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Memorandum

To: **Technical Committee on Fundamentals of Fire Alarm and Signaling Systems**
From: **Jenny Depew** *Administrator, Technical Projects*
Subject: **Working Draft of Committee Meeting Output**
Date: **September 5, 2019**

WORKING DRAFT OF COMMITTEE MEETING OUTPUT

- CONTENT NOT FINAL -
SUBJECT TO REVISION PRIOR TO LETTER BALLOT AND PUBLICATION OF FIRST DRAFT REPORT

Document: NFPA 72
Revision Cycle: A2021
Meeting Date(s): July 23-24, 2019
Committee Activity: Input Stage

This is a working draft, prepared by NFPA staff, to record the output generated at the Technical Committee's First Draft Meeting. It includes draft copies of the First Revisions and any Global Revisions.

This draft is being made available to Committee members for the purpose of facilitating early review, particularly for those Committee members who may be seeking input from their respective organizations, in preparation for the Letter Ballot of the Committee.

Please be aware, however, that this is a working draft, subject to further editing and/or correction and may not reflect the final content either of the First Draft Ballot or the First Draft Report.

WORKING DRAFT OF COMMITTEE MEETING OUTPUT - NFPA 72 - July 2019
Subject to Revision - Not for Publication

First Revision No. 5174-NFPA 72-2019 [Global Input]

Revise the term "control circuit" to "supervised control circuit" througout 10.17.

Submitter Information Verification

Committee: SIG-FUN
Submittal Date: Wed Jul 24 12:56:47 EDT 2019

Committee Statement

Committee Statement: Supervised control circuit is now a defined term as used in 10.17.
Response Message: FR-5174-NFPA 72-2019

First Revision No. 5133-NFPA 72-2019 [Detail]

[Modify 7.8.2 Forms as follows]

In Figure 7.8.2(a) remove the word “media” from section 6 so that the column header reads “Dual Pathway”

In Figure 7.8.2(a) Section 9 add columns to identify if notification appliances are connected to a Notification Appliance Circuit (NAC) or a Signaling Line Circuit (SLC)

In Figure 7.8.2(j) remove the word “system” following “ESS” in section 3.3 (two locations)

In Figure 7.8.2(k) replace the word “communication” with “communications” in section 2.1 (two locations) and section title 3.4

The text below Figure 7.8.2(m) should have (SIG-HOU) appended to the end

Submitter Information Verification

Committee: SIG-FUN
Submittal Date: Tue Jul 23 17:49:54 EDT 2019

Committee Statement

Committee Statement: The Technical Committee edits the text for clarity.
Response Message: FR-5133-NFPA 72-2019

Public Input No. 432-NFPA 72-2019 [Section No. 7.8.2]
Public Input No. 517-NFPA 72-2019 [Section No. 7.8.2]
Public Input No. 364-NFPA 72-2019 [Section No. 7.8.2]

First Revision No. 5134-NFPA 72-2019 [Section No. 2.3]

2.3 Other Publications. [SEE ATTACHED FOR CHANGES]

2.3.1 ANSI Publications.

American National Standards Institute, Inc., 25 West 43rd Street, 4th Floor, New York, NY 10036.

ANSI A-58.1, *Building Code Requirements for Minimum Design Loads in Buildings and Other Structures*.

ANSI S1.4a, *Specifications for Sound Level Meters*, 2014.

ANSI/ASA S3.41, *American National Standard Audible Emergency Evacuation (E2) and Evacuation Signals with Relocation Instructions (ESRI)*, 1990, reaffirmed 2015.

2.3.2 ASME Publications.

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

ASME A17.1-2016/CSA B44-16, *Safety Code for Elevators and Escalators*, 2016.

2.3.3 IEEE Publications.

Institute of Electrical and Electronics Engineers, 3 Park Avenue, 17th Floor, New York, NY 10016-5997.

IEEE 450, *Recommended Practice for Maintenance, Testing, and Replacement of Vented Lead-Acid Batteries for Stationary Applications*, 2010.

IEEE 1106, *Recommended Practice for Installation, Maintenance, Testing, and Replacement of Vented Nickel-Cadmium Batteries for Stationary Applications*, 2005.

ANSI/IEEE C2, *National Electrical Safety Code*, 2017.

2.3.4 IMSA Publications.

International Municipal Signal Association, 165 East Union Street, Newark, NY 14513-0539.

"IMSA Official Wire and Cable Specifications," 2012.

2.3.5 ISO Publications.

International Organization for Standardization, ISO Central Secretariat, BIBC II, Chemin de Blandonnet 8, CP 401, 1214 Vernier, Geneva, Switzerland.

ISO 7731, *Danger signals for public and work places — Auditory danger signals*, 2003 (reconfirmed 2015).

2.3.6 Telcordia Publications.

Telcordia Technologies, One Telcordia Drive, Piscataway, NJ 08854.

GR-506-CORE, LATA Switching Systems Generic Requirements: Signaling for Analog Interface, 2011.

GR-909-CORE, Fiber in the Loop Systems Generic Requirements, 2004.

2.3.7 TIA Publications.

Telecommunications Industry Association, 1320 North Courthouse Road, Suite 200, Arlington, VA 22201.

TIA-526, *Standard Test Procedures for Fiber Optic Systems*.

