fire protection systems and features (i.e., sprinklers, structural compartmentation, etc.), and hazards and assets at risk.

Appropriate mitigating measures range from simple occupant notification to full-time fire watch. Determining factors vary from testing-related impairments and maintenance activities during normal business through extensive impairments to high-value, high-hazard situations.

Statement of Problem and Substantiation for Public Input

NFPA staff, Richard Roux, and NFPA SIG-FUN chair, Manuelita David, requested a task group to address Manual of Style (MOS) issues. NFPA 72 SIG-FUN MOS Task Group chair Kim Gruner, and members Fred Leber, Chris Moseley, and Paul Hail met to provide recommendations for each issue. Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires Sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of test. The task group proposed text utilized 2 separate paragraphs for the 2 requirements, thus renumbering subsequent paragraphs.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 141-NFPA 72-2022 [Section No. 10.21.5]	directly related.

Submitter Information Verification

Submitter Full Name: Kimberly Gruner
Organization: Fike Corporation
Affiliation: Fire Suppression Systems Association (FSSA)
Street Address:
City:
State:
Zip:
Submittal Date: Mon Jan 24 16:15:36 EST 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5140-NFPA 72-2022
Statement: The Manual of Style for NFPA Technical Committee Documents, July 2004 Edition section 1.8.3 requires sections containing multiple requirements subdivided into subsections, which shall be further subdivided into paragraphs of text

Public Input No. 390-NFPA 72-2022 [Section No. A.11.1]

A.11.1

Cybersecurity is not required for every system or application; it is only required when other sections of this Code, authorities, or regulations mandate that cybersecurity be incorporated into the system(s). Generally, there are greater cybersecurity concerns when systems are connected to external networks.~~Cybersecurity recommendations are contained in Annex J .~~

A.11.1.5.7 Figure A.11.1.5.7 depicts system typical firewall/gateway operation. Such functionality is not mandated but when deployed might take the form of physical hardware, firmware, or a combination of both. The firewall/gateway might be physically integrated into the control unit as shown in the integrated control unit graphic, or a separate device/service that interacts with the control unit as shown in the nonintegrated control unit. If the firewall/gateway is segmented from the executive firmware and site-specific software and if security software changes to the cybersecurity-related only software within the firewall/gateway are made, these changes should not require system retesting. If changes are made in a firewall/gateway that is not segmented from the executive firmware and site-specific software, the system should be retested..

Additional Proposed Changes

File Name	Description	Approved
Cybersecurity-Integrated_Control_Unit_chart.jpg	System Typical Firewall/Gateway Operation	

Statement of Problem and Substantiation for Public Input

Updated and moved figure that depicts system typical firewall/gateway operation from Annex J to Annex A.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 384-NFPA 72-2022 [Section No. 11.1]	Figure and supporting information related to cybersecurity

Submitter Information Verification

Submitter Full Name: Chris Heaton
Organization: Electronic Security Association
Affiliation: Electronic Security Association
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 25 17:56:27 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5188-NFPA 72-2022

Statement: Building systems are increasingly networked and/or accessible to public facing networks. Evidence has been identified in multiple case studies including the Fire Protection Research Foundation (FPRF) report. The FPRF conducted research that has identified gaps and assessed the appropriateness of the existing provisions and guidance related to cybersecurity.

Their report lists gaps that include:

*Configuration

–Interconnection of external systems (call centers, service providers) could allow for unauthorized activity if those external systems are not secure.

-Interconnection with other building systems with no access/restriction to prevent unintended communications.

-If one interconnected system is compromised and life safety is connected, it would be safe to assume that all are compromised.

*Implementation

-Systems that have remote access for maintenance or monitoring could introduce vulnerabilities if not properly implemented.

-Using secure gateways and configuring devices with only the necessary communication mechanisms can reduce exposure.

-The use of insecure wireless devices, or lack of wireless device authentication can be a weakness.

*Security

-Complexity of cybersecurity threats and solutions are increasing, making systems more vulnerable to highly sophisticated arson (terrorist) attacks, industrial espionage, and insider threats. Because of this, it is becoming more difficult to defend against these attacks and new solutions need to be implemented.

*Access

-Weak logical and physical access to 3rd party networks and systems.

-Easy to implant hardware or software devices into environment

The revised chapter addresses the above gaps by requiring industry accepted cybersecurity practices.

Public Input No. 406-NFPA 72-2022 [New Section after A.14.4.2]

A14.4.2.3

Control unit hardware could include, but is not limited to the central processing unit, power supply, and signaling line circuit.

Statement of Problem and Substantiation for Public Input

Clarify the intent of this section.

Submitter Information Verification

Submitter Full Name: Chris Heaton
Organization: Electronic Security Association
Affiliation: Electronic Security Association
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 25 19:07:25 EDT 2022
Committee: SIG-TMS

Committee Statement

Resolution: FR-5357-NFPA 72-2022
Statement: This clarifies what is meant by "control unit hardware" since it is not a defined term.

Public Input No. 478-NFPA 72-2022 [New Section after A.14.4.2]

TITLE OF NEW CONTENT

A14.4.2.3 Control unit hardware could include, but is not limited to the central processing unit, power supply, and signaling line circuit

Additional Proposed Changes

File Name	Description	Approved
NFPA_72_BS_SB_A14_4_2_3_comments.docx		

Statement of Problem and Substantiation for Public Input

Clarify intent of the section

Submitter Information Verification

Submitter Full Name: Tim Knisely
Organization: Automatic Fire Alarm Association (AFAA)
Affiliation: Automatic Fire Alarm Association (AFAA)
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 27 11:52:13 EDT 2022
Committee: SIG-TMS

Committee Statement

Resolution: FR-5357-NFPA 72-2022
Statement: This clarifies what is meant by "control unit hardware" since it is not a defined term.

Public Input No. 524-NFPA 72-2022 [New Section after A.14.4.2]

A.14.4.2.3

Control unit hardware could include, but is not limited to the central processing unit, power supply, and signaling line circuit.

Statement of Problem and Substantiation for Public Input

Clarify intent of the section.

Submitter Information Verification

Submitter Full Name: Megan Hayes
Organization: Nema
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 10:31:37 EDT 2022
Committee: SIG-TMS

Committee Statement

Resolution: FR-5357-NFPA 72-2022
Statement: This clarifies what is meant by "control unit hardware" since it is not a defined term.

Public Input No. 376-NFPA 72-2022 [Section No. A.14.4.3]

A.14.4.3

Fire alarm system testing can be conducted using silent testing and the bypassing of emergency control functions. All input signals should be verified according to the system ~~matrix~~ sequence of operation to ensure they create the appropriate outputs. Tests of audible notification appliances and emergency control functions should be conducted at the conclusion of satisfactory tests of all inputs.

The intent is to reduce the amount of time spent causing audible and visual occupant notification during tests in an occupied building. This reduction will help reduce the negative (cry wolf) impact on occupants caused by excessive operation of notification appliances. System printouts or history logs are an effective way of verifying the correct receipt of signals. However, many outputs such as occupant notification and emergency control functions are tested for correct operation, because logs do not necessarily verify operation of the system output. Operation of audible and visual notification appliances could be accomplished in a lump sum fashion after all inputs are proven correct by silent testing. All inputs tested in this manner must be proved to cause the appropriate signal by verifying alarm receipt at the controls as each device is actuated. Manufacturer-specific protocols such as “walk test” or “alarm bypass” are an acceptable means of testing under this section. Other methods of mitigating the negative impact include off-hours tests when the building is not occupied.

Statement of Problem and Substantiation for Public Input

The code currently allows a sequence of operation to be defined in narrative form or an input/output matrix. Changing the text to the more generic term acknowledges the narrative form, matrix, or other acceptable documents that define the sequence of operation.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 315-NFPA 72-2022 [Section No. 7.2.1]	
Public Input No. 315-NFPA 72-2022 [Section No. 7.2.1]	

Submitter Information Verification

Submitter Full Name: Herbert Hurst
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Submittal Date: Wed May 25 15:24:36 EDT 2022
Committee: SIG-TMS

Committee Statement

Resolution: FR-5358-NFPA 72-2022

Statement: The code currently allows a sequence of operation to be defined in narrative form or an input/output matrix. Changing the text to the more generic term acknowledges the narrative form, matrix, or other acceptable documents that define the sequence of operation.

Public Input No. 463-NFPA 72-2022 [Section No. A.14.6.1.1]

A.14.6.1.1

~~One method~~ Two methods used to define the required sequence of operations and to document the actual sequence of operations ~~is~~ are a logic diagram and an input/output matrix *(see ~~Figure~~ Figures A.14.6.1.1(a) and (b))* .

Figure A.14.6.1.1(a)

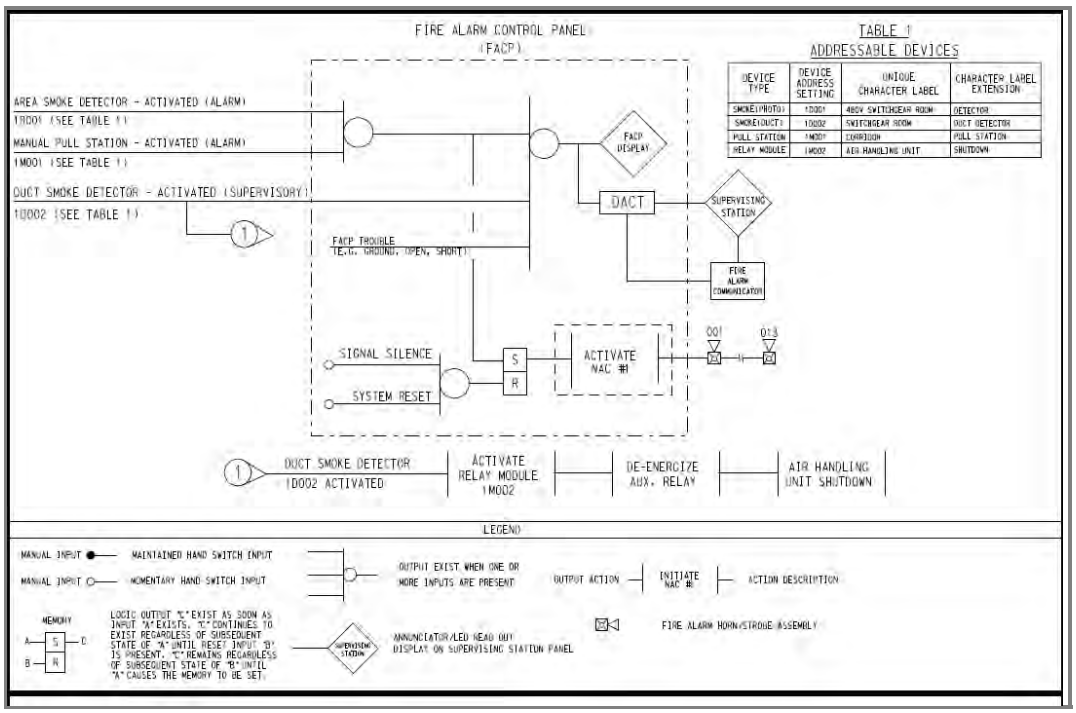
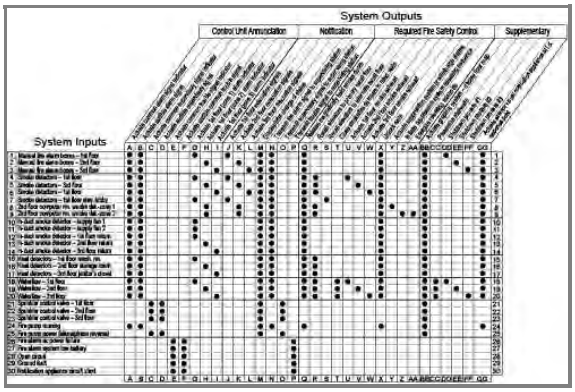


Figure A.14.6.1. ~~1 Typical~~ **1(b) Typical Input/Output Matrix** .



Additional Proposed Changes

File Name	Description	Approved
NFPA_72_Figure_A.14.6.1.1_a_Final_002_.1653601205227.pdf	Logic Diagram	

Statement of Problem and Substantiation for Public Input

Provide consistent language among paragraphs related to the sequence of operation and add logic diagram as a means to depict the sequence of operation.

In addition to a narrative or an input/output matrix, a logic diagram is also a valid method to document the sequence of operation of a system. Sections of the Code that currently refer to documenting the sequence of operation only refer to a narrative description and/or an input/output matrix. Approvers of system design documentation are sometimes hesitant to approve or will not approve a design without a narrative or an input /output matrix even when a logic diagram is part of the design and provides more concise information, because NFPA 72 doesn't include a logic diagram as means to show the sequence of operation.

A logic diagram depicts the sequence of operation in easy-to-understand graphics, by interconnection of symbols representing the design of the entire system, not only showing the output for various inputs, but also the inter-working relationship between hardware and software within the system. A typical logic diagram will include internal components such as monitor modules, control modules, control relays, program addresses and custom messages for system inputs required for actuation of evacuation signals and ancillary functions for the intended sequence of operation. A logic diagram is particularly useful for addressable systems where an enormous amount of information representing the sequence of operation is required in large buildings or complex systems, whereas an input/output matrix is often confusing to produce and read (so many dots) when the system is large or complex. (NFPA 72 Figure A.14.6.1.1, for example, shows duplicate entries for 1st floor detectors, no 2nd floor detectors, and duct detectors that actuate alarm signals).

Older model addressable systems that require panel upgrades (CPU) for maintenance issues will come with firmware versions that won't likely support the older model software revision. In fact the older software revision software may require out of date laptop computer software (i.e., windows 98) to read it. The software media required to be controlled by NFPA 72 in cases such as this could be useless. A good logic diagram in a design is capable of providing the programming information necessary to restore the original sequence of operation because all programmable hardware is shown on the drawing with custom messages and program addresses.

A logic diagram is also a useful tool to convey detailed programming information to the programmer to ensure that site-specific software is configured to meet the owner's intended sequence of operation. Some facilities for example may be directed to implement software design control processes (i.e., NQA-1, Quality Assurance Requirements for Nuclear Facility Applications) that identify and document software design requirements including the operating system, function, interfaces, performance criteria, and design inputs of a computer program, such as site-specific fire alarm programs that can be created or modified. These software design requirements can be met with a logic diagram whereas an input/output matrix lacks interconnection detail between hardware and software.Provide consistent language among paragraphs related to the sequence of operation and add logic diagram as a means to depict the sequence of operation.

In addition to a narrative or an input/output matrix, a logic diagram is also a valid method to document the sequence of operation of a system. Sections of the Code that currently refer to documenting the sequence of operation only refer to a narrative description and/or an input/output matrix. Approvers of system design documentation are sometimes hesitant to approve or will not approve a design without a narrative or an input /output matrix even when a logic diagram is part of the design and provides more concise information, because NFPA 72 doesn't include a logic diagram as means to show the sequence of operation.

A logic diagram depicts the sequence of operation in easy-to-understand graphics, by interconnection of symbols representing the design of the entire system, not only showing the output for various inputs, but also the inter-working relationship between hardware and software within the system. A typical logic diagram will include internal components such as monitor modules, control modules, control relays, program addresses and custom messages for system inputs required for actuation of evacuation signals and ancillary functions for the intended sequence of operation. A logic diagram is particularly useful for addressable systems where an enormous amount of information representing the sequence of operation is required in large buildings or complex systems, whereas an input/output matrix is often confusing to produce and read (so many dots) when the system is large or complex. (NFPA 72 Figure A.14.6.1.1, for example, shows duplicate entries for 1st floor detectors, no 2nd floor detectors, and duct detectors that actuate alarm signals).

Older model addressable systems that require panel upgrades (CPU) for maintenance issues will come with firmware versions that won't likely support the older model software revision. In fact the older software revision software may require out of date laptop computer software (i.e., windows 98) to read it. The software media required to be controlled by NFPA 72 in cases such as this could be useless. A good logic diagram in a design is capable of providing the programming information necessary to restore the original sequence of operation because all programmable hardware is shown on the drawing with custom messages and program addresses.

A logic diagram is also a useful tool to convey detailed programming information to the programmer to ensure that site-specific software is configured to meet the owner's intended sequence of operation. Some facilities for example may be directed to implement software design control processes (i.e., NQA-1, Quality Assurance Requirements for Nuclear Facility Applications) that identify and document software design requirements including the operating system, function, interfaces, performance criteria, and design inputs of a computer program, such as site-specific fire alarm programs that can be created or modified. These software design requirements can be met with a logic diagram whereas an input/output matrix lacks interconnection detail between hardware and software.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 315-NFPA 72-2022 [Section No. 7.2.1]	
Public Input No. 315-NFPA 72-2022 [Section No. 7.2.1]	

Submitter Information Verification

Submitter Full Name: Herbert Hurst
Organization: Savannah River Nuclear Solutio
Street Address:
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Submittal Date: Fri May 27 09:49:43 EDT 2022
Committee: SIG-TMS

Committee Statement

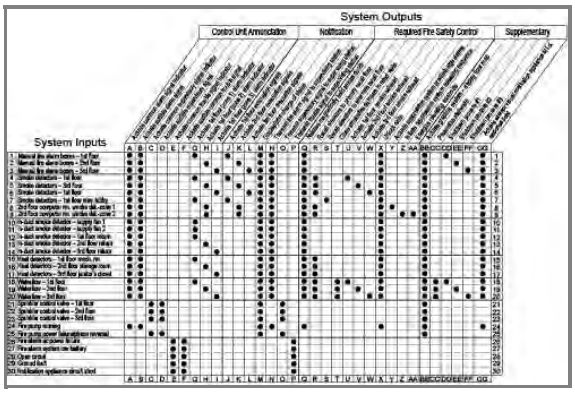
Resolution:
Statement: The revision adds logic diagrams as a means to depict the sequence of operation.

Public Input No. 577-NFPA 72-2022 [Section No. A.14.6.1.1]

A.14.6.1.1

One method used to define the required sequence of operations and to document the actual sequence of operations is an input/output matrix *(see Figure A.14.6.1.1).* When documenting a sequence of operations on a shop drawing or to document actual programmed features of an alarm system, one or more matrices may be necessary, or a combination of a written narrative and a matrix may be necessary. This documentation should include all of the applicable features noted in 7.4.9.

Figure A.14.6.1.1 Typical Input/Output Matrix.



Statement of Problem and Substantiation for Public Input

It is critical that the Owner receives a copy of the sequence of operation that is actually programmed into the fire alarm system. It is also impossible to test an alarm system without understanding how the system is actually programmed. As such, a detailed list is included in PI No. 575 and should be referenced in this Annex material so reference is made back to this inclusive list.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 575-NFPA 72-2022 [Section No. 7.4.9]	Reference to detailed list

Submitter Information Verification

Submitter Full Name: Larry Rietz
Organization: Jensen Hughes
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Submittal Date: Wed Jun 01 17:51:15 EDT 2022
Committee: SIG-TMS

Committee Statement

Resolution:

Statement: The revision adds logic diagrams as a means to depict the sequence of operation.

Public Input No. 443-NFPA 72-2022 [Section No. A.17.5.3.1.4]

A.17.5.3.1.4 — 6 __

Total coverage requires that a fire above the suspended ceiling be detected. Detector spacing and location for above ceiling spaces are addressed in 17.7.4.5.4. If that above-ceiling space is used as an air return plenum, this detection can be provided either by smoke detectors placed in accordance with 17.7.5.2 or where the air leaves the smoke compartment in accordance with 17.7.6.4.2.2.

Statement of Problem and Substantiation for Public Input

Renumbering issue if other PI's are accepted.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 441-NFPA 72-2022 [Section No. 17.5.3.1.4]	

Submitter Information Verification

Submitter Full Name: Samuel Rokowski
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Submittal Date: Thu May 26 15:11:06 EDT 2022
Committee: SIG-IDS

Committee Statement

Resolution: Renumbering occurs automatically. No action is necessary.

Public Input No. 249-NFPA 72-2022 [Section No. A.17.6.3.1.1]

A.17.6.3.1.1

Maximum linear spacings on smooth ceilings for spot-type heat detectors are determined by full-scale fire tests. *[See Figure A.17.6.3.1.1(c).]* These tests assume that the detectors are to be installed in a pattern of one or more squares, each side of which equals the maximum spacing as determined in the test, as illustrated in Figure A.17.6.3.1.1(a). The detector to be tested is placed at a corner of the square so that it is positioned at the farthest possible distance from the fire while remaining within the square. Thus, the distance from the detector to the fire is always the test spacing multiplied by 0.7 and can be calculated as shown in Table A.17.6.3.1.1. Figure A.17.6.3.1.1(b) illustrates the smooth ceiling spacing layout for line-type heat detectors.

Table A.17.6.3.1.1 Test Spacing for Spot-Type Heat Detectors

Test Spacing		Maximum Test Distance from Fire to Detector (0.7*D*)	
ft	m	ft	m
50 × 50	15.2 × 15.2	35.0	10.7
40 × 40	12.2 × 12.2	28.0	8.5
30 × 30	9.1 × 9.1	21.0	6.4
25 × 25	7.6 × 7.6	17.5	5.3
20 × 20	6.1 × 6.1	14.0	4.3
15 × 15	4.6 × 4.6	10.5	3.2

Once the correct maximum test distance has been determined, it is valid to interchange the positions of the fire and the detector. The detector is now in the middle of the square, and the listing specifies that the detector is adequate to detect a fire that occurs anywhere within that square — even out to the farthest corner.

In laying out detector installations, designers work in terms of rectangles, as building areas are generally rectangular in shape. The pattern of heat spread from a fire source, however, is not rectangular in shape. On a smooth ceiling, heat spreads out in all directions in an ever-expanding circle. Thus, the coverage of a detector is not, in fact, a square, but rather a circle whose radius is the linear spacing multiplied by 0.7.

This is graphically illustrated in Figure A.17.6.3.1.1(d). With the detector at the center, by rotating the square, an infinite number of squares can be laid out, the corners of which create the plot of a circle whose radius is 0.7 times the listed spacing. The detector will cover any of these squares and, consequently, any point within the confines of the circle.

So far, this explanation has considered squares and circles. In practical applications, very few areas turn out to be exactly square, and circular areas are extremely rare. Designers deal generally with rectangles of odd dimensions and corners of rooms or areas formed by wall intercepts, where spacing to one wall is less than one-half the listed spacing. To simplify the rest of this explanation, the use of a detector with a listed spacing of 30 ft × 30 ft (9.1 m × 9.1 m) should be considered. The principles derived are equally applicable to other types.

Figure A.17.6.3.1.1(g) illustrates the derivation of this concept. In Figure A.17.6.3.1.1(g), a detector is placed in the center of a circle with a radius of 21 ft (0.7 × 30 ft) [6.4 m (0.7 × 9.1 m)]. A series of rectangles with one dimension less than the permitted maximum of 30 ft (9.1 m) is constructed within the circle. The following conclusions can be drawn:

(1) As the smaller dimension decreases, the longer dimension can be increased beyond the linear maximum spacing of the detector with no loss in detection efficiency.

(2) A single detector covers any area that fits within the circle. For a rectangle, a single, properly located detector should be permitted, provided the diagonal of the rectangle does not exceed the diameter of the circle.

(3) Relative detector efficiency actually is increased, because the area coverage in square meters is always less than the 900 ft^2 (84 m^2) permitted if the full 30 ft × 30 ft (9.1 m × 9.1 m) square were to be utilized. The principle illustrated here allows equal linear spacing between the detector and the fire, with no recognition for the effect of reflection from walls or partitions, which in narrow rooms or corridors is of additional benefit. For detectors that

are not centered, the longer dimension should always be used in laying out the radius of coverage.

Areas so large that they exceed the rectangular dimensions given in Figure A.17.6.3.1.1(g) require additional detectors. Often, proper placement of detectors can be facilitated by breaking down the area into multiple rectangles of the dimensions that fit most appropriately *[see Figure A.17.6.3.1.1(e) and Figure A.17.6.3.1.1(f)]*. For example, refer to Figure A.17.6.3.1.1(h). A corridor 10 ft (3.0 m) wide and up to 82 ft (25.0 m) long can be covered with two 30 ft (9.1 m) spot-type detectors. An area 40 ft (12.2 m) wide and up to 74 ft (22.6 m) long can be covered with four spot-type detectors. Irregular areas need more careful planning to make certain that no spot on the ceiling is more than 21 ft (6.4 m) away from a detector. These points can be determined by striking arcs from the remote corner. Where any part of the area lies beyond the circle with a radius of 0.7 times the listed spacings, additional detectors are required.

Figure A.17.6.3.1.1(h) illustrates smoke or heat detector spacing layouts in irregular areas.

Figure A.17.6.3.1.1(a) Spot-Type Heat Detectors.

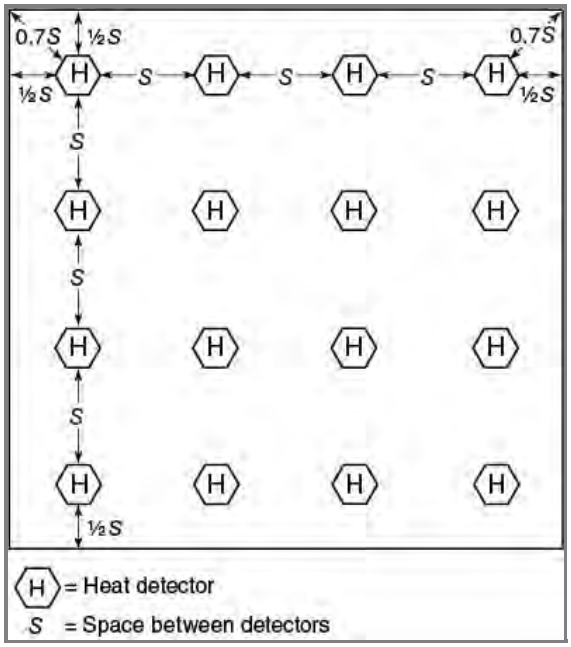


Figure A.17.6.3.1.1(b) Line-Type Detectors — Spacing Layouts, Smooth Ceiling.

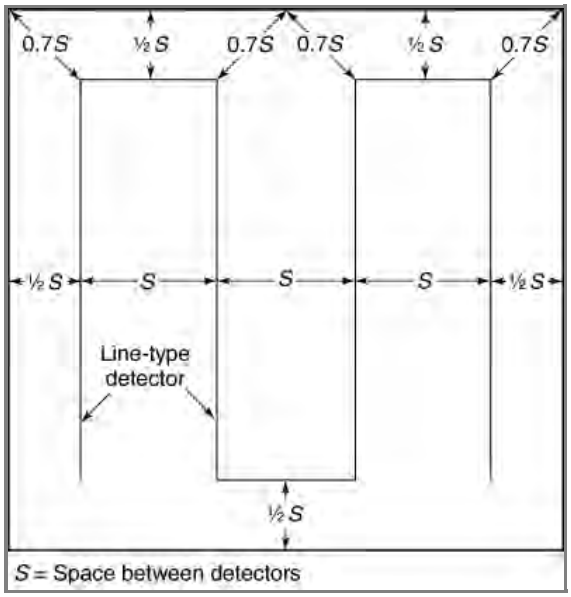


Figure A.17.6.3.1.1(c) Fire Test Layout.

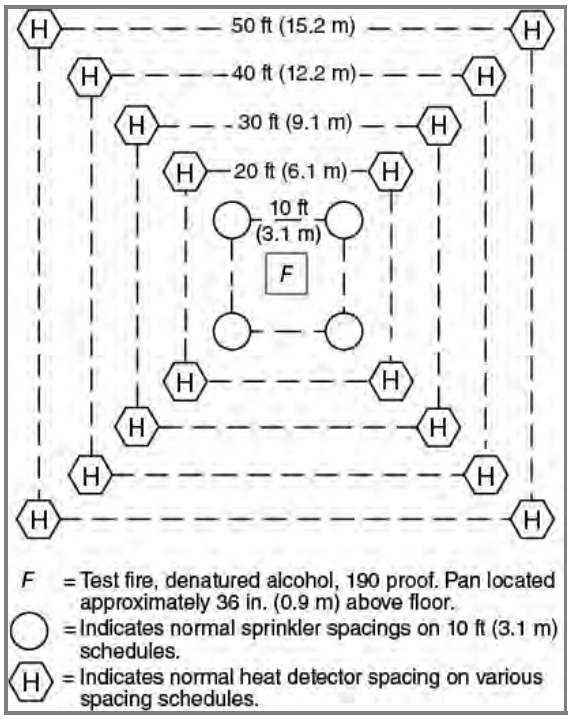


Figure A.17.6.3.1.1(d) Detector Covering any Square Laid Out in Confines of Circle in Which Radius Is 0.7 Times Listed Spacing.

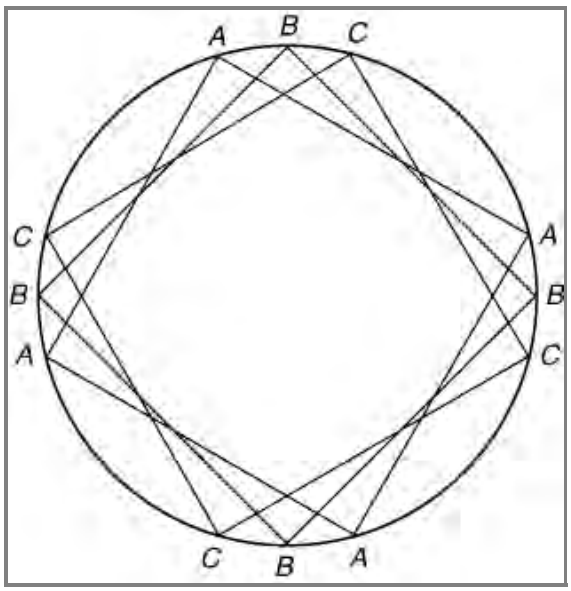


Figure A.17.6.3.1.1(e) Typical Rectangles for Detector Curves of 15 ft to 50 ft.

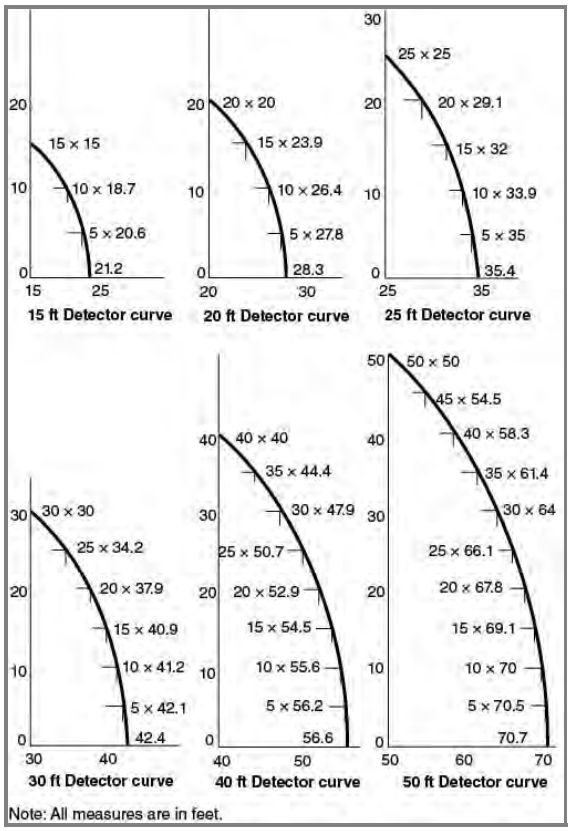


Figure A.17.6.3.1.1(f) Typical Rectangles for Detector Curves of 4.6 m to 15.2 m.