ANSI/TIA-568-C.3, *Optical Fiber Cabling Components Standard*, 2015.

ANSI/TIA-569-D, *Telecommunications Pathways and Spaces*.

2.3.8 UL Publications.

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

ANSI/UL 38, *Standard for Manual Signaling Boxes for Fire Alarm Systems,* 2008.

ANSI/UL 217, *Standard for Single and Multiple Station Smoke Alarms*, 8th edition, revised 2016.

ANSI/UL 268, *Standard for Smoke Detectors for Fire Alarm Systems*, 7th edition, 2016.

ANSI/UL 521, *Standard for Heat Detectors for Fire Protective Signaling Systems*, 7th edition, 1999, revised 2016.

ANSI/UL 827, *Standard for Central-Station Alarm Services*, 8th edition, 2014, revised 2016.

ANSI/UL 864, *Standard for Control Units and Accessories for Fire Alarm Systems*, 10th edition, 2014.

ANSI/UL 985, *Standard for Household Fire Warning System Units*, 6th edition, 2015.

ANSI/UL 1484, *Standard for Residential Gas Detectors*, 5th edition, 2016.

ANSI/UL 1638, *Visible Signaling Devices for Fire Alarm and Signaling Systems, Including Accessories*, 5th edition, 2016.

ANSI/UL 1730, *Standard for Smoke Detector Monitors and Accessories for Individual Living Units of Multifamily Residences and Hotel/Motel Rooms*, 4th edition, 2006, revised 2012.

ANSI/UL 1971, *Standard for Signaling Devices for the Hearing Impaired*, 3rd edition, 2002, revised 2013.

ANSI/UL 1981, *Central Station Automation Systems*, 3rd edition, 2014, revised 2015.

ANSI/UL 2017, *Standard for General-Purpose Signaling Devices and Systems*, 2nd edition, 2008, revised 2016.

ANSI/UL 2034, *Standard for Single and Multiple Station Carbon Monoxide Alarms,* February 2008, revised February 2009.

ANSI/UL 2075, *Standard for Gas and Vapor Detectors and Sensors,* 2nd edition, March 2013.

ANSI/UL 2572, *Mass Notification Systems*, 2nd edition, 2016.

ANSI/UL 60950, *Information Technology Equipment — Safety — Part 1: General Requirements*, 3rd edition, issued December 2005, including Amendment 1 issued December 2009 and Amendment 2 issued May 2013.

2.3.9 Other Publications.

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

Supplemental Information

File Name	Description Approved
72_SIG-FUN_FR5134_2.3.docx	STAFF USE

Submitter Information Verification

Committee: SIG-FUN
Submittal Date: Tue Jul 23 22:29:24 EDT 2019

Committee Statement

Committee Statement: References are updated in accordance with the Manual of Style. "ANSI/" is removed from all UL standards to eliminate confusion regarding the publisher of UL standards.

Response Message: FR-5134-NFPA 72-2019

Public Input No. 18-NFPA 72-2018 [Section No. 2.3]

Public Input No. 228-NFPA 72-2019 [Section No. 2.3.8]

Public Input No. 650-NFPA 72-2019 [Global Input]

Public Input No. 262-NFPA 72-2019 [Global Input]

Public Input No. 187-NFPA 72-2019 [Section No. 2.3.2]

Public Input No. 263-NFPA 72-2019 [Global Input]

Public Input No. 264-NFPA 72-2019 [Section No. 2.3.8]

First Revision No. 5135-NFPA 72-2019 [Section No. 2.4]

2.4 References for Extracts in Mandatory Sections.

NFPA 13, *Standard for the Installation of Sprinkler Systems,*~~2016~~ 2022 edition.

NFPA 70®, National Electrical Code®,~~2017~~ 2020 edition.

NFPA *101®, Life Safety Code®,*~~2018~~ 2021 edition.

NFPA 654, *Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids,*~~2017~~ 2020 edition.

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

NFPA 5000®, Building Construction and Safety Code®,~~2018~~ 2021 edition.

Supplemental Information

File Name	Description Approved
72_SIG-FUN_FR5135_2.4.docx	STAFF USE

Submitter Information Verification

Committee: SIG-FUN
Submittal Date: Tue Jul 23 22:48:05 EDT 2019

Committee Statement

Committee Statement: Extract updates in accordance with the Manual of Style.
Response Message: FR-5135-NFPA 72-2019

WORKING DRAFT OF COMMITTEE MEETING OUTPUT - NFPA 72 - July 2019
Subject to Revision - Not for Publication

First Revision No. 5139-NFPA 72-2019 [Section No. 3.3.1]

3.3.1 Accessible (as applied to equipment).

~~Admitting close approach; not guarded by locked doors, elevation, or other effective means~~ Capable of being reached for operation, renewal, and inspection . [**70:**100] (SIG-FUN)

Submitter Information Verification

Committee: SIG-FUN
Submittal Date: Tue Jul 23 23:09:02 EDT 2019

Committee Statement

Committee Statement: The extracted text is updated to the 2020 edition of the NEC.
Response Message: FR-5139-NFPA 72-2019

WORKING DRAFT OF COMMITTEE MEETING OUTPUT - NFPA 72 - July 2019
Subject to Revision - Not for Publication

First Revision No. 5140-NFPA 72-2019 [Section No. 3.3.3]

3.3.3 Accessible, Readily (Readily Accessible).

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

Submitter Information Verification

Committee: SIG-FUN
Submittal Date: Tue Jul 23 23:13:59 EDT 2019

Committee Statement

Committee Statement: This revision corrects an error in the extracted text.
Response Message: FR-5140-NFPA 72-2019

First Revision No. 5063-NFPA 72-2019 [New Section after 3.3.23]

3.3.24 Authorized Personnel.

The person in charge of the premises, or other persons appointed or selected by the person in charge of the premises who performs certain duties.

Submitter Information Verification

Committee: SIG-FUN
Submittal Date: Tue Jul 23 08:38:42 EDT 2019

Committee Statement

Committee Statement: The term authorized personnel is currently defined in the NFPA glossary of terms. The Technical Committee used this definition for consistency and removed the reference to stationary storage batteries from the glossary of terms definition.

Response Message: FR-5063-NFPA 72-2019

Public Input No. 164-NFPA 72-2019 [New Section after 3.3.23]

First Revision No. 5131-NFPA 72-2019 [New Section after 3.3.62]

3.3.63 Control Equipment.

Equipment listed as either a control unit or control unit accessory.

Submitter Information Verification

Committee: SIG-FUN

Submittal Date: Tue Jul 23 17:29:19 EDT 2019

Committee Statement

Committee Statement: A definition for the term “control equipment”, which is currently defined within the text of 7.4.7, is added for clarity.

Response Message: FR-5131-NFPA 72-2019

Public Input No. 539-NFPA 72-2019 [Section No. 7.2.1]

First Revision No. 5069-NFPA 72-2019 [New Section after 3.3.63]

3.3.64 Cyber Security.

The protection of systems from theft or damage of data, or damage to hardware or software, as well as from unauthorize command or control or access to any information of any services the systems provide.

Submitter Information Verification

Committee: SIG-FUN
Submittal Date: Tue Jul 23 08:49:08 EDT 2019

Committee Statement

Committee Statement: A new definition for "cyber security" has been added and uses the definition provided by the Department of Homeland Security to maintain consistency.
Response Message: FR-5069-NFPA 72-2019

Public Input No. 613-NFPA 72-2019 [New Section after 3.3.63]

First Revision No. 5076-NFPA 72-2019 [New Section after 3.3.94]

3.3.95 Emergency Personnel.
Persons who have been trained in emergency response.

Submitter Information Verification

Committee: SIG-FUN
Submittal Date: Tue Jul 23 09:11:01 EDT 2019

Committee Statement

Committee Statement: The term "emergency personnel" is used in the Code and has been defined to clarify its intended use.
Response Message: FR-5076-NFPA 72-2019

Public Input No. 165-NFPA 72-2019 [New Section after 3.3.94]

First Revision No. 5173-NFPA 72-2019 [New Section after 3.3.289]

3.3.290 Supervised Control Circuit.

An output circuit that is monitored for integrity and used exclusively to activate notification appliance circuits on control equipment.

Submitter Information Verification

Committee: SIG-FUN

Submittal Date: Wed Jul 24 12:54:40 EDT 2019

Committee Statement

Committee Statement: The term "Supervised Control Circuit" has been defined to distinguish it from a Notification Appliance Circuit.

The Technical Committee requests that the SIG-PRO Technical Committee and the Correlating Committee to change 21.2.4 and A.21.2.4 replace the term “control circuit” with “pathway” to avoid conflict.

Response Message: FR-5173-NFPA 72-2019

First Revision No. 5124-NFPA 72-2019 [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 ~~and 7.8.2~~

(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 ~~and 7.8.2~~

(22) Where applicable, cyber security documentation

Submitter Information Verification

Committee: SIG-FUN
Submittal Date: Tue Jul 23 16:39:40 EDT 2019

Committee Statement

Committee Statement: Section 7.2.1 has been revised removing unnecessary references to 7.8.2, and adds a reference to cyber security documentation at the bottom of the list.
Response Message: FR-5124-NFPA 72-2019

Public Input No. 618-NFPA 72-2019 [Section No. 7.2.1]

Public Input No. 84-NFPA 72-2019 [Section No. 7.2.1]

WORKING DRAFT OF COMMITTEE MEETING OUTPUT - NFPA 72 - July 2019
Subject to Revision - Not for Publication

First Revision No. 5078-NFPA 72-2019 [Section No. 7.3.3.1]

7.3.3.1

When ~~a~~design ~~a~~ a design professional is preparing design documents ~~that will incorporate~~ for a new or ~~modifications~~ modificatons to ~~a~~ an existing fire alarm or emergency ~~communication~~ communications system covered by this Code, preliminary bid documents shall be prepared in accordance with Section 7.3.

Submitter Information Verification

Committee: SIG-FUN
Submittal Date: Tue Jul 23 09:25:44 EDT 2019

Committee Statement

Committee Statement: The Technical Committee corrects an editorial issue.
Response Message: FR-5078-NFPA 72-2019

Public Input No. 57-NFPA 72-2019 [Section No. 7.3.3.1]

First Revision No. 5079-NFPA 72-2019 [New Section after 7.3.3.5]

7.3.3.6

Design documents shall indicate the pathway class designations in accordance with Section 12.3.