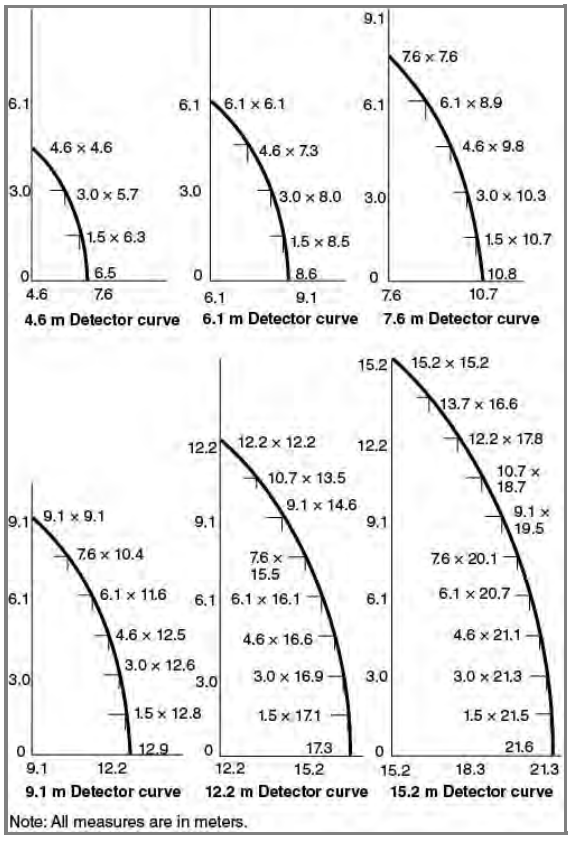


Figure A.17.6.3.1.1(g) Detector Spacing, Rectangular Areas.

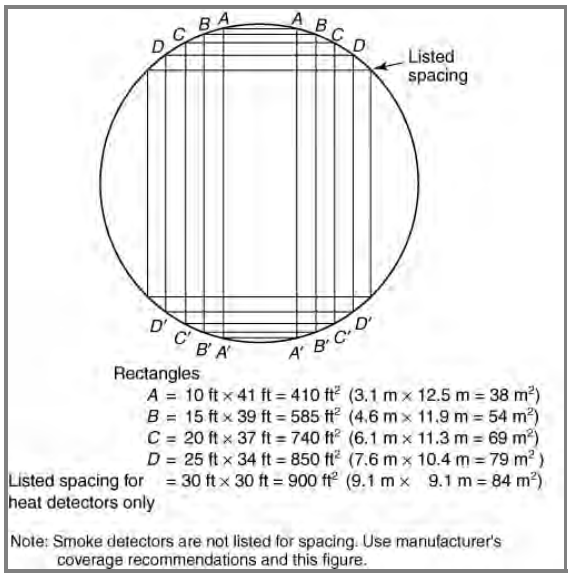
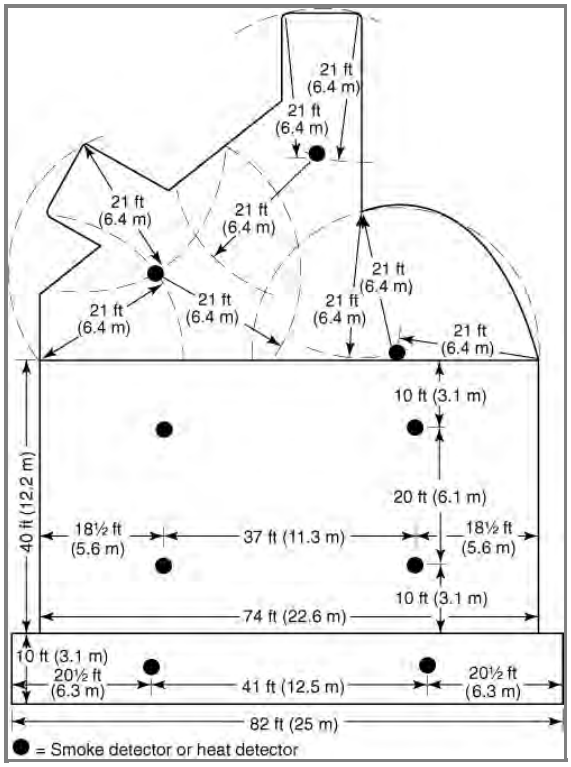


Figure A.17.6.3.1.1(h) Smoke or Heat Detector Spacing Layout in Irregular Areas.



Additional Proposed Changes

File Name	Description	Approved
A.17.6.3.1.1_e_.pdf	30 ft Detector curve with updated spacing for 15 ft dimension matching Figure A.17.6.3.1.1(g) letter B Rectangle and following the "0.7 times" rule	

Statement of Problem and Substantiation for Public Input

30 ft Detector curve with updated spacing for 15 ft dimension matching Figure A.17.6.3.1.1(g) letter B Rectangle and following the "0.7 times" rule

Submitter Information Verification

Submitter Full Name: Nick Bryant
Organization: NECA IBEW Training Center
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Zip:
Submittal Date: Wed Apr 27 12:58:33 EDT 2022
Committee: SIG-IDS

Committee Statement

Resolution: FR-5285-NFPA 72-2022
Statement: Revised 30 ft Detector curve with updated spacing for 15 ft dimension matching Figure A.17.6.3.1.1(g) letter B Rectangle and following the "0.7 times" rule.

Public Input No. 184-NFPA 72-2022 [Section No. A.17.7.1.11]

A.17.7.1.11

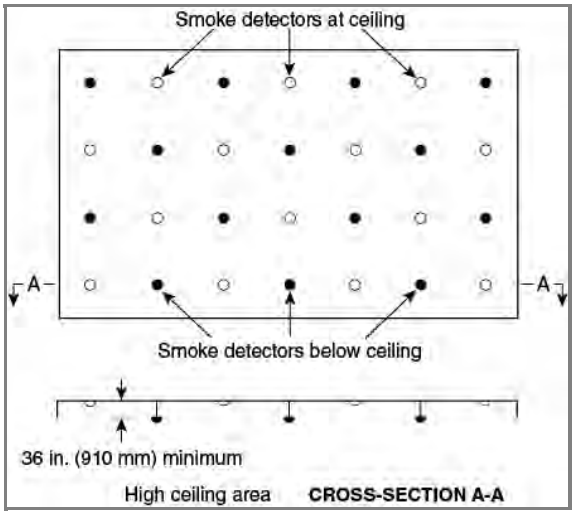
Stratification of air in a room can hinder air containing smoke particles or gaseous combustion products from reaching ceiling-mounted smoke detectors or fire–gas detectors.

Stratification occurs when air containing smoke particles or gaseous combustion products is heated by smoldering or burning material and, becoming less dense than the surrounding cooler air, rises until it reaches a level at which there is no longer a difference in temperature between it and the surrounding air.

Stratification also can occur when evaporative coolers are used, because moisture introduced by these devices can condense on smoke, causing it to fall toward the floor. Therefore, to ensure rapid response, it might be necessary to install smoke detectors on sidewalls or at locations below the ceiling.

In installations where detection of smoldering or small fires is desired and where the possibility of stratification exists, consideration should be given to mounting a portion of the detectors below the ceiling. In high-ceiling areas, projected beam–type or air sampling–type detectors at different levels also should be considered. *(See Figure A.17.7.1.11.)* Video image smoke detectors can overcome the effects of stratification because they will potentially detect any smoke that is within its field of view. That is, the smoke does not need to rise to the level of the detector for effective sensing.

Figure A.17.7.1.11 Smoke Detector Layout Accounting for Stratification.



Statement of Problem and Substantiation for Public Input

Video image smoke detectors are uniquely able to detect smoke plumes where stratification may be an issue because the smoke need not rise to the level of the detector for sensing. It is only required that the smoke be able to be imaged and appear in the field of view of the camera.

Submitter Information Verification

Submitter Full Name: Scott Lang
Organization: Honeywell International
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City:
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Submittal Date: Wed Mar 09 11:00:06 EST 2022
Committee: SIG-IDS

Committee Statement

Resolution: FR-5321-NFPA 72-2022

Statement: Video image smoke detectors are uniquely able to detect smoke plumes where stratification may be an issue because the smoke need not rise to the level of the detector for sensing. It is only required that the smoke be able to be imaged and appear in the field of view of the camera.

Public Input No. 245-NFPA 72-2022 [Section No. A.17.7.2]

A.17.7.2.2

Construction debris, dust (especially gypsum dust and the fines resulting from the sanding of drywall joint compounds), and aerosols can affect the sensitivity of smoke detectors and, in some instances, cause deleterious effects to the detector, thereby significantly reducing the expected life of the detector.

Statement of Problem and Substantiation for Public Input

See PI-244 for substantiation

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 244-NFPA 72-2022 [Section No. 17.7.2]	
Public Input No. 244-NFPA 72-2022 [Section No. 17.7.2]	

Submitter Information Verification

Submitter Full Name: Joe Scibetta
Organization: BuildingReports
Street Address:
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Submittal Date: Tue Apr 26 11:09:24 EDT 2022
Committee: SIG-IDS

Committee Statement

Resolution: This is existing language that does not need to be numbered based on the action taken on Public Input 244 to Section 17.7.2.

Public Input No. 181-NFPA 72-2022 [Section No. A.17.7.7.2]

A.17.7.7.2

For the most effective detection of fire in high-rack storage areas, detectors should be located on the ceiling above each aisle and at intermediate levels in the racks. This is necessary to detect smoke that is trapped in the racks at an early stage of fire development when insufficient thermal energy is released to carry the smoke to the ceiling. Earliest detection of smoke is achieved by locating the intermediate level detectors adjacent to alternate pallet sections as shown in Figure A.17.7.7.2(a) and Figure A.17.7.7.2(b). The detector manufacturer's published instructions and engineering judgment should be followed for specific installations.

A projected beam–type detector can be permitted to be used in lieu of a single row of individual spot-type smoke detectors.

Sampling ports of an air sampling–type detector can be permitted to be located above each aisle to provide coverage that is equivalent to the location of spot-type detectors. The manufacturer's published instructions and engineering judgment should be followed for the specific installation.

Video smoke detectors can be a suitable option in rack storage provided the manufacturer's recommendations for ambient lighting and other guidelines can be met. Smoke need not rise to the level of the detector to be sensed.

Figure A.17.7.7.2(a) Detector Location for Solid Storage (Closed Rack) in Which Transverse and Longitudinal Flue Spaces Are Irregular or Nonexistent, as for Slatted or Solid Shelved Storage.

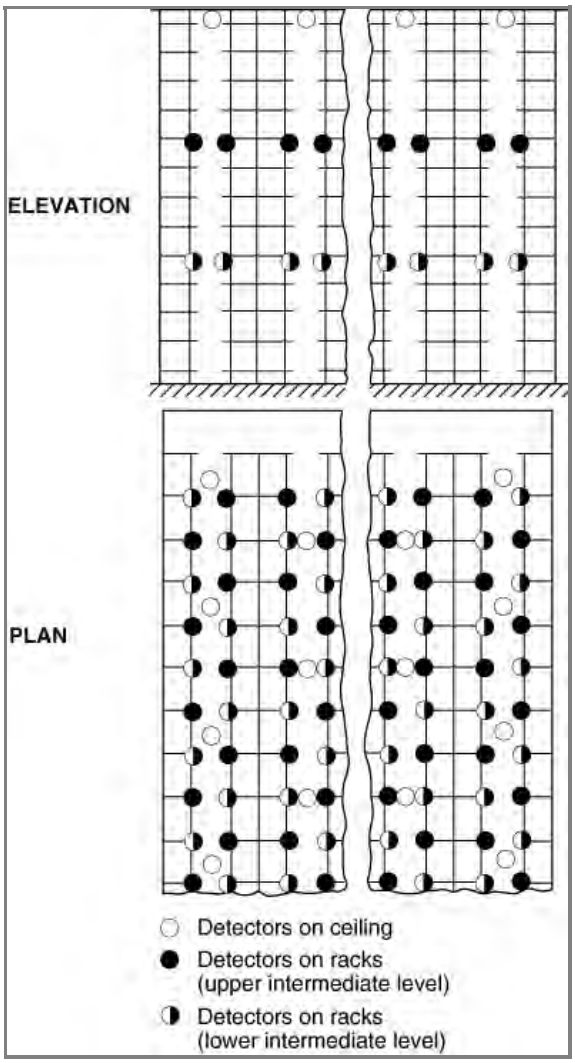
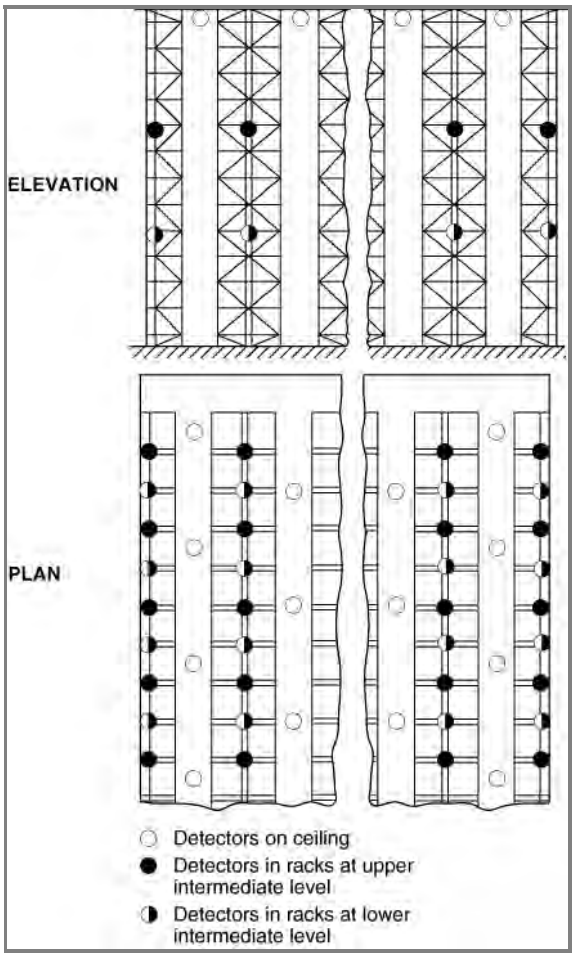


Figure A.17.7.7.2(b) Detector Location for Palletized Storage (Open Rack) or No Shelved Storage in Which Regular Transverse and Longitudinal Flue Spaces Are Maintained.



Statement of Problem and Substantiation for Public Input

The existing annex material specifically mentions beam and air sampling-type detectors. Video smoke detection is also a viable technology as long as manufacturer's published instructions are followed.

Submitter Information Verification

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Zip:
Submittal Date: Wed Mar 09 10:51:44 EST 2022
Committee: SIG-IDS

Committee Statement

Resolution: FR-5326-NFPA 72-2022
Statement: The existing annex material specifically mentions beam and air sampling-type detectors. Video smoke detection is also a viable technology as long as manufacturer's published instructions are followed.

Public Input No. 107-NFPA 72-2022 [New Section after A.17.7.7.3.3]

A.17.7.7.3.3.3

Projected beam smoke detectors integrate smoke density across the protected space and may not require spacing reduction in high airflows. Similarly, air sampling smoke detectors may benefit from aspiration or accumulative sensing wherein smoke is drawn into more than one sampling port. Manufacturer's published instructions should be followed.

Statement of Problem and Substantiation for Public Input

Added Annex material provides additional explanation as to why the spot-type detector spacing reduction table should not be used for aspirated or beam-type smoke detectors.

Submitter Information Verification

Submitter Full Name: Scott Lang
Organization: Honeywell International
Street Address:
City:
State:
Zip:
Submittal Date: Fri Jan 21 13:44:25 EST 2022
Committee: SIG-IDS

Committee Statement

Resolution: FR-5367-NFPA 72-2022
Statement: The annex information provides direction on implementation of projected beam or air-sampling detectors in high air movement areas.