7.3.3.7

Design documents shall indicate the pathway survivability level designations in accordance with Section 12.4.

Submitter Information Verification

Committee: SIG-FUN
Submittal Date: Tue Jul 23 09:32:55 EDT 2019

Committee Statement

Committee Statement: This revision clarifies that pathway class designation and survivability levels are part of the design documentation requirements.
Response Message: FR-5079-NFPA 72-2019

Public Input No. 56-NFPA 72-2019 [New Section after 7.3.3.5]

First Revision No. 5085-NFPA 72-2019 [Section No. 7.4.5]

7.4.5

Floor plan drawings shall be drawn to an indicated scale and shall include the following information, where applicable for the particular system:

(1) Floor or level identification
(2) Point of compass (indication of North)
(3) Graphic scale
(4) All walls and doors
(5) All partitions extending to within 15 percent of the ceiling height (where applicable and when known)
(6) Room and area descriptions
(7) System devices/component locations
(8) Locations of ~~fire alarm~~ the system primary power disconnecting means
(9) Locations of monitor/control interfaces to other systems
(10) System riser locations
(11) Type and number of system components/devices on each circuit, on each floor or level
(12) Type and quantity of conductors and conduit (if used) for each circuit
(13) Identification of any ceiling over 10 ft (3.0 m) in height where automatic fire detection is being proposed
(14) Details of ceiling geometries, including beams and solid joists, where automatic fire detection is being proposed
(15) Where known, acoustic properties of spaces
(16) Pathway class designations in accordance with Section 12.3, including the location of any end-of-line supervisory or power devices that are required by the pathway class
(17) Pathway survivability level designations in accordance with Section 12.4

Submitter Information Verification

Committee: SIG-FUN
Submittal Date: Tue Jul 23 10:14:45 EDT 2019

Committee Statement

Committee Statement: This revision clarifies that pathway class designations and survivability levels are to be included on floor plan drawings. The modifier “where applicable for the particular system” is appropriate.
Response Message: FR-5085-NFPA 72-2019

Public Input No. 53-NFPA 72-2019 [Section No. 7.4.5]
Public Input No. 193-NFPA 72-2019 [Section No. 7.4.5]

First Revision No. 5080-NFPA 72-2019 [Section No. 7.4.6]

7.4.6

System riser diagrams shall be coordinated with the floor plans and shall include the following information, where applicable for the particular system :

(1) General arrangement of the system in building cross-section

(2) Number of risers

(3) Type and number of circuits in each riser

(4) Type and number of system components/devices on each circuit, on each floor or level

(5) Number of conductors for each circuit

(6) Pathway class designation in accordance with Section 12.3, including the locaton of any end-of-line supervisory or power devices that are required by the pathway class.

(7) *Pathway survivability level designations in accordance with Section 12.4.

A.7.4.6(7)

This includes indication of where pathway survivability is being provided.

Submitter Information Verification

Committee: SIG-FUN

Submittal Date: Tue Jul 23 09:37:15 EDT 2019

Committee Statement

Committee Statement: This revision clarifies that pathway class designations and survivability levels are to be included on riser diagrams.

Additionally, the text clarifies that the riser diagram should show the location of required pathway survivability.

Response Message: FR-5080-NFPA 72-2019

Public Input No. 55-NFPA 72-2019 [New Section after A.7.4.2]

Public Input No. 54-NFPA 72-2019 [Section No. 7.4.6]

First Revision No. 5126-NFPA 72-2019 [Section No. 7.5.3]

7.5.3

All systems including new systems and additions or alterations to existing systems shall include the following documentation, which shall be delivered to the owner or the owner's representative upon final acceptance of the system:

(1) * An owner's manual and manufacturer's published instructions covering all system equipment

(2) Record (as-built) drawings in accordance with 7.5.5

(3) A completed record of completion form in accordance with 7.5.6

(4) For software-based systems, record copy of the site-specific software in accordance with 7.5.7

(5) Where applicable, cyber security documentation

(SIG-FUN)

Submitter Information Verification

Committee: SIG-FUN
Submittal Date: Tue Jul 23 16:45:58 EDT 2019

Committee Statement

Committee Statement: Cyber security documentation must be provided to the owner.
Response Message: FR-5126-NFPA 72-2019

Public Input No. 448-NFPA 72-2019 [Section No. 7.5.3]

Public Input No. 449-NFPA 72-2019 [Section No. 7.5.3]

First Revision No. 5101-NFPA 72-2019 [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.

A.10.3.1

In seismic hazard zones, the fire alarm designer should verify with the AHJ seismic certification requirements for control equipment.

Submitter Information Verification

Committee: SIG-FUN

Submittal Date: Tue Jul 23 11:47:14 EDT 2019

Committee Statement

Committee Statement: This language should be added to start the recognition of fire alarm and life safety systems needing to be hardened to withstand seismic activity.

Response Message: FR-5101-NFPA 72-2019

Public Input No. 226-NFPA 72-2019 [New Section after 10.3.3]

First Revision No. 5097-NFPA 72-2019 [Section No. 10.3.3]

10.3.3*

All devices and appliances that receive their operating power from ~~the~~ an initiating device circuit (IDC) or from a signaling line circuit (SLC) of a control unit shall be listed for use with the control unit.

Submitter Information Verification

Committee: SIG-FUN
Submittal Date: Tue Jul 23 11:18:57 EDT 2019

Committee Statement

Committee Statement: The text clarifies that the "power" in question is operating power. See related edits to annex material.
Response Message: FR-5097-NFPA 72-2019

Public Input No. 103-NFPA 72-2019 [Section No. 10.3.3]

First Revision No. 5341-NFPA 72-2019 [Sections 10.4.5, 10.4.6]

Sections 10.4.5, 10.4.6 6 (See attachment)

10.4.5*

Unless otherwise permitted by 10.4.6, in areas that are not continuously occupied, early warning fire detection shall be at the location of each control unit(s), notification appliance circuit power extender(s), and supervising station transmitting equipment to provide notification of fire at that location by one of the following means:

(1) An automatic smoke detector at the location of each control unit(s), notification appliance circuit power extender(s), and supervising station transmitting equipment

(2) An automatic heat detector where ambient conditions prohibit installation of an automatic smoke detector

A.10.4.5

The control units that are to be protected are those that provide notification of a fire to the occupants and responders. The term *control unit* does not include equipment such as annunciators and addressable devices. Requiring smoke detection at the transmitting equipment is intended to increase the probability that an alarm signal will be transmitted to a supervising station prior to that transmitting equipment being disabled due to the fire condition.

CAUTION: Exception No. 1 to 10.4.5 permits the use of a heat detector if ambient conditions are not suitable for smoke detection. It is important to also evaluate whether the area is suitable for the control unit.

Where the area or room containing the control unit is provided with total smoke detection coverage, additional smoke detection is not required to protect the control unit. Where total smoke detection coverage is not provided, the Code intends that only one smoke detector is required at the control unit even when the area of the room would require more than one detector if installed according to the spacing rules in Chapter 17. The intent of selective coverage is to address the specific location of the equipment.

The location of the required detection should be in accordance with 17.7.3.2.1.

10.4.6

Smoke or heat detector(s) shall not be required to be installed at the location of dedicated function(s) fire alarm control unit(s) that are not required to provide local or supervising station notification signals.

Supplemental Information

File Name	Description	Approved
72_SIG-FUN_FR5341_10.4.5.docx	Staff use	

Submitter Information Verification

Committee: SIG-FUN
Submittal Date: Mon Aug 19 13:14:09 EDT 2019

Committee Statement

Committee Statement: A risk analysis needs to be performed to determine if early warning fire detection is necessary to provide protection for the control unit(s), notification appliance circuit power extender(s) and supervising station transmitting equipment AND if the risk analysis shows smoke or heat detectors are not necessary, the omission must be approved by the AHJ.

Response Message: FR-5341-NFPA 72-2019

Public Input No. 210-NFPA 72-2019 [Section No. 10.4.5]

Public Input No. 211-NFPA 72-2019 [Section No. 10.4.6]

Public Input No. 212-NFPA 72-2019 [New Section after 10.4.6]

Public Input No. 213-NFPA 72-2019 [Section No. A.10.4.5]

Public Input No. 214-NFPA 72-2019 [New Section after A.10.4.5]

First Revision No. 5091-NFPA 72-2019 [New Section after 10.4.7.3]

10.4.8 Abandoned Fire Alarm Equipment.

10.4.8.1

Abandoned fire alarm equipment shall be removed.

10.4.8.2

Abandoned fire alarm equipment shall be marked “not in service” until removed.

Submitter Information Verification

Committee: SIG-FUN

Submittal Date: Tue Jul 23 10:53:57 EDT 2019

Committee Statement

Committee Statement: Abandoned equipment must be removed to avoid confusion between which fire alarm equipment is functional and which is not.

Response Message: FR-5091-NFPA 72-2019

Public Input No. 615-NFPA 72-2019 [New Section after 10.3]

First Revision No. 5122-NFPA 72-2019 [New Section after 10.4.7.3]

10.5 Cyber Security Requirements.

Where required by other governing laws, codes, or standards, systems shall be protected by cyber security requirements.

10.5.1 Systems shall be designed and installed in accordance with one or more of the following cyber security standards:

(1) ANSI/ISA-62443 Series

(2) NIST Framework for Improving Critical Infrastructure Cybersecurity Version 1.1

(3) UL 2900 Series

(4) or other standards accepted by the authority having jurisdiction.

10.5.2 Evidence of compliance with the requirements of 10.5.1 shall include one or more of the following:

(1) The ISA Security Compliance Institute (ISCI) Conformity Assessment Program

(2) Certification of compliance by a Nationally Recognized Test Laboratory

(3) Manufacturer certification for the specific type and brand of system provided.

Submitter Information Verification

Committee: SIG-FUN
Submittal Date: Tue Jul 23 16:15:40 EDT 2019

Committee Statement

Committee Statement: With the changes in technology and communication methods this is a place holder to address potential cyber security threats.

Response Message: FR-5122-NFPA 72-2019

Public Input No. 450-NFPA 72-2019 [New Section after 10.4.7.3]

First Revision No. 5159-NFPA 72-2019 [Section No. 10.6.3.1]

10.6.3.1 – *

Power shall be supplied in accordance with either 10.6.3.2 or 10.6.4.