Public Input No. 182-NFPA 72-2022 [New Section after A.17.8.5.4]

A.17.8.5.6

The following are types of applications for which video image flame detectors are suitable:

(1) High-ceiling, open-spaced buildings such as warehouses and aircraft hangars

(2) Areas where rapidly developing flaming fires can occur, such as aircraft hangars, petrochemical production areas, storage and transfer areas, natural gas installations, paint shops, or solvent areas

(3) Areas needing high fire risk machinery or installations

(4) Environments that are unsuitable for other types of detectors

Statement of Problem and Substantiation for Public Input

This new annex material describes some applications that VIFD are suitable. The applications are similar, but not identical to radiant energy flame detectors.

Submitter Information Verification

Submitter Full Name: Scott Lang
Organization: Honeywell International
Street Address:
City:
State:
Zip:
Submittal Date: Wed Mar 09 10:55:06 EST 2022
Committee: SIG-IDS

Committee Statement

Resolution: The recommended text is not needed as it is currently covered by Section 17.8.3.1.

Public Input No. 516-NFPA 72-2022 [Sections A.17.12.1, A.17.12.1(1), A.17.12.1(2), A.17.12.1(3...]

Sections A.17.12.1, A.17.12.1(1), A.17.12.1(2), A.17.12.1(3), A.17.12.1(4)

A.17.12.1

Additional documents such as NEMA SB-7, *Applications Guide for Carbon Monoxide Alarms and Detectors*, and the NFPA Fire Protection Research Foundation (FPRF) technical report, *Development of a Technical Basis for Carbon Monoxide Detector Siting*, can also be used as supplemental resources to help with risk assessment, siting, and application considerations.

(1)* On the ceiling or on the wall with the top of the detector within 12 inches of the ceiling, where installed in the same room as permanently installed fuel-buring appliances;

A.17.12.1(1)

~~Both permanent and temporary carbon-monoxide-producing devices need to be considered when locating carbon monoxide detectors. This includes accounting for all carbon-monoxide-producing appliances and equipment and temporary/mobile equipment, including vehicles, generators, machinery, engines, internal combustion engines, propane equipment, space heaters, engine-driven tools, grills, fire pits, systems used to generate hydrogen, fuel-burning equipment, and any other permanent and/or transient-type equipment and appliances that can be sources of carbon monoxide.~~

By placing carbon monoxide detectors close to all permanent as well as all temporary carbon-monoxide-producing sources, early detection of carbon monoxide is more likely to occur. Detectors should therefore be located as close as practicable to the carbon-monoxide-producing source, taking into account such factors as detector accessibility for inspection, testing, and maintenance; potential sources of detector damage or contamination; potential nuisance alarm sources; transient backdrafting spillage of flue gases during startup and operation; and ventilation supply and exhaust vents. For early detection, carbon monoxide detectors should be located on the ceiling over carbon-monoxide-producing sources. There is often some buoyancy of the heated combustion gases that can help carry the carbon monoxide to the detector.

Carbon monoxide detectors should also be considered throughout the room/space that contains the carbon-monoxide-producing source to help address either limited or no buoyancy of the carbon monoxide, adverse impacts by HVAC systems, as well as ambient airflows in the space that can carry carbon monoxide away from the source rather than up to the ceiling directly over the source.

(2)* Centrally located in the HVAC zones of the areas required by laws, codes or standards;

A.17.12.1(2)

~~Carbon monoxide can follow flow paths from its original source to adjacent areas in the building, including moving horizontally and vertically throughout the space, building, and structure, and where carbon monoxide detectors should be located in these adjacent areas needs to be considered. Detector location and spacing should be based on an engineering evaluation that considers potential sources and migration of carbon monoxide, including through exhaust ductwork, HVAC equipment, openings in walls and floors, unprotected penetrations, and elevator shafts.~~

~~As some of the higher carbon monoxide concentrations are often at the source and within the exhaust ductwork and venting equipment, carbon monoxide detectors should be located along the exhaust path of any carbon-monoxide-producing equipment, appliances, and so forth, extending from the source of the carbon monoxide through the building to the termination of the exhaust at an exterior wall or roof. This should include detectors along any duct branch lines and interconnections to any ductwork and piping used in the exhaust system so carbon monoxide that might exist outside the exhaust path (due to leaks, damage, obstructions, rust, corrosion, etc.) can be detected.~~

The impact of HVAC systems should be taken into account when locating carbon monoxide detectors. HVAC systems can transport as well as mix and dilute carbon monoxide. Consideration should be given to the layout and operation of the HVAC system and whether the HVAC is constantly running or only runs for a portion of the time and, therefore, is not constantly distributing or mixing air in the building. ~~When~~ An HVAC zone is an area that is independently climatically controlled from other areas. Centrally located is defined as the geometric center of a physical area, i.e. the centroid.

A.17.12.1(3)

Outside of each separate sleeping area, guest room, and guest suite within 21 ft (6.4m) of any door to a sleeping room, with the distance measured along a path of travel.

(4) In each area separated by normally closed doors.

A.17.12.1(4)

When locating carbon monoxide detectors, other considerations include the presence and impact of closed doors and walls.

~~These~~

These can compartmentalize areas within an individual HVAC zone or floor and prevent spread. Their presence can also allow carbon monoxide to accumulate more rapidly in given areas if doors are closed to contain it and

~~not~~

allow it to spread and dilute the concentration.

~~Carbon monoxide can potentially enter the building from an exterior source, such as through make-up air systems. Some of the external sources that should be considered when locating carbon monoxide detectors include adjacent structures, exterior systems, equipment such as vehicles and generators, and interconnections to underground spaces or parking garages.~~

~~**A.17.12.1(3)**~~

~~Carbon monoxide detectors should be considered within each bedroom, dwelling unit, guest room, guest suite, and sleeping area, as well as the potential for multiple detectors in multiroom suites. Additional detectors in these spaces can provide more appropriate protection for people while awake or asleep.~~

(5)* Other locations where required by applicable laws, codes or standards.

(6) in accordance with manufacturer's published instructions.

A.17.12.1(

4

6)

–

-

~~Carbon~~

~~monoxide~~

~~Monoxide~~ ~~detectors should~~

~~also~~

~~be located and installed as recommended by the~~

~~manufacturer's~~

~~manufacturer's~~ ~~published instructions, including those specific requirements for the spacing between detectors, minimum/maximum~~

~~spacings to walls and obstructions, minimum/maximum height of a detector in a space, minimum/maximum~~

~~distances to HVAC vents, reductions in spacing required for~~

~~high ceilings~~

~~high ceilings~~ ~~, and other pertinent information required to help properly design, assess, and install detectors to achieve their intent of detecting carbon monoxide early on to warn occupants of a hazard.~~

Additional Proposed Changes

File Name	Description	Approved
NFPA_72_BS_SB_17-12-1_comments.docx	clarity of A17.12.1 revisions	

Statement of Problem and Substantiation for Public Input

This Public Input seeks to remove conflicts between the various ICC and NFPA model codes (fire and building) and NFPA 72. As written in the 2022 edition of NFPA 72, section 17.12.1 requires CO detection in certain rooms or areas. However, the Fire Code takes precedence with respect to when and in what type of occupancy carbon monoxide detection is required. We have rewritten this section to focus on how and physically where to install detection when it is required in an area by the building code or laws. The rewritten requirements focus on the specific conclusions of the 2007 Fire Protection Research Foundation report entitled, “Development of a Technical Basis for Carbon Monoxide Detector Siting.”

Submitter Information Verification

Submitter Full Name: Megan Hayes
Organization: Nema
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 09:18:54 EDT 2022

Committee: SIG-IDS

Committee Statement

Resolution: FR-5333-NFPA 72-2022

Statement: The installation requirements for carbon monoxide detectors have been updated to correlate with the requirements of the model codes and are based on the 2007 FPRF report “Development of a Technical Basis for Carbon Monoxide Detector Siting”. The annex language removes conflicts between the model codes and NFPA 72. The body and annex were rewritten to focus on how to install carbon monoxide detectors when they are required by adopted codes. These changes are based on the 2007 FPRF report “Development of a Technical Basis for Carbon Monoxide Detector Siting”. The committee notes that there is a continuing need for research on the dominant transport mechanisms for carbon monoxide.

Public Input No. 398-NFPA 72-2022 [Section No. A.17.12.1(2)]

A.17.12.1(2)

~~Carbon monoxide can follow flow paths from its original source to adjacent areas in the building, including moving horizontally and vertically throughout the space, building, and structure, and where carbon monoxide detectors should be located in these adjacent areas needs to be considered. Detector location and spacing should be based on an engineering evaluation that considers potential sources and migration of carbon monoxide, including through exhaust ductwork, HVAC equipment, openings in walls and floors, unprotected penetrations, and elevator shafts.~~

~~As some of the higher carbon monoxide concentrations are often at the source and within the exhaust ductwork and venting equipment, carbon monoxide detectors should be located along the exhaust path of any carbon-monoxide-producing equipment, appliances, and so forth, extending from the source of the carbon monoxide through the building to the termination of the exhaust at an exterior wall or roof. This should include detectors along any duct branch lines and interconnections to any ductwork and piping used in the exhaust system so carbon monoxide that might exist outside the exhaust path (due to leaks, damage, obstructions, rust, corrosion, etc.) can be detected.~~

The impact of HVAC systems should be taken into account when locating carbon monoxide detectors. HVAC systems can transport as well as mix and dilute carbon monoxide. Consideration should be given to the layout and operation of the HVAC system and whether the HVAC is constantly running or only runs for a portion of the time and, therefore, is not constantly distributing or mixing air in the building. ~~When locating carbon monoxide detectors, other considerations include the presence and impact of closed doors and walls. These can compartmentalize areas within an individual HVAC zone or floor and prevent spread. Their presence can also allow carbon monoxide to accumulate more rapidly in given areas if doors are closed to contain it and not allow it to spread and dilute the concentration.Carbon monoxide can potentially enter the building from an exterior source, such as through make-up air systems. Some of the external sources that should be considered when locating carbon monoxide detectors include adjacent structures, exterior systems, equipment such as vehicles and generators, and interconnections to underground spaces or parking garages~~ An HVAC zone is an area that is independently climatically controlled from other areas. Centrally located defined as the geometric center of a physical area, i.e., the centroid .

Statement of Problem and Substantiation for Public Input

The proposed text changes here comport with revised text proposed for chapter 17.

Submitter Information Verification

Submitter Full Name: Chris Heaton
Organization: Electronic Security Association
Affiliation: Electronic Security Association
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 25 18:33:00 EDT 2022
Committee: SIG-IDS

Committee Statement

Resolution: FR-5333-NFPA 72-2022

Statement: The installation requirements for carbon monoxide detectors have been updated to correlate with the requirements of the model codes and are based on the 2007 FPRF report “Development of a Technical Basis for Carbon Monoxide Detector Siting”. The annex language removes conflicts between the model codes and NFPA 72. The body and annex were rewritten to focus on how to install carbon monoxide detectors when they are required by adopted codes. These changes are based on the 2007 FPRF report “Development of a Technical Basis for Carbon Monoxide Detector Siting”. The committee notes that there is a continuing need for research on the dominant transport mechanisms for carbon monoxide.

Public Input No. 485-NFPA 72-2022 [Section No. A.17.12.1(2)]

A.17.12.1(2)

Carbon monoxide can follow flow paths from its original source to adjacent areas in the building, including moving horizontally and vertically throughout the space, building, and structure, and where carbon monoxide detectors should be located in these adjacent areas needs to be considered. Detector location and spacing should be based on an engineering evaluation that considers potential sources and migration of carbon monoxide, including through exhaust ductwork, HVAC equipment, openings in walls and floors, unprotected penetrations, and elevator shafts.

As some of the higher carbon monoxide concentrations are often at the source and within the exhaust ductwork and venting equipment, carbon monoxide detectors should be located along the exhaust path of any carbon-monoxide-producing equipment, appliances, and so forth, extending from the source of the carbon monoxide through the building to the termination of the exhaust at an exterior wall or roof. This should include detectors along any duct branch lines and interconnections to any ductwork and piping used in the exhaust system so carbon monoxide that might exist outside the exhaust path (due to leaks, damage, obstructions, rust, corrosion, etc.) can be detected.

A.17.12.1 (2) The impact of HVAC systems should be taken into account when locating carbon monoxide detectors.

~~HVAC~~

HVAC systems can transport as well as mix and dilute carbon monoxide. Consideration should be given to the layout and operation of the HVAC system and whether the HVAC is constantly running or only runs for a portion of the time and, therefore, is not constantly distributing or mixing air in the building .

~~When~~

An HVAC zone is an area that is independently climatically controlled from other areas. Centrally located is defined as the geometric center of a physical area, i.e., the centroid. ~~When~~ ~~locating carbon monoxide detectors~~, other considerations include the presence and impact of closed doors and walls.

~~These~~

~~These~~ can compartmentalize areas within an individual HVAC zone or floor and prevent spread. Their presence can also allow carbon monoxide to accumulate more rapidly in given areas if doors are closed to contain it and not allow it to spread and dilute the concentration.

Carbon monoxide can potentially enter the building from an exterior source, such as through make-up air systems. Some of the external sources that should be considered when locating carbon monoxide detectors include adjacent structures, exterior systems, equipment such as vehicles and generators, and interconnections to underground spaces or parking garages.

Additional Proposed Changes

File Name	Description	Approved
NFPA_72_BS_SB_17-12-1_comments.docx		

Statement of Problem and Substantiation for Public Input

This Public Input seeks to remove conflicts between the various ICC and NFPA model codes (fire and building) and NFPA 72. As written in the 2022 edition of NFPA 72, section 17.12.1 requires CO detection in certain rooms or areas. However, the Fire Code takes precedence with respect to when and in what type of occupancy carbon monoxide detection is required. We have rewritten this section to focus on how and physically where to install detection when it is required in an area by the building code or laws. The rewritten requirements focus on the specific conclusions of the 2007 Fire Protection Research Foundation report entitled, “Development of a Technical Basis for Carbon Monoxide Detector Siting.”

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 482-NFPA 72-2022 [Section No. 17.12.1]	

Submitter Information Verification

Submitter Full Name: Tim Knisely
Organization: Automatic Fire Alarm Association (AFAA)
Affiliation: Automatic Fire Alarm Association (AFAA)
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 27 13:39:46 EDT 2022
Committee: SIG-IDS

Committee Statement

Resolution: FR-5333-NFPA 72-2022

Statement: The installation requirements for carbon monoxide detectors have been updated to correlate with the requirements of the model codes and are based on the 2007 FPRF report “Development of a Technical Basis for Carbon Monoxide Detector Siting”. The annex language removes conflicts between the model codes and NFPA 72. The body and annex were rewritten to focus on how to install carbon monoxide detectors when they are required by adopted codes. These changes are based on the 2007 FPRF report “Development of a Technical Basis for Carbon Monoxide Detector Siting”. The committee notes that there is a continuing need for research on the dominant transport mechanisms for carbon monoxide.

Public Input No. 400-NFPA 72-2022 [New Section after A.17.12.1(3)]

A.17.12.1 (4)

When locating carbon monoxide detectors, other considerations include the presence and impact of closed doors and walls. These can compartmentalize areas within an individual HVAC zone or floor and prevent spread. Their presence can also allow carbon monoxide to accumulate more rapidly in given areas if doors are closed to contain it and not allow it to spread and dilute the concentration.

Statement of Problem and Substantiation for Public Input

Annex material for added section with chapter 17.12.1 (4)

Submitter Information Verification

Submitter Full Name: Chris Heaton
Organization: Electronic Security Association
Affiliation: Electronic Security Association
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 25 18:43:43 EDT 2022
Committee: SIG-IDS

Committee Statement

Resolution: FR-5333-NFPA 72-2022

Statement: The installation requirements for carbon monoxide detectors have been updated to correlate with the requirements of the model codes and are based on the 2007 FPRF report “Development of a Technical Basis for Carbon Monoxide Detector Siting”. The annex language removes conflicts between the model codes and NFPA 72. The body and annex were rewritten to focus on how to install carbon monoxide detectors when they are required by adopted codes. These changes are based on the 2007 FPRF report “Development of a Technical Basis for Carbon Monoxide Detector Siting”. The committee notes that there is a continuing need for research on the dominant transport mechanisms for carbon monoxide.