A.10.6.3.1

Permits the use of an EPSS/SEPSS as the sole power source for a system. Using the EPSS/SEPSS option means that there is no primary and secondary supply. The EPSS/SEPSS serves both purposes, but from one supply point. Because of this, the risk of common mode failures should be considered since certain faults in the EPSS/SEPSS will leave the signaling system without any power.

Submitter Information Verification

Committee: SIG-FUN

Submittal Date: Wed Jul 24 10:31:50 EDT 2019

Committee Statement

Committee Statement: The text provides correlation with NFPA 111, Standard on Stored Electrical Energy Emergency and Standby Power Systems and provides a reference to historical terminology. Additionally, a note to indicate that EPSS/SEPSS systems are UL 1778 listed (or equivalent) and a note to indicate EPSS/SEPSS equipment serves systems from a single connection point.

Response Message: FR-5159-NFPA 72-2019

Public Input No. 638-NFPA 72-2019 [Section No. A.10.6.4]

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Subject to Revision - Not for Publication

First Revision No. 5157-NFPA 72-2019 [Section No. 10.6.4]

10.6.4* ~~Energy Storage Systems (ESS~~ Emergency Power Supply Systems (EPSS) and Stored-Energy Emergency Power Supply Systems (SEPSS).

A.10.6.4

~~ESS~~ EPSS (Emergency Power Supply Systems) and SEPSS (Stored-Energy Emergency Power Supply Systems) classifications are found in NFPA 111. Previous editions of *NFPA 72* referenced ESS and uninterruptible power supplies (UPS) systems~~, which is~~ . A UPS is an SEPSS and a UPS is one type of an ESS. NFPA 111 power supply systems listed by UL are listed to UL 1778.

10.6.4.1

~~The ESS device shall~~ An EPSS/SEPSS that is not arraged in accordance with 10.6.4.2 shall comply with all of the following:

(1) An EPSS shall be configured in compliance with NFPA 111 for a Type O, ~~Class 24~~ Level 1 system

(2) An SEPSS shall be configured in compliance with NFPA 111 for a Type U , Level 1 system

(3) The EPSS/SEPSS shall be capable of powering the maximum required system load

(4) The EPSS/SEPSS shall have capacity in accordance with 10 .6.7.2

10.6.4.2

Where connected to an engine-driven generator arranged in accordance with 10.6.11.3.1, ~~the ESS device~~ an EPSS/SEPSS that complies with with all of the following shall be permitted to:

(1) An EPSS shall be configured in compliance with NFPA 111 for a Type O, Class 4, Level 1 system~~.~~

(2) An SEPSS shall be configured in compliance with NFPA 111 or a Type U, Class 4, Level 1 system

(3) The EPSS/SEPSS shall be capable of powering the maxiimum required system load

10.6.4.3

~~The ESS device~~ An EPSS/SEPSS shall comply with the requirements of 10.6.5.

10.6.4.4

Failure of ~~the ESS~~ an EPSS/SPESS shall result in the initiation of a trouble signal in accordance with ~~Section~~ 10.15.

Submitter Information Verification

Committee: SIG-FUN
Submittal Date: Wed Jul 24 10:13:22 EDT 2019

Committee Statement

Committee Statement: The text correlates with NFPA 111 Standard on Stored Electrical Energy Emergency and Standby Power Systems. The Technical Committee revises the text by deleting the Class 24 capacity designation and adds text to require EPSS/SEPSS capacity in accordance with this Code. The reference to 10.6.7.3.1(2) in PI 636 was not included since this is addressed by the 10.6.4.2 Class 4 requirement and there is no standby vs. alarm load differentiated in 10.6.7.3.1(2).

Response Message: FR-5157-NFPA 72-2019

Public Input No. 637-NFPA 72-2019 [New Section after 10.6.4.1]

Public Input No. 384-NFPA 72-2019 [Section No. 10.6.4.3]

Public Input No. 440-NFPA 72-2019 [Section No. 10.6.4]

Public Input No. 635-NFPA 72-2019 [Section No. 10.6.4.1]

Public Input No. 636-NFPA 72-2019 [New Section after 10.6.4.1]

Public Input No. 385-NFPA 72-2019 [Section No. A.10.6.4]

First Revision No. 5186-NFPA 72-2019 [Section No. 10.6.7.2]

10.6.7.2* Capacity.

A.10.6.7.2

When a fire alarm system is used to alert occupants, the associated premises are generally evacuated during prolonged power outages. When this is not the case, as in emergency shelters or certain government facilities, additional secondary power should be required to address a more prolonged outage. These outages might be expected to result from weather or earthquake in locations subject to these events. Reasonable judgment should be employed when requiring additional secondary capacity.

When a fire alarm system is used to protect property, the associated premises might be vacant for prolonged periods (weekend, long holiday) or in very remote locations. When this is the case, and when the risk of loss is significant, additional secondary power should be required to address a more prolonged outage. These outages might be expected to result from weather or earthquake in locations subject to these events. Reasonable judgment should be employed when requiring additional secondary capacity.