Public Input No. 399-NFPA 72-2022 [Section No. A.17.12.1(3)]

A.17.12.1(3)

~~Carbon monoxide detectors should be considered within each bedroom, dwelling unit, guest room, guest suite, and sleeping area, as well as the potential for multiple detectors in multiroom suites. Additional detectors in these spaces can provide more appropriate protection for people while awake or asleep.~~

Statement of Problem and Substantiation for Public Input

Incorporated into proposed revision to Chapter 17.12.1

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 397-NFPA 72-2022 [Section No. 17.12.1]	related chapter to this revision in annex

Submitter Information Verification

Submitter Full Name: Chris Heaton
Organization: Electronic Security Association
Affiliation: Electronic Security Association
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 25 18:40:01 EDT 2022
Committee: SIG-IDS

Committee Statement

Resolution: FR-5333-NFPA 72-2022

Statement: The installation requirements for carbon monoxide detectors have been updated to correlate with the requirements of the model codes and are based on the 2007 FPRF report “Development of a Technical Basis for Carbon Monoxide Detector Siting”. The annex language removes conflicts between the model codes and NFPA 72. The body and annex were rewritten to focus on how to install carbon monoxide detectors when they are required by adopted codes. These changes are based on the 2007 FPRF report “Development of a Technical Basis for Carbon Monoxide Detector Siting”. The committee notes that there is a continuing need for research on the dominant transport mechanisms for carbon monoxide.

Public Input No. 486-NFPA 72-2022 [Section No. A.17.12.1(3)]

A.17.12.1(3)

~~Carbon monoxide detectors should be considered within each bedroom, dwelling unit, guest room, guest suite, and sleeping area, as well as the potential for multiple detectors in multiroom suites. Additional detectors in these spaces can provide more appropriate protection for people while awake or asleep.~~

Additional Proposed Changes

File Name	Description	Approved
NFPA_72_BS_SB_17-12-1_comments.docx		

Statement of Problem and Substantiation for Public Input

This Public Input seeks to remove conflicts between the various ICC and NFPA model codes (fire and building) and NFPA 72. As written in the 2022 edition of NFPA 72, section 17.12.1 requires CO detection in certain rooms or areas. However, the Fire Code takes precedence with respect to when and in what type of occupancy carbon monoxide detection is required. We have rewritten this section to focus on how and physically where to install detection when it is required in an area by the building code or laws. The rewritten requirements focus on the specific conclusions of the 2007 Fire Protection Research Foundation report entitled, “Development of a Technical Basis for Carbon Monoxide Detector Siting.”

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 482-NFPA 72-2022 [Section No. 17.12.1]	

Submitter Information Verification

Submitter Full Name: Tim Knisely
Organization: Automatic Fire Alarm Association (AFAA)
Affiliation: Automatic Fire Alarm Association (AFAA)
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 27 13:42:26 EDT 2022
Committee: SIG-IDS

Committee Statement

Resolution: FR-5333-NFPA 72-2022

Statement: The installation requirements for carbon monoxide detectors have been updated to correlate with the requirements of the model codes and are based on the 2007 FPRF report “Development of a Technical Basis for Carbon Monoxide Detector Siting”. The annex language removes conflicts between the model codes and NFPA 72. The body and annex were rewritten to focus on how to install carbon monoxide detectors when they are required by adopted codes. These changes are based on the 2007 FPRF report “Development of a Technical Basis for Carbon Monoxide Detector Siting”. The committee notes that there is a continuing need for research on the dominant transport mechanisms for carbon monoxide.

Public Input No. 487-NFPA 72-2022 [Section No. A.17.12.1(4)]

A.17.12.1(4)

A.17.12.1 (4) When locating carbon monoxide detectors, other considerations include the presence and impact of closed doors and walls. These can compartmentalize areas within an individual HVAC zone or floor and prevent spread. Their presence can also allow carbon monoxide to accumulate more rapidly in given areas if doors are closed to contain it and not allow it to spread and dilute the concentration.

A.17.12.1 (6) Carbon monoxide detectors should also be located and installed as recommended by the manufacturer's published instructions, including those specific requirements for the spacing between detectors, minimum/maximum spacings to walls and obstructions, minimum/maximum height of a detector in a space, minimum/maximum distances to HVAC vents, reductions in spacing required for high ceilings, and other pertinent information required to help properly design, assess, and install detectors to achieve their intent of detecting carbon monoxide early on to warn occupants of a hazard.

Additional Proposed Changes

File Name	Description	Approved
NFPA_72_BS_SB_17-12-1_comments.docx		

Statement of Problem and Substantiation for Public Input

This Public Input seeks to remove conflicts between the various ICC and NFPA model codes (fire and building) and NFPA 72. As written in the 2022 edition of NFPA 72, section 17.12.1 requires CO detection in certain rooms or areas. However, the Fire Code takes precedence with respect to when and in what type of occupancy carbon monoxide detection is required. We have rewritten this section to focus on how and physically where to install detection when it is required in an area by the building code or laws. The rewritten requirements focus on the specific conclusions of the 2007 Fire Protection Research Foundation report entitled, "Development of a Technical Basis for Carbon Monoxide Detector Siting."

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 482-NFPA 72-2022 [Section No. 17.12.1]	

Submitter Information Verification

Submitter Full Name: Tim Knisely
Organization: Automatic Fire Alarm Association (AFAA)
Affiliation: Automatic Fire Alarm Association (AFAA)
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 27 13:45:03 EDT 2022

Committee: SIG-IDS

Committee Statement

Resolution: FR-5333-NFPA 72-2022

Statement: The installation requirements for carbon monoxide detectors have been updated to correlate with the requirements of the model codes and are based on the 2007 FPRF report “Development of a Technical Basis for Carbon Monoxide Detector Siting”. The annex language removes conflicts between the model codes and NFPA 72. The body and annex were rewritten to focus on how to install carbon monoxide detectors when they are required by adopted codes. These changes are based on the 2007 FPRF report “Development of a Technical Basis for Carbon Monoxide Detector Siting”. The committee notes that there is a continuing need for research on the dominant transport mechanisms for carbon monoxide.

Public Input No. 218-NFPA 72-2022 [Section No. A.18.10.2]

A.18.10.2

Notification appliances are available for the deaf and hard of hearing. These appliances include, but are not limited to, supplemental tactical notification appliances. Such tactile notification appliances can be capable of awakening people. Tactile appliances can initiate in response to the activation of an audible smoke alarm, through hard wiring into the fire alarm system or by wireless methods.

Some tests show that visual notification appliances might not be effective in awakening some sleeping individuals during an emergency. Some tactile devices can be more effective in awakening individuals, regardless of hearing levels, from sleep. See the NFPA Fire Protection Research Foundation report, *Review of Alarm Technologies for Deaf and Hard of Hearing Populations*, August 2021, for further details.

Statement of Problem and Substantiation for Public Input

The NFPA Disability Access Review and Advisory Committee (DARAC) (www.nfpa.org/darac) requests that the referenced NFPA Fire Protection Research Foundation report be included in this section of the annex. This reference provides updated research and information that users of NFPA 72 may found applicable on this topic.

Submitter Information Verification

Submitter Full Name: Marsha Mazz
Organization: United Spinal Association
Affiliation: Representing the DARAC Advisory Committee
Street Address:
City:
State:
Zip:
Submittal Date: Thu Apr 14 10:34:42 EDT 2022
Committee: SIG-NAS

Committee Statement

Resolution: FR-5327-NFPA 72-2022
Statement: The FPRF report provides relevant information supporting this section and should be reference. Revised "tactical" to "tactile" to be consistent with the rest of the section.

Public Input No. 360-NFPA 72-2022 [Section No. A.21.2.4]

A.21.2.4

Emergency control function interface devices can be located far from the device to be actuated, such as air-handling units and exhaust fans located on the roof. The requirement for monitoring installation wiring for integrity only applies to the wiring between the fire alarm control unit and the emergency control function interface device. For example, it does not apply to the wiring between the emergency control function interface device and a motor stop/start control relay, or between the emergency control function interface device and the equipment to be controlled (e.g., air-handling units and exhaust fans). The location of the emergency control function interface device within 3 ft (910 mm) without conduit or 20 feet (6m) in conduit applies to the point of interface and not to remotely located equipment.

Where Class D circuits are utilized to actuate emergency control functions (such as but not limited to door closers, AHU shutdown, and damper controls), the fire alarm control point is not required to be within 3 ft (910 mm) without conduit or 20 feet (6m) in conduit of the interface point to the system or device to be controlled. It is important to note that in some cases these control circuits are not part of the fire alarm system but rather part of the other systems performing the functions. See Figure A.3.3.153.1.1 for additional details.

Statement of Problem and Substantiation for Public Input

Revise to be consistent with requirements of 12.6.9.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 359-NFPA 72-2022 [Section No. 21.2.4]	referenced section.
Public Input No. 361-NFPA 72-2022 [Section No. A.3.3.153.1.1]	

Submitter Information Verification

Submitter Full Name: Chris Heaton
Organization: Electronic Security Association
Affiliation: Electronic Security Association
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 24 17:29:33 EDT 2022
Committee: SIG-PRO

Committee Statement

Resolution: FR-5005-NFPA 72-2022
Statement: This change to 21.2.4 and A.21.2.4 is consistent with allowances in 12.6.9. Changes made to the proposed text were to ensure compliance with the MOS. The words metal raceway or metal armored cables were chosen to clarify that plastic raceways are not to be used.

Public Input No. 518-NFPA 72-2022 [Section No. A.21.2.4]

A.21.2.4

Emergency control function interface devices can be located far from the device to be actuated, such as air-handling units and exhaust fans located on the roof. The requirement for monitoring installation wiring for integrity only applies to the wiring between the fire alarm control unit and the emergency control function interface device. For example, it does not apply to the wiring between the emergency control function interface device and a motor stop/start control relay, or between the emergency control function interface device and the equipment to be controlled (e.g., air-handling units and exhaust fans). The location of the emergency control function interface device within 3 ft (~~910 mm)~~ 0.9m) without conduit or 20 feet (6m) in conduit applies to the point of interface and not to remotely located equipment.

Where Class D circuits are utilized to actuate emergency control functions (such as but not limited to door closers, AHU shutdown, and damper controls), the fire alarm control point is not required to be within 3 ft (~~910 mm)~~ 0.9m) without conduit or 20 feet (6m) in conduit of the interface point to the system or device to be controlled. It is important to note that in some cases these control circuits are not part of the fire alarm system but rather part of the other systems performing the functions. See Figure A.3.3.153.1.1 for additional details.

Statement of Problem and Substantiation for Public Input

Revise to be consistent with requirements of 12.6.9

Submitter Information Verification

Submitter Full Name: Megan Hayes
Organization: Nema
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 10:02:48 EDT 2022
Committee: SIG-PRO

Committee Statement

Resolution: FR-5005-NFPA 72-2022

Statement: This change to 21.2.4 and A.21.2.4 is consistent with allowances in 12.6.9. Changes made to the proposed text were to ensure compliance with the MOS. The words metal raceway or metal armored cables were chosen to clarify that plastic raceways are not to be used.

Public Input No. 206-NFPA 72-2022 [New Section after A.21.6.2.4]

TITLE OF NEW CONTENT

A.21.6.2.4.4

The manual floor selection means should operate as specified by the authority having jurisdiction. The authority having jurisdiction should specify if the manual selection means will be expanding the elevator evacuation zone simulating an automatic fire alarm initiating device or only as an individual floor without expanding the elevator evacuation zone.

Statement of Problem and Substantiation for Public Input

The authority having jurisdiction should specify how the manual floor selection means expands the elevator evacuation zone in order for the fire alarm system designer to know if additional signal(s) to the elevator system are required or not.

Submitter Information Verification

Submitter Full Name: Sagiv Weiss-Ishai
Organization: SF Fire Department
Affiliation: SFFD
Street Address:
City:
State:
Zip:
Submittal Date: Mon Apr 11 10:38:25 EDT 2022
Committee: SIG-PRO

Committee Statement

Resolution: FR-5021-NFPA 72-2022

Statement: When the Authority Having Jurisdiction determines the manual floor selection does not have the same operation as an automatic fire alarm initiating device, then additional output signals are required to be provided by the fire alarm system to the elevator system to distinguish how the elevator evacuation zone is to expand. Annex material is added to clarify the addition to 21.6.2.4.4.

Public Input No. 367-NFPA 72-2022 [New Section after A.21.6.2.4]

TITLE OF NEW CONTENT

A.21.6.2.4.4 The manual floor selection means should operate as specified by the authority having jurisdiction. The authority having jurisdiction should specify if the manual selection means will be expanding the elevator evacuation zone simulating an automatic fire alarm initiating device or only as an individual floor without expanding the elevator evacuation zone.

Statement of Problem and Substantiation for Public Input

The authority having jurisdiction can specify how the manual floor selection means expands the elevator evacuation zone.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 366-NFPA 72-2022 [Section No. 21.6.2.4]	

Submitter Information Verification

Submitter Full Name: Kevin Brinkman
Organization: National Elevator Industry, In
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 24 18:29:14 EDT 2022
Committee: SIG-PRO

Committee Statement

Resolution: FR-5021-NFPA 72-2022

Statement: When the Authority Having Jurisdiction determines the manual floor selection does not have the same operation as an automatic fire alarm initiating device, then additional output signals are required to be provided by the fire alarm system to the elevator system to distinguish how the elevator evacuation zone is to expand. Annex material is added to clarify the addition to 21.6.2.4.4.

Public Input No. 545-NFPA 72-2022 [New Section after A.21.6.2.4]

TITLE OF NEW CONTENT

The manual floor selection means should operate as specified by the authority having jurisdiction. The authority having jurisdiction should specify if the manual selection means will be expanding the elevator evacuation zone simulating an automatic fire alarm initiating device or only as an individual floor without expanding the elevator evacuation zone. Type your content here ...

Statement of Problem and Substantiation for Public Input

The authority having jurisdiction should specify how the manual floor selection means expands the elevator evacuation zone in order for the fire alarm system designer to know if additional signal(s) to the elevator system are required or not.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 544-NFPA 72-2022 [Section No. 21.6.2.4.4]	Annex to the requirement

Submitter Information Verification

Submitter Full Name: David McColl
Organization: Otis Canada Inc
Affiliation: National Elevator Industry, Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 16:03:16 EDT 2022
Committee: SIG-PRO

Committee Statement

Resolution: FR-5021-NFPA 72-2022

Statement: When the Authority Having Jurisdiction determines the manual floor selection does not have the same operation as an automatic fire alarm initiating device, then additional output signals are required to be provided by the fire alarm system to the elevator system to distinguish how the elevator evacuation zone is to expand. Annex material is added to clarify the addition to 21.6.2.4.4.

Public Input No. 332-NFPA 72-2022 [Section No. A.23.2.2.2]

A.23.2.2.2

A commonly used method of protecting against unauthorized changes can be described as follows (in ascending levels of access):

(1) *Access Level 1.* Access by persons who have a general responsibility for safety supervision, and who might be expected to investigate and initially respond to a fire alarm or trouble signal

(2) *Access Level 2.* Access by persons who have a specific responsibility for safety, and who are trained to operate the control unit

(3) *Access Level 3.* Access by ~~persons who~~ authorized personnel who are trained ~~and authorized~~ to do the following:

(4) Reconfigure the site-specific data held within the control unit, or controlled by it

(5) Maintain the control unit in accordance with the manufacturer's published instructions and data

(6) *Access Level 4.* Access by ~~persons~~ service or authorized personnel who are trained ~~and authorized~~ either to repair the control unit or to alter its site-specific data or operating system program, thereby changing its basic mode of operation

Statement of Problem and Substantiation for Public Input

The terms "Authorized Personnel" and "Service Personnel" are defined in chapter 3 and should be used in appropriate places within the Code including the Annex.