10.6.7.2.1

The secondary power supply for the protected premises shall have sufficient capacity to operate the system under quiescent load (system operating in a nonalarm condition) for a minimum of 24 hours and, at the end of that period, shall be capable of operating all alarm notification appliances used for evacuation or to direct aid to the location of an emergency for 5 minutes, unless otherwise permitted or required by 10.6.7.2.1.1 through 10.6.7.2.2.

10.6.7.2.~~1.1~~ 3 *

~~Battery~~ As a minimum, battery calculations shall ~~include a minimum 20 percent safety margin above the calculated amp-hour capacity required~~ apply a correction factor of 1.25 for aging to ensure the battery can meet its current demand at the end of service life .

A.10.6.7.2.~~1.1~~ –

~~The 20-percent safety margin is~~

3 .

Correction factors are intended to address normal aging and temperature effects on battery capacity. As a lead-acid battery ages, rated capacity will decrease to 80 percent, which is considered the end of service life. As a minimum, a ~~20-percent~~ correction factor of 1.25 should be applied for aging to ensure the battery can meet its current demand at the end of service life. At initial installation, lead-acid battery capacity can be as low as 90 percent and should gradually increase when it is subjected to several deep discharge/charging cycles or when it remains on float-charge for several weeks.

Battery calculations should include correction factors established for the battery technology to ensure that the required calculated amp-hour capacity remains available during the service life of the batteries and to compensate for changes in capacity where the batteries will be operated outside their nominal temperature range.

Temperature also affects lead-acid batteries. For additional information on lead-acid battery sizing considerations refer to IEEE 485, *Recommended Practice for Sizing Lead-Acid Batteries for Stationary Applications.*

Different battery technologies will require different correction factors.

10.6.7.2.1.~~2~~ – 1 .

The secondary power supply for in-building fire emergency voice/alarm communications service shall be capable of operating the system under quiescent load for a minimum of 24 hours and then shall be capable of operating the system during a fire or other emergency condition for a period of 15 minutes at maximum connected load.

10.6.7.2.1.3 – 2

The secondary power supply capacity for supervising station facilities and equipment shall be capable of supporting operations for a minimum of 24 hours.

10.6.7.2.1.4 – 3

The secondary power supply for high-power loudspeaker arrays used for wide-area mass notification systems shall be in accordance with 24.6.5.2.

10.6.7.2.1.5 – 4

The secondary power supply for textual visual notification appliances shall be in accordance with 24.6.10.1.

10.6.7.2.1.6 – 5

The secondary power supply capacity for emergency command centers of a wide-area mass notification systems shall be capable of supporting operations for a minimum of 24 hours.

10.6.7.2.1.7 – 6

The secondary power supply for in-building mass notification systems shall be capable of operating the system under quiescent load for a minimum of 24 hours and then shall be capable of operating the system during emergency conditions for a period of 15 minutes at maximum connected load.

10.6.7.2. 1.7

The secondary power supply for communications equipment at the protected premises that is used to transmit signals to a supervising station shall have sufficient capacity to operate the system under quiescent load (system operating in a nonalarm condition) for a minimum of 24 hours and, at the end of that period, shall be capable of transmitting signals for a period of 5 minutes.

10.6.7. 2.2

The secondary power supply capacity required shall include all power supply loads that are not automatically disconnected upon the transfer to secondary power supply.

10.6.7.2.3 4 *

Where carbon monoxide detection is not monitored by a supervising station, the secondary power supply shall have sufficient capacity to operate the carbon monoxide detection system under quiescent load (system operating in a nonalarm condition) for a minimum of 24 hours and, at the end of that period, shall be capable of operating the carbon monoxide detection system and all carbon monoxide notification appliances for 12 hours.

A.10.6.7.2.3 – 4

For combination systems, such as a combination carbon monoxide and fire alarm system, where the carbon monoxide notification appliances are capable of being operated separately from the fire alarm system notification appliances, only the carbon monoxide notification appliances are required to operate for 12 hours.

10.6.7.2.4 – 5

Where carbon monoxide detection is monitored by a supervising station, the secondary power supply shall have sufficient capacity to operate the carbon monoxide detection system under quiescent load (system operating in a nonalarm condition) for a minimum of 24 hours and, at the end of that period, shall be capable of operating the carbon monoxide detection system and all notification appliances for 5 minutes.

Submitter Information Verification

Committee: SIG-FUN
Submittal Date: Wed Jul 24 15:03:06 EDT 2019

Committee Statement

Committee Statement: The text has been reorganized for readability. Thus, carbon monoxide detection remains a separate section.

The Technical Committee revises the text for derating batteries (10.6.7.2.3) to apply a minimum 1.25 correction factor and adds further guidance to the annex for other battery technologies and

temperature compensation.

The Technical Committee adds the section numbered 10.6.7.2.1.7 to clarify that communications equipment at the protected premises that is used to transmit signals to a supervising station must have primary and secondary power sources.

The Technical Committee does not accept a mandated minimum with respect to the number of addressable devices that should be supported during an alarm condition. This parameter should be specified by the manufacturer in accordance with the product listing.