It is acknowledged that the Annex material is not mandatory - however, it is preferred to use Code defined terms from chapter 3 throughout the Code and Annex to be more clear and to prevent potential confusion.

For this specific section the terms "Authorized Personnel" is the most appropriate defined term for subsection (3) and the "Service Personnel" or "Authorized Personnel" is the most appropriate term for subsection (4)

Submitter Information Verification

Submitter Full Name: Sagiv Weiss-Ishai
Organization: San Francisco Fire Department
Affiliation: SFFD
Street Address:
City:
State:
Zip:
Submittal Date: Mon May 23 15:03:53 EDT 2022
Committee: SIG-PRO

Committee Statement

Resolution: FR-5086-NFPA 72-2022

Statement: This revision corrects the “operating system program” language to a defined term “executive software.” Used the term “authorized service personnel” to align with 23.8.2.11.3.

Public Input No. 404-NFPA 72-2022 [Section No. A.23.3.3.2]

A.23.3.3.2

Examples of dedicated function fire alarm systems ~~would include an elevator recall~~ include, but are not limited to one or more systems which monitor control and supervisory ~~control unit, as addressed in~~ 21.3.2 ~~, or a system used specifically to monitor sprinkler waterflow and supervisory functions~~ status of elevator recall sprinkler waterflow, emergency responder communications enhancement systems, carbon monoxide (CO) or other gas detection .

Statement of Problem and Substantiation for Public Input

Provides further clarification of the types of systems for which dedicated function systems can be used.

Submitter Information Verification

Submitter Full Name: Chris Heaton
Organization: Electronic Security Association
Affiliation: Electronic Security Association
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 25 18:58:07 EDT 2022
Committee: SIG-PRO

Committee Statement

Resolution: FR-5087-NFPA 72-2022
Statement: The revision provides clarity to 23.3.3.2.

Public Input No. 477-NFPA 72-2022 [Section No. A.23.3.3.2]

A.23.3.3.2

—

Examples of dedicated function fire alarm systems ~~would~~ include, but are not limited to one or more systems which monitor control and supervisory status of ~~an~~ elevator recall ~~control and supervisory control unit~~, ~~as addressed in 21.3.2, or a system used specifically to monitor~~ sprinkler waterflow ~~and supervisory~~ ~~functions~~, emergency responder communications enhancement systems, carbon monoxide (CO) or other gas detection.

Additional Proposed Changes

File Name	Description	Approved
NFPA_72_BS_SB_A_23_3_3_2_comments.docx		

Statement of Problem and Substantiation for Public Input

Provides further clarification of the types of systems for which dedicated function systems can be used.

Submitter Information Verification

Submitter Full Name: Tim Knisely
Organization: Automatic Fire Alarm Association (AFAA)
Affiliation: Automatic Fire Alarm Association (AFAA)
Street Address:
City:
State:
Zip:
Submittal Date: Fri May 27 11:46:12 EDT 2022
Committee: SIG-PRO

Committee Statement

Resolution: FR-5087-NFPA 72-2022
Statement: The revision provides clarity to 23.3.3.2.

Public Input No. 523-NFPA 72-2022 [Section No. A.23.3.3.2]

A.23.3.3.2

Examples of dedicated function fire alarm systems ~~would include an elevator recall control and supervisory control unit, as addressed in~~ ~~21.3.2~~ ~~, or a system used specifically to monitor sprinkler waterflow and supervisory functions~~ include, but are not limited to one or more systems which monitor control supervisory status of an elevator recall sprinkler waterflow emergency responder communications enhancement systems, carbon monoxide (CO) or other gas detection .

Statement of Problem and Substantiation for Public Input

Provides further clarification of the types of systems for which dedicated function systems can be used.

Submitter Information Verification

Submitter Full Name: Megan Hayes
Organization: Nema
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 31 10:21:21 EDT 2022
Committee: SIG-PRO

Committee Statement

Resolution: FR-5087-NFPA 72-2022
Statement: The revision provides clarity to 23.3.3.2.

Public Input No. 379-NFPA 72-2022 [Section No. A.24.3.9]

A.24.3.9

The design documents might include, but are not limited to, shop drawings, ~~input/output matrix~~ sequence of operation , battery calculations, notification appliance voltage drop and wattage calculations for visual notification appliances and loudspeakers, and product data sheets.

Statement of Problem and Substantiation for Public Input

The code currently allows a sequence of operation to be defined in narrative form or an input/output matrix. Changing the text to the more generic term acknowledges the narrative form, matrix, or other acceptable documents that define the sequence of operation.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 315-NFPA 72-2022 [Section No. 7.2.1]	
Public Input No. 315-NFPA 72-2022 [Section No. 7.2.1]	

Submitter Information Verification

Submitter Full Name: Herbert Hurst
Organization: Savannah River Nuclear Solutio
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 25 16:47:03 EDT 2022
Committee: SIG-ECS

Committee Statement

Resolution: FR-5276-NFPA 72-2022
Statement: The code currently allows a sequence of operation to be defined in narrative form or an input/output matrix. Changing the text to the more generic term acknowledges the narrative form, matrix, or other acceptable documents that define the sequence of operation.

Public Input No. 223-NFPA 72-2022 [Section No. A.24.4.8.3.2]

A.24.4.8.3.2

Only first responders or other trained authorized emergency personnel should be able to intentionally and manually silence or reset the automatic prerecorded message sequence. This is required to ensure the safe evacuation or relocation of all occupants regardless of the time it takes to complete this task. It should not be permitted to allow for an automatic termination.The alert status of visual appliances should be maintained. However, since the duration of the alarm is indeterminate, audible alerts and messaging that are periodically suspended can contribute to an improved response by the occupants. Suspending the audible portion of the alarm can support a better community response to the instructions, especially in the case where ~~the able-bodied are attempting to aid the infirm or emotionally challenged, or otherwise disabled occupants~~ the people with disabilities may be assisted by other occupants who are not trained by first responders .

Approved alternative fire alarm notification schemes, such as a sequence that contains only a fixed number of repetitions of the prerecorded messages and associated alert tones, or as indicated in 24.4.8.3.2, should be permitted as long as the occupants are effectively notified and are provided instructions in a timely and safe manner in accordance with the emergency response plan.

Research from the National Research Council of Canada, *Occupant Behaviour and Evacuation,* found “In public buildings, such as airport terminals or sport centres, occupant training is not practical; for these, much of the responsibility for safety will rest with staff. Consequently, staff training is paramount. Occupants are very likely to look for staff members to obtain information; they are regarded as knowledgeable, they are expected to know the situation, the best course of action and the closest exit. Whether heard on a loudspeaker or seen in uniform or wearing a name tag, staff are likely to be listened to.”

The National Council on Disability publication, *Effective Emergency Management: Making Improvements for Communities and People with Disabilities,* found “People with disabilities should not be viewed as one more special interest group that drains resources from the common pool. Accommodating this large group often translates into being better equipped to serve all people. Anyone, at any moment, can incur a disability, particularly during emergencies.” (Kailes and Enders 2006, p. 13).

Further, Shields, Boyce, and Silcock (1997) note that “staff trained in emergency evacuation should provide guidance to people who are evacuating public facilities. Familiar and trusted staff can alert a significant portion of the public in such instances and ensure an efficient evacuation.” On the basis of census results, Morrow (1999, p. 5) argues that a “sizable segment” of any community’s population will need additional assistance during evacuation.

Fire-related emergency relocation instructions and nonevacuation messages are repeated a minimum of three times. For prerecorded messages, the actual number of times the message sequence plays is indeterminate, and the interval between each sequence playing is not defined by code, but rather intended to be defined in the emergency response plan. Paragraph 24.4.8.3.2 requires that the entire message sequence, including the tone, is again repeated after a pause. So if the tone and partial evacuation message is repeated three times as required by 24.4.8.3.1, then after pausing for an interval of at least 180 seconds (or alternative time periods that are established — see the following paragraph), the entire message sequence (including tone) is repeated again three times, followed by another pause, and so on.

Research shows *(see Annex G: Guidelines for Emergency Communication Strategies for Buildings and Campuses)* that effective messages should be repeated at intervals, not consecutively. In determining the alternative interval times, consider the following:

(1) Too much time between message sequences could be misunderstood by occupants that the emergency has been resolved.

(2) Too much time between message sequences could communicate insufficiently the sense of urgency that is intended.

(3) Too little time between message sequences could impair the ability of occupants to comply with instructions, particularly for occupants that need assistance.

(4) Too little time between message sequences could make it difficult for occupants to mark a change in the message contents if partial evacuation or relocation instructions are changed and re-issued.

(5) On the loss of primary power, secondary power is required to support continuous notification for only 15 minutes. This time could be extended based on the period of repetition of automatic messages. Too little time between message sequences could exhaust power reserves before emergency first responders arrive, compromising their ability to manually transmit additional live evacuation or relocation messages.

Statement of Problem and Substantiation for Public Input

The NFPA Disability Access Review and Advisory Committee (DARAC) requests an update to the terminology used to describe individuals with disabilities. In general, we suggest using “people first” language to avoid characterizing a person or group of persons entirely by their disability. Also, where possible, we recommend substituting the appropriate technical term when describing building elements that are accessible to individuals with disabilities, rather than describing the element as being “for” such people. For example, we would say “accessible parking” instead of “handicap parking”. The substitute terms we recommend are found to be more acceptable to the disability community and its supporters and, therefore, demonstrate greater respect.

Additionally, a person who needs assistance may need to receive assistance from an individual who is not trained to assist. For example, a person who has a mobility disability could alert a person who is deaf or hard of hearing of an issue that requires attention.

Submitter Information Verification

Submitter Full Name: Marsha Mazz
Organization: United Spinal Association
Affiliation: Representing the DARAC Advisory Committee
Street Address:
City:
State:
Zip:
Submittal Date: Thu Apr 14 10:46:44 EDT 2022
Committee: SIG-ECS

Committee Statement

Resolution: FR-5278-NFPA 72-2022

Statement: The NFPA Disability Access Review and Advisory Committee (DARAC) requested an update to the terminology used to describe individuals with disabilities. Using “people first” language avoids characterizing a person or group of persons entirely by their disability. A person who needs assistance may need to receive assistance from an individual who is not trained to assist. For example, a person who has a mobility disability could alert a person who is deaf or hard of hearing of an issue that requires attention.

Public Input No. 499-NFPA 72-2022 [Section No. A.26.6.2.4]

A.26.6.2.4

A.26.6.2.4.1

The communications cloud is created by multiple telephone lines and multiple paths on the Internet. Under these circumstances, the requirements of Chapters 10 and 14, as required by 26.1.2, do not apply to devices comprising the communications cloud.

A.26.6.2.4.2

The requirements for Chapters 10 and 14, as required by 26.1.2 should apply to a communications cloud that uses a private non-utility based company to own, use and maintain equipment for the retransmission of signals from a protected premises to a Public Safety Answering Point (PSAP).

Statement of Problem and Substantiation for Public Input

Defined as a gateway, while part of a communications cloud, they are not maintained by a public utility but rather by a private, for profit entity. As such, the exemption that is provided by A.26.2.4.1 does not apply. A.26.6.2.4 as printed in the 2022 edition of NFPA 72 is now divided into two paragraphs.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 495-NFPA 72-2022 [Chapter 25]	New Chapter
Public Input No. 497-NFPA 72-2022 [New Section after 10.5.6.4.3]	New Qualifications
Public Input No. 498-NFPA 72-2022 [New Section after 3.3.63]	New Definition
Public Input No. 501-NFPA 72-2022 [Section No. A.26.6.2.4]	Revised Fig.
Public Input No. 495-NFPA 72-2022 [Chapter 25]	
Public Input No. 497-NFPA 72-2022 [New Section after 10.5.6.4.3]	
Public Input No. 498-NFPA 72-2022 [New Section after 3.3.63]	
Public Input No. 501-NFPA 72-2022 [Section No. A.26.6.2.4]	

Submitter Information Verification

Submitter Full Name: Shane Clary
Organization: Bay Alarm Company
Affiliation: Bay Alarm Company
Street Address:
City:
State:
Zip:
Submittal Date: Mon May 30 15:11:09 EDT 2022
Committee: SIG-SSS

Committee Statement

Resolution: A task group related to new Section 26.7 has been formed and annex material will be further developed by the task group.

Public Input No. 501-NFPA 72-2022 [Section No. A.26.6.2.4]

A.26.6.2.4

The communications cloud is created by multiple telephone lines and multiple paths on the Internet. Under these circumstances, the requirements of Chapters 10 and 14, as required by 26.1.2, do not apply to devices comprising the communications cloud.

In both figures, add a line form the Supervising Station box to a box that is labeled as Gateway. This would be shown as being with Chapter 25. From the box that is labeled as Gateway add a line to a second box that is labeled as Public Safety Answering Point (PSAP. This would be shown as being with Chapter 25.

Label as Fig. 26.6.2.4.2

Additional Proposed Changes

File Name	Description	Approved
Fig_26.2.1.2.jpeg	Revised Fig - Please refer to instructions	

Statement of Problem and Substantiation for Public Input

Signal that pass through a gateway, while part of a communications cloud, are now operated by a public utility. This proposed revised figure is intended to provide a block diagram of the signal and of the gateway from the protected premises through the gateway and then to the Public Safety Answering Point (PSAP). It is the intent through a number of Public Inputs that the integrity of the signal and the operation of the gateway for this means of signal transport is under the jurisdiction of NFPA 72 when used for fire alarm signaling.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 495-NFPA 72-2022 [Chapter 25]	New Chapter
Public Input No. 497-NFPA 72-2022 [New Section after 10.5.6.4.3]	New Qualifications
Public Input No. 498-NFPA 72-2022 [New Section after 3.3.63]	New Definition
Public Input No. 499-NFPA 72-2022 [Section No. A.26.6.2.4]	Revised Exception
Public Input No. 495-NFPA 72-2022 [Chapter 25]	
Public Input No. 497-NFPA 72-2022 [New Section after 10.5.6.4.3]	
Public Input No. 498-NFPA 72-2022 [New Section after 3.3.63]	
Public Input No. 499-NFPA 72-2022 [Section No. A.26.6.2.4]	

Submitter Information Verification

Submitter Full Name: Shane Clary
Organization: Bay Alarm Company
Affiliation: Bay Alarm Company
Street Address:
City:
State:

Zip:

Submittal Date: Mon May 30 15:18:40 EDT 2022

Committee: SIG-SSS

Committee Statement

Resolution: A task group related to new Section 26.7 has been formed and annex material will be further developed by the task group.

Public Input No. 219-NFPA 72-2022 [Section No. A.29.5.8]

A.29.5.8

Low frequency or tactile notification appliances such as bed shakers have been shown to be effective in waking those with normal hearing to profound hearing loss [CSE NIH report, 2005; Bruck and Thomas, 2009; Bruck, Thomas, and Ball, NFPA RF report, 2007]. Additionally, see the NFPA Fire Protection Research Foundation report, *Review of Alarm Technologies for Deaf and Hard of Hearing Populations* , August 2021, for further details.

Statement of Problem and Substantiation for Public Input

The NFPA Disability Access Review and Advisory Committee (DARAC) (www.nfpa.org/darac) requests that the referenced NFPA Fire Protection Research Foundation report be included in this section of the annex. This reference provides updated research and information that users of NFPA 72 may found applicable on this topic.

Submitter Information Verification

Submitter Full Name: Marsha Mazz
Organization: United Spinal Association
Affiliation: Representing the DARAC Advisory Committee
Street Address:
City:
State:
Zip:
Submittal Date: Thu Apr 14 10:37:43 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5203-NFPA 72-2022
Statement: The additional information provides more current data to support the requirement.

Public Input No. 586-NFPA 72-2022 [Sections A.29.5.10.1, A.29.5.10.1(2), A.29.5.10.2, A.29.5.1...]

Sections A.29.5.10.1, A.29.5.10.1(2), A.29.5.10.2, A.29.5.10.2(1)

A.29.5.10. 2. 1

~~As an example, governing laws, codes, or standards might require a certain number of accommodations be equipped for those with hearing loss or other disability.~~

~~A.29.5.10.1(2)~~

~~It is not the intent of this section to preclude devices that have been demonstrated through peer-reviewed research to awaken occupants with hearing loss as effectively as those using the frequency and amplitude specified in this section.~~

~~**A.29.5.10.2 .2**~~

~~Tactile notification appliances such as bed shakers have been shown to be effective in waking those with normal hearing to profound hearing loss [Ashley et al., 2005, UL 1971, 2018]. Tactile signaling has been studied and found to be an effective way to alert and notify sleeping persons. However, there are many variables that have not been tested that might affect the reliability of their performance. Some of the appliance variables include the mass of the appliance, frequency of vibration, and the throw or displacement of the vibrating mass. Occupant variables that might affect the reporting of test results and the effectiveness of the appliance include the person's age, how long a person has lived with their hearing loss, and what sleep stage the person is experiencing when the appliance operates. The type of mattress might also have an effect of the performance of certain tactile appliances. Mattress variables can include thickness, firmness, memory foam, pillow tops, water beds, air beds, and motion isolation mattresses. Users of tactile appliances should be cautioned to test how well they might sense the effect of the appliance.~~

~~The Code requires both visual notification appliances and tactile appliances. Visual notification appliances can awaken sleeping persons, provide verification that there is a fire alarm condition, and serve to alert persons when they are not in contact with a tactile appliance.~~

~~**A.29.5.10.2(1)**~~

~~As an example, governing laws, codes, or standards might require a certain number of accommodations be equipped for those with hearing loss or other disability.~~

Statement of Problem and Substantiation for Public Input

Based on the revision of section 29.5.9 and 29.5.10 in PI No. 585, this Annex material is revised. The statement about providing hearing loss "accommodations" is removed, as building codes now require low frequency in all sleeping rooms, not just "ADA" rooms. The existing annex material on alternate means of awakening is moved to the new paragraphs for reference.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 585-NFPA 72-2022 [Sections 29.5.9, 29.5.10]	Code reference for Annex material
Public Input No. 585-NFPA 72-2022 [Sections 29.5.9, 29.5.10]	

Submitter Information Verification

Submitter Full Name: Larry Rietz
Organization: Jensen Hughes
Street Address:
City:
State:
Zip:
Submittal Date: Wed Jun 01 20:11:05 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: The requirements of these sections have not been revised, therefore deletion of the annex content is inappropriate at this time.

Public Input No. 221-NFPA 72-2022 [Section No. A.29.5.10.2]

A.29.5.10.2

Tactile notification appliances such as bed shakers have been shown to be effective in waking those with normal hearing to profound hearing loss [Ashley et al., 2005, UL 1971, 2018]. Tactile signaling has been studied and found to be an effective way to alert and notify sleeping persons. However, there are many variables that have not been tested that might affect the reliability of their performance. Some of the appliance variables include the mass of the appliance, frequency of vibration, and the throw or displacement of the vibrating mass. Occupant variables that might affect the reporting of test results and the effectiveness of the appliance include the person's age, how long a person has lived with their hearing loss, and what sleep stage the person is experiencing when the appliance operates. The type of mattress might also have an effect of the performance of certain tactile appliances. Mattress variables can include thickness, firmness, memory foam, pillow tops, water beds, air beds, and motion isolation mattresses. Users of tactile appliances should be cautioned to test how well they might sense the effect of the appliance.

The Code requires both visual notification appliances and tactile appliances. Visual notification appliances can awaken sleeping persons, provide verification that there is a fire alarm condition, and serve to alert persons when they are not in contact with a tactile appliance._ See the NFPA Fire Protection Research Foundation report, *Review of Alarm Technologies for Deaf and Hard of Hearing Populations* , August 2021, for further details.

Statement of Problem and Substantiation for Public Input

The NFPA Disability Access Review and Advisory Committee (DARAC) (www.nfpa.org/darac) requests that the referenced NFPA Fire Protection Research Foundation report be included in this section of the annex. This reference provides updated research and information that users of NFPA 72 may found applicable on this topic.

Submitter Information Verification

Submitter Full Name: Marsha Mazz
Organization: United Spinal Association
Affiliation: Representing the DARAC Advisory Committee
Street Address:
City:
State:
Zip:
Submittal Date: Thu Apr 14 10:43:08 EDT 2022
Committee: SIG-HOU

Committee Statement

Resolution: FR-5210-NFPA 72-2022
Statement: The additional information provides more current data to support the requirement.

Public Input No. 26-NFPA 72-2021 [Section No. A.29.9.4(3)]

A.29.9.4(3)

Restraining means are not intended to be used where the ~~detector or alarm is~~ alarm or detector is designed to be plugged directly into a receptacle without a cord.

Statement of Problem and Substantiation for Public Input

Aligns stating Alarm requirements before Detector requirements

Submitter Information Verification

Submitter Full Name: George Bish
Organization: Amazon/Ring Protect Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Mon Nov 22 10:23:36 EST 2021
Committee: SIG-HOU

Committee Statement

Resolution: FR-5083-NFPA 72-2022
Statement: Section A.29.9.4(3) has been revised because the requirement does not apply to detectors.

Public Input No. 27-NFPA 72-2021 [Section No. A.29.10.4]

A.29.10.4

~~The linear space rating is the maximum allowable distance between heat detectors. The linear space rating is also a measure of detector response time to a standard test fire when tested at the same distance. A higher rating corresponds to a faster response time. This Code recognizes only those heat detectors with ratings of 50 ft (15.2 m) or more.~~

Statement of Problem and Substantiation for Public Input

Linear Space rating is not talked about in the body

Submitter Information Verification

Submitter Full Name: George Bish
Organization: Amazon/Ring Protect Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Mon Nov 22 10:25:48 EST 2021
Committee: SIG-HOU

Committee Statement

Resolution: FR-5121-NFPA 72-2022
Statement: “Alarm” and “detector” have been realigned sequentially for consistency throughout the standard. Additional changes have been made for MoS compliance. The revision associates the annex material with the related requirement in Section 29.10.4.1.

Public Input No. 28-NFPA 72-2021 [Section No. A.29.10.4.2]

A.29.10.4.2

A heat alarm or heat detector with a temperature rating somewhat in excess of the highest normally expected ambient temperature is specified in order to avoid the possibility of premature response of the heat alarm or heat detector to non-fire conditions.

Some areas or rooms of the dwelling unit can experience ambient temperatures considerably higher than those in the normally occupied living spaces. Examples are unfinished attics, the space near hot air registers, and some furnace rooms. This fact should be considered in the selection of the appropriate temperature rating for fixed-temperature heat alarms or heat detectors to be installed in these areas or rooms.

Statement of Problem and Substantiation for Public Input

text added to clarify that this applies to both heat alarms and heat detectors

Submitter Information Verification

Submitter Full Name: George Bish
Organization: Amazon/Ring Protect Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Mon Nov 22 10:32:06 EST 2021
Committee: SIG-HOU

Committee Statement

Resolution: FR-5181-NFPA 72-2022
Statement: The revision clarifies that the text applies to heat alarms and heat detectors.

Public Input No. 29-NFPA 72-2021 [Section No. A.29.11.3.4(3)]

A.29.11.3.4(3)

Smoke ~~detectors~~ alarms and smoke ~~alarms should~~ detectors should be installed in those locations recommended by the manufacturer's published instructions, except in those cases where the space above the ceiling is open to the outside and little or no insulation is present over the ceiling. Such cases result in the ceiling being excessively cold in the winter or excessively hot in the summer. Where the ceiling is significantly different in temperature from the air space below, smoke and heat have difficulty reaching the ceiling and a detector that is located on that ceiling.

Statement of Problem and Substantiation for Public Input

Aligns stating Alarm requirements before Detector requirements

Submitter Information Verification

Submitter Full Name: George Bish
Organization: Amazon/Ring Protect Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Mon Nov 22 10:36:01 EST 2021
Committee: SIG-HOU

Committee Statement

Resolution: FR-5183-NFPA 72-2022
Statement: The revision is to align text sequencing with other revisions made in Chapter 29.

Public Input No. 201-NFPA 72-2022 [Section No. C.1]

C.1 Scope.

The requirements of the protected premises chapter (Chapter 23) provide for minimum levels of protection for fire alarm systems to protect life and property, regardless of the building characteristics, contents, or use. This System Performance and Design Guide provides additional considerations for users of the ~~NFAC~~ National Fire Alarm and Signaling Code when planning, designing, and installing protected premises fire alarm systems for buildings that might be unusual in scale, mission, use, symbolism, or other critical or high-profile characteristics.

This guidance suggests potential system characteristics to enhanced system performance for protection of life, mission, and property in high-profile and other critical buildings, including signaling path integrity, redundancies, survivability, backup fire control stations, nonerasable logs, multiple information stations, and the benefits of networked and peer-to-peer configurations.

Statement of Problem and Substantiation for Public Input

NFAC is not defined, but I assume it is National Fire Alarm Code. Should be updated to latest title.

Submitter Information Verification

Submitter Full Name: Scott Lang
Organization: Honeywell International
Street Address:
City:
State:
Zip:
Submittal Date: Tue Apr 05 16:29:36 EDT 2022
Committee: SIG-PRO

Committee Statement

Resolution: FR-5088-NFPA 72-2022
Statement: Change NFAC to National Fire Alarm and Signaling Code with the addition of NFPA 72.

Public Input No. 202-NFPA 72-2022 [Section No. C.2.2.1 [Excluding any Sub-Sections]]

Determine an emergency response plan considering the requirements of ~~NFAC~~ National Fire Alarm and Signaling Code , local codes and regulations, the availability and responsibility of building operating personnel, and the mobility of occupants.

Statement of Problem and Substantiation for Public Input

NFAC is not defined within NFPA 72. Assume it means National Fire Alarm Code. Either use the correct title or say NFPA 72.

Submitter Information Verification

Submitter Full Name: Scott Lang
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Submittal Date: Tue Apr 05 16:30:59 EDT 2022
Committee: SIG-PRO

Committee Statement

Resolution: FR-5089-NFPA 72-2022
Statement: Change NFAC to National Fire Alarm and Signaling Code with the addition of NFPA 72.

Public Input No. 203-NFPA 72-2022 [Chapter E]

Annex E Sample U.S. Ordinance Adopting ***NFPA 72***

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

E.1

The following sample ordinance is provided to assist a jurisdiction in the adoption of this Code and is not part of this Code.

ORDINANCE NO. _____

An ordinance of the *[jurisdiction]* adopting the 2022 edition of *NFPA 72*, *National Fire Alarm and Signaling Code*, and documents listed in Chapter 2 of that Code; prescribing regulations governing conditions hazardous to life and property from fire or explosion; providing for the issuance of permits and collection of fees; repealing Ordinance No. _____ of the *[jurisdiction]* and all other ordinances and parts of ordinances in conflict therewith; providing a penalty; providing a severability clause; and providing for publication; and providing an effective date.

BE IT ORDAINED BY THE *[governing body]* OF THE *[jurisdiction]*:

SECTION 1 That the *NFPA 72*, *National Fire Alarm and Signaling Code*, and documents adopted by Chapter 2, three (3) copies of which are on file and are open to inspection by the public in the office of the *[jurisdiction's keeper of records]* of the *[jurisdiction]*, are hereby adopted and incorporated into this ordinance as fully as if set out at length herein, and from the date on which this ordinance shall take effect, the provisions thereof shall be controlling within the limits of the *[jurisdiction]*. The same are hereby adopted as the Code of the *[jurisdiction]* for the purpose of prescribing regulations governing conditions hazardous to life and property from fire or explosion and providing for issuance of permits and collection of fees.

SECTION 2 Any person who shall violate any provision of this code or standard hereby adopted or fail to comply therewith; or who shall violate or fail to comply with any order made thereunder; or who shall build in violation of any detailed statement of specifications or plans submitted and approved thereunder; or fail to operate in accordance with any certificate or permit issued thereunder; and from which no appeal has been taken; or who shall fail to comply with such an order as affirmed or modified by a court of competent jurisdiction, within the time fixed herein, shall severally for each and every such violation and noncompliance, respectively, be guilty of a misdemeanor, punishable by a fine of not less than $ _____ nor more than $_____ or by imprisonment for not less than _____ days nor more than _____ days or by both such fine and imprisonment. The imposition of one penalty for any violation shall not excuse the violation or permit it to continue; and all such persons shall be required to correct or remedy such violations or defects within a reasonable time; and when not otherwise specified the application of the above penalty shall not be held to prevent the enforced removal of prohibited conditions. Each day that prohibited conditions are maintained shall constitute a separate offense.

SECTION 3 Additions, insertions, and changes — that the 2022 edition of *NFPA 72*, *National Fire Alarm and Signaling Code*, is amended and changed in the following respects:

List Amendments

SECTION 4 That ordinance No. _____ of *[jurisdiction]* entitled *[fill in the title of the ordinance or ordinances in effect at the present time]* and all other ordinances or parts of ordinances in conflict herewith are hereby repealed.

SECTION 5 That if any section, subsection, sentence, clause, or phrase of this ordinance is, for any reason, held to be invalid or unconstitutional, such decision shall not affect the validity or constitutionality of the remaining portions of this ordinance. The *[governing body]* hereby declares that it would have passed this ordinance, and each section, subsection, clause, or phrase hereof, irrespective of the fact that any one or more sections, subsections, sentences, clauses, and phrases be declared unconstitutional.

SECTION 6 That the *[jurisdiction's keeper of records]* is hereby ordered and directed to cause this ordinance to be published.

[NOTE: An additional provision might be required to direct the number of times the ordinance is to be published and to specify that it is to be in a newspaper in general circulation. Posting may also be required.]

SECTION 7 That this ordinance and the rules, regulations, provisions, requirements, orders, and matters established and adopted hereby shall take effect and be in full force and effect *[time period]* from and after the date of its final passage and adoption.

Statement of Problem and Substantiation for Public Input

NFPA 72 strives to be used outside of the U.S. This Annex seems U.S.-centric. I'm not sure this is how laws are written elsewhere around the world. More broader, I wonder whether this Annex is even necessary - do cities not know how to write their ordinances?

Submitter Information Verification

Submitter Full Name: Scott Lang
Organization: Honeywell International
Street Address:
City:
State:
Zip:
Submittal Date: Wed Apr 06 09:18:28 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: The example is intended to be generic, and it is anticipated that the city, state, or country adopting this code would use a format that is suitable.

Public Input No. 388-NFPA 72-2022 [Sections J.1, J.2, J.3, J.4, J.5, J.6]

Sections J.1, J.2, J.3, J.4, J.5, J.6

J.1 Introduction.

~~J.~~

NFPA 72 contains requirements for fire alarm and emergency communications systems that can be impacted by cybersecurity threats. Coordination of cybersecurity frameworks to protect the functions of systems is ~~essential in order~~ essential to prevent unwanted impacts on the system. Where the system ~~would need to interface~~ interfaces with the internet or other systems, ~~it would make sense to provide~~ a secure firewall or gateway ~~. In any case, protection from cybersecurity threats is essential.~~

~~The Technical Committee has determined that, in lieu of establishing requirements in Chapter 11 on cybersecurity at this time, it is appropriate to provide such guidance and framework in this annex. This allows the industry and the public the ability to gain experience with cybersecurity measures and provide constructive feedback for future editions of this Code.~~

~~**J.2** – Cybersecurity Provisions.~~

~~Where cybersecurity provisions are required, manufacturers, system designers, system installers, inspection personnel, testing personnel, and service technicians involved in the design, installation, testing, and maintenance of cybersecurity provisions should provide cybersecurity measures as outlined in this annex.~~

should be provided to effect vital protection against cybersecurity threats.

J. 3 Cybersecurity Standards.

Systems should be designed, installed, and maintained in accordance with one or more of the following cybersecurity standards:

(1) ANSI/ISA/IEC-62443-4-2, *Security for Industrial Automation and Control Systems, Part 4-2: Technical Security Requirements for IACS Components*

(2) NISTIR 8259, *Foundational Cybersecurity Activities for IoT Device Manufacturers*

(3) NIST *Framework for Improving Critical Infrastructure Cybersecurity*

(4) UL 2900-2-3, *Software Cybersecurity for Network-Connectable Products Part 2-3: Particular Requirements for Security and Life Signaling Systems*

(5) Other standard(s) or published documents acceptable to the authority having jurisdiction

J.4 Evidence of Compliance.

Evidence of cybersecurity compliance ~~should~~ shall include one or more of the following:

(1) Certification of compliance by a nationally recognized test laboratory

(2) Manufacturer certification for the specific type and brand of system provided by the manufacturer

(3) An assessment or certification program acceptable to the authority having jurisdiction

~~**J.5** – Documentation.~~

~~All system-related documentation associated with the use of the selected standard(s) is included as part of the system documentation required by Chapter 7 .~~

~~**J.6** – Cybersecurity Certificate Maintenance.~~

J.6.1 – Certificate Validation.

Where a system is provided with a cybersecurity certificate document as evidence of compliance, the validity of the certificate should be checked annually.

J.6.2 – Cybersecurity Software Revisions.

Software changes made only for cybersecurity purposes to firewalls or barrier gateways should not require the functional test of the system that is otherwise required by 14.4.2.4 and 14.4.2.5 where all the following are true:

(1) The changes do not affect the function of the executive or site-specific software.

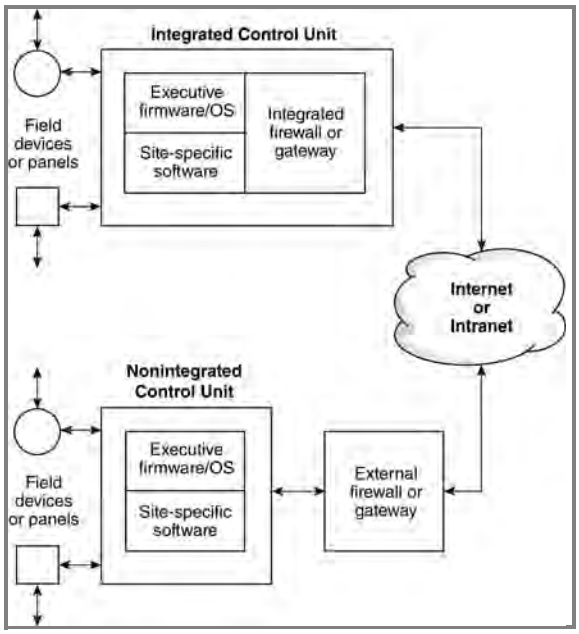
(2) The integrity of the software update installed in the firewall or barrier gateway is verified to ensure complete and intact software delivery.

(3) The software is digitally signed by the manufacturer.

(4) The digital signature of the software is verified prior to execution by the system or system components using secure signing keys.

Figure J.6.2 depicts system typical firewall/gateway operation. Such functionality is not mandated but when deployed might take the form of physical hardware, firmware, or a combination of both. The firewall/gateway might be physically integrated into the control unit as shown in the integrated control unit graphic, or a separate device/service that interacts with the control unit as shown in the nonintegrated control unit. If the firewall/gateway is segmented from the executive firmware and site-specific software and if security software changes to the firewall/gateway are made, these changes should not require system retesting. If changes are made in a firewall/gateway that is not segmented from the executive firmware and site-specific software, the system should be retested.

Figure J.6.2 System Typical Firewall/Gateway Operation.



J.6.3 – Remote Software Changes.

Software changes to systems or system components made only for cybersecurity purposes should be permitted to be made by remote access in accordance with Chapter 23 .

Statement of Problem and Substantiation for Public Input

Revisions reflect proposed text provided for Chapter 11.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 384-NFPA 72-2022 [Section No. 11.1]	anex for revised Chapter 11.

Submitter Information Verification

Submitter Full Name: Chris Heaton
Organization: Electronic Security Association
Affiliation: Electronic Security Association
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 25 17:35:19 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5195-NFPA 72-2022
Statement: Annex J is no longer needed because the material has been incorporated into Chapter 11 and Annex A.

Public Input No. 509-NFPA 72-2022 [Sections J.1, J.2, J.3, J.4, J.5, J.6]

Sections J.1, J.2, J.3, J.4, J.5, J.6

J.1 ~~– Introduction.~~ A.11.1 Cybersecurity

~~J.~~

NFPA 72 contains requirements for fire alarm and emergency communications systems that can be impacted by cybersecurity threats. Coordination of cybersecurity frameworks to protect the functions of systems is essential in order to prevent unwanted impacts on the system. Where the system would need to interface with the internet or other systems, ~~it would make sense to provide~~ a secure firewall or gateway ~~. In any case, protection from cybersecurity threats is essential.~~

~~The Technical Committee has determined that, in lieu of establishing requirements in Chapter 11 on cybersecurity at this time, it is appropriate to provide such guidance and framework in this annex. This allows the industry and the public the ability to gain experience with cybersecurity measures and provide constructive feedback for future editions of this Code.~~

J.2 ~~– Cybersecurity Provisions.~~

~~Where cybersecurity provisions are required, manufacturers, system designers, system installers, inspection personnel, testing personnel, and service technicians involved in the design, installation, testing, and maintenance of cybersecurity provisions should provide cybersecurity measures as outlined in this annex.~~

should be provided to effect vital protection against cybersecurity threats.

J. 3 _ Cybersecurity Standards.

Systems should be designed, installed, and maintained in accordance with one or more of the following cybersecurity standards:

(1) ANSI/ISA/IEC-62443-4-2, *Security for Industrial Automation and Control Systems, Part 4-2: Technical Security Requirements for IACS Components*

(2) NISTIR 8259, *Foundational Cybersecurity Activities for IoT Device Manufacturers*

(3) NIST *Framework for Improving Critical Infrastructure Cybersecurity*

(4) UL 2900-2-3, *Software Cybersecurity for Network-Connectable Products Part 2-3: Particular Requirements for Security and Life Signaling Systems*

(5) Other standard(s) or published documents acceptable to the authority having jurisdiction

J.

4

11.41.8 _ Evidence of Compliance.

Evidence of cybersecurity compliance

~~should~~

shall include one or more of the following:

(1) Certification of compliance by a nationally recognized test laboratory

(2) Manufacturer certification for the specific type and brand of system provided by the manufacturer

(3) An assessment or certification program acceptable to the authority having jurisdiction

J.

~~5 Documentation.~~

~~All system-related documentation associated with the use of the selected standard(s) is included as part of the system documentation required by Chapter 7.~~

~~**J.6** – Cybersecurity Certificate Maintenance.~~

~~**J.6.1** – Certificate Validation.~~

~~Where a system is provided with a cybersecurity certificate document as evidence of compliance, the validity of the certificate should be checked annually.~~

~~**J.6.2** – Cybersecurity Software Revisions.~~

~~Software changes made only for cybersecurity purposes to firewalls or barrier gateways should not require the functional test of the system that is otherwise required by 14.4.2.4 and 14.4.2.5 where all the following are true:~~

(1) ~~The changes do not affect the function of the executive or site-specific software.~~

(2) ~~The integrity of the software update installed in the firewall or barrier gateway is verified to ensure complete and intact software delivery.~~

(3) ~~The software is digitally signed by the manufacturer.~~

(4) ~~The digital signature of the software is verified prior to execution by the system or system components using secure signing keys.~~

~~Figure J.6.2~~

11.1.8.2 The validity of cybersecurity certificates shall be verified annually

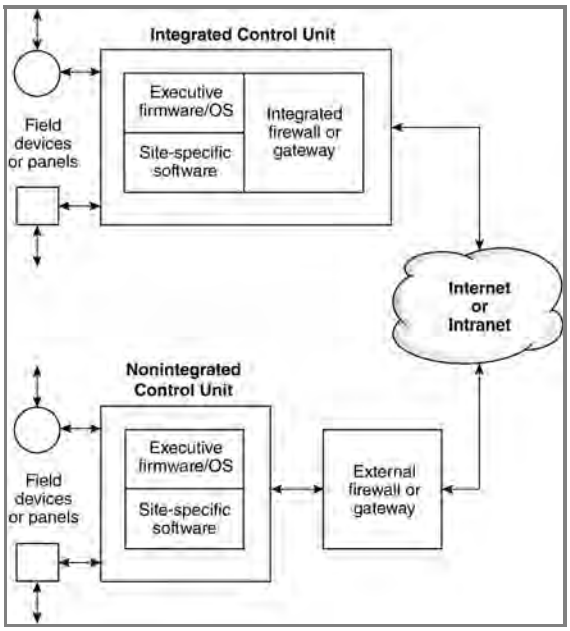
A1.11.5.7 Figure A.1.11.5.7 depicts system typical firewall/gateway operation. Such functionality is not mandated but when deployed might take the form of physical hardware, firmware, or a combination of both. The firewall/gateway might be physically integrated into the control unit as shown in the integrated control unit graphic, or a separate device/service that interacts with the control unit as shown in the nonintegrated control unit. If the firewall/gateway is segmented from the executive firmware and site-specific software and if security software changes to the cybersurity-related only software within the firewall/gateway are made, these changes should not require system retesting. If changes are made in a firewall/gateway that is not segmented from the executive firmware and site-specific software, the system should be retested.

~~Figure J~~

Figure A .

~~6.2 System~~

1.11.5.7 System Typical Firewall/Gateway Operation.



~~J~~

11 .

~~6.3 Remote Software Changes.~~

~~Software~~

~~**1.5.8 Cybersecurity-related only changes to systems or system components**~~

~~made only for cybersecurity purposes should~~

~~**shall be permitted to be made**~~

~~by~~

~~**by** remote access in accordance with Chapter 23.~~

Additional Proposed Changes

File Name	Description	Approved
NFPA_72_BS_SB_11.1_comments.docx	Cybersecurity changes to ANNEX J	

Statement of Problem and Substantiation for Public Input

Building systems are increasingly networked and/ or accessible to public facing networks. Evidence has been identified in multiple case studies including the Fire Protection Research Foundation (FPRF) report. The FPRF conducted research that has identified gaps and assessed the appropriateness of the existing provisions and guidance related to cybersecurity.
Their report lists gaps that include:

- Configuration – • Interconnection of external systems (call centers, service providers) could allow for unauthorized activity if those external systems are not secure. • Interconnection with other building systems with no access/restriction to prevent unintended communications. • If one interconnected system is compromised and life safety is connected, it would be safe to assume that all are compromised.
- Implementation – • Systems that have remote access for maintenance or monitoring could introduce vulnerabilities if not properly implemented. • Using secure gateways and configuring devices with only the necessary communication mechanisms can reduce exposure. • The use of insecure wireless devices, or lack of wireless device authentication can be a weakness.
- Security – • Complexity of cybersecurity threats and solutions are increasing, making systems more vulnerable to highly sophisticated arson (terrorist) attacks, industrial espionage, and insider threats. Because of this, it is becoming more difficult to defend against these attacks and new solutions need to be implemented.
- Access – • Weak logical and physical access to 3rd party networks and systems. • Easy to implant hardware or software devices into environment

The attached public Input addresses the above gaps by requiring industry accepted cyber security practices.
There are several incidents that have already occurred and are referenced here.

- https://www.smartcitiesdive.com/news/hackers-emergency-sirens-texas-cities/550639/
- Researchers Hack Building Control System at Google Australia Office | WIRED

Target Hackers Broke in Via HVAC Company – Krebs on Security

Submitter Information Verification

Submitter Full Name: Megan Hayes
Organization: Nema
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City:
State:

Zip:

Submittal Date: Mon May 30 17:17:21 EDT 2022

Committee: SIG-FUN

Committee Statement

Resolution: FR-5195-NFPA 72-2022

Statement: Annex J is no longer needed because the material has been incorporated into Chapter 11 and Annex A.

Public Input No. 560-NFPA 72-2022 [Section No. K.1.2.15]

K.1.2.15 UL Publications.

Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, IL 60062-2096.

UL 217, *Smoke Alarms*, ~~8th edition~~ 2020 , ~~2015,~~ revised ~~2016~~ 2021 .

UL 268, *Smoke Detectors for Fire Alarm Systems,* ~~7th edition~~ 2020 , ~~2016~~ revised 2021 .

UL 268A, *Smoke Detectors for Duct Application*, 2008, revised ~~2016~~ 2020 .

UL 827, *Central-Station Alarm Services*, 2014, revised ~~2019~~ 2020 .

UL 864, *Control Units and Accessories for Fire Alarm Systems*, 2014, revised ~~2018~~ 2020 .

UL 1638, *Visible Signaling Devices for Fire Alarm and Signaling Systems, Including Accessories*, 2016.

UL 1778, *Uninterruptible Power Source*, 2014, revised 2017.

UL 1971, *Signaling Devices for the Hearing Impaired,* 2002, revised 2018.

UL 1989, *Standby Batteries*, 2013, revised 2018.

UL 2034, *Single and Multiple Station Carbon Monoxide Alarms,*2017, revised 2018.

UL 2054, *Household and Commercial Batteries*, ~~2004~~ 2021 .

UL 2075, *Safety Gas and Vapor Detectors and Sensors*, 2013, revised ~~2017~~ 2021 .

UL 2572, *Mass Notification Systems*, 2018.

CAN/ UL 2900~~, Software Cybersecurity for Network - Connectable Products, 2017.UL 2900-~~ 1, *Standard for Software Cybersecurity for Network-Connectable Products, Part 1: General Requirements*, ~~2017~~ 2020 .

CAN/ UL 2900-2-3, *Standard for Software Cybersecurity for Network-Connectable Products, Part 2-3: Particular Requirements for Security and Life Safety Signaling Systems*, 2020.

Statement of Problem and Substantiation for Public Input

UL 2900 is withdrawn and has been replaced with UL 2900-1 and UL 2900-2-3 which are now both Bi National Standards. The other changes are updates to edition or revision dates and are submitted reference updates.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 559-NFPA 72-2022 [Section No. 2.3.9]	

Submitter Information Verification

Submitter Full Name: Kelly Nicolello
Organization: UL LLC
Street Address:
City:
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Zip:

Submittal Date: Wed Jun 01 10:47:03 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5206-NFPA 72-2022
Statement: The references are updated in accordance with the Manual of Style.

Public Input No. 270-NFPA 72-2022 [Section No. K.3]

K.3 References for Extracts in Informational Sections.

NFPA 70®, *National Electrical Code®*, 2020 edition.

NFPA 92B, *Smoke Management Systems in Malls, Atria, and Large Spaces*, 1995 edition (withdrawn).

NFPA *101®*, *Life Safety Code®*, 2021 edition.

~~NFPA 1221~~ NFPA 1225 ,~~Standard~~ Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems ~~, 2019 edition.~~

Statement of Problem and Substantiation for Public Input

As part of the Emergency Response and Responder Safety Document Consolidation Plan (consolidation plan) as approved by the NFPA Standards Council, the NFPA 1221 Standard has been combined into a new consolidated Standard, NFPA 1225.

Submitter Information Verification

Submitter Full Name: Rodger Reiswig
Organization: Johnson Controls
Street Address:
City:
State:
Zip:
Submittal Date: Fri Apr 29 09:26:09 EDT 2022
Committee: SIG-FUN

Committee Statement

Resolution: FR-5206-NFPA 72-2022
Statement: The references are updated in accordance with the Manual of Style.