Response Message: FR-5186-NFPA 72-2019

Public Input No. 309-NFPA 72-2019 [Section No. 10.6.7.2]

Public Input No. 580-NFPA 72-2019 [New Section after A.10.6.7.2.1.1]

Public Input No. 560-NFPA 72-2019 [Section No. 10.6.7.2.1.1]

Public Input No. 576-NFPA 72-2019 [Section No. A.10.6.7.2.1.1]

Public Input No. 564-NFPA 72-2019 [New Section after 10.6.7.2.1.2]

Public Input No. 17-NFPA 72-2018 [Section No. 10.6.7.2.1.1]

Public Input No. 393-NFPA 72-2019 [New Section after 10.6.7.2.1.7]

First Revision No. 5143-NFPA 72-2019 [New Section after 10.6.8.4]

10.6.8.5

An uninterruptible power supply (UPS) listed to the requirements of an applicable standard such as UL 864 shall be permitted to supply power to remotely located control equipment.

Submitter Information Verification

Committee: SIG-FUN
Submittal Date: Wed Jul 24 08:04:56 EDT 2019

Committee Statement

Committee Statement: The appropriate standard for fire alarm systems is UL 864.
Response Message: FR-5143-NFPA 72-2019

Public Input No. 383-NFPA 72-2019 [New Section after 10.6.8.4]

First Revision No. 5147-NFPA 72-2019 [New Section after 10.6.10.1.2]

10.6.10.1.3*
Effective January 1, 2024, rechargeable batteries for the secondary power supply used in control units, devices and accessories shall be listed or component recognized by a nationally recognized testing laboratory.

A.10.6.10.1.3
Examples of listing standards are: UL 1989 Standard for Standby Batteries and UL 2054 Standard for Household and Commercial Batteries.

Submitter Information Verification

Committee: SIG-FUN
Submittal Date: Wed Jul 24 09:15:51 EDT 2019

Committee Statement

Committee Statement: The Technical Committee adds a requirement for the use of recognized rechargeable batteries because energy density and associated safety concerns are increasing.
Response Message: FR-5147-NFPA 72-2019

Public Input No. 146-NFPA 72-2019 [New Section after 10.6.10.1.2]

First Revision No. 5185-NFPA 72-2019 [Section No. 10.6.10.1.2]

10.6.10.1.2

Where the battery is not marked with the month/year by the manufacturer, the installer shall obtain the date-code and mark the battery with the month/year of battery manufacture; the installer shall label the battery with a replacement date which does not exceed 4 years from the installation date .

Submitter Information Verification

Committee: SIG-FUN

Submittal Date: Wed Jul 24 14:54:33 EDT 2019

Committee Statement

Committee Statement: The recommended replacement cycle for these batteries is 4 years per the battery manufacturers.

Response Message: FR-5185-NFPA 72-2019

First Revision No. 5179-NFPA 72-2019 [Section No. 10.6.10.6]

10.6.10.6– * _ Monitoring Integrity of Battery Charging Equipment.

A. 10.6.10.6

Manufacturers of fire alarm and emergency communications systems provide a means for supervising the battery charger's capability to properly charge the battery(ies) . There typically is no means to test the battery charger for this trouble condition in the field.

10.6.10.6. 1

Means shall be provided to detect the failure of a battery charger.

10.6.10.6.2

Failure of the battery charger shall result in a trouble signal in accordance with Section 10.15.

Submitter Information Verification

Committee: SIG-FUN
Submittal Date: Wed Jul 24 13:12:17 EDT 2019

Committee Statement

Committee Statement: The Technical Committee adds annex material to indicate that it may not be possible to test the battery charger monitoring means in the field.
Response Message: FR-5179-NFPA 72-2019

Public Input No. 145-NFPA 72-2019 [Section No. A.10.6.10.3.4]

WORKING DRAFT OF COMMITTEE MEETING OUTPUT - NFPA 72 - July 2019
Subject to Revision - Not for Publication

First Revision No. 5148-NFPA 72-2019 [Section No. 10.6.11.3.1.3]

10.6.11.3.1.3

Where pathway survivability ~~of circuits~~ is required by another section of the Code, equal protection shall be provided for power supply circuits.

Submitter Information Verification

Committee: SIG-FUN
Submittal Date: Wed Jul 24 09:19:08 EDT 2019

Committee Statement

Committee Statement: The text is revised for consistency with defined terms.
Response Message: FR-5148-NFPA 72-2019

Public Input No. 64-NFPA 72-2019 [Section No. 10.6.11.3.1.3]

WORKING DRAFT OF COMMITTEE MEETING OUTPUT - NFPA 72 - July 2019
Subject to Revision - Not for Publication

First Revision No. 5168-NFPA 72-2019 [Section No. 10.6.11.6.3]

10.6.11.6.3

Fuel systems using natural or manufactured gas supplied through reliable utility mains shall not be required to have fuel storage tanks unless located in seismic risk zone 3 or greater as defined in ~~ANSI A-58.1, Building Code Requirements for~~ ASCE/SEI 7, *Minimum Design Loads* ~~in~~ *and Associated Criteria for Buildings and Other Structures* .

Submitter Information Verification

Committee: SIG-FUN
Submittal Date: Wed Jul 24 11:45:17 EDT 2019

Committee Statement

Committee Statement: The Technical Committee updates the reference.
Response Message: FR-5168-NFPA 72-2019

First Revision No. 5149-NFPA 72-2019 [New Section after 10.7.9]

10.7.10
Combination systems shall comply with 23.8.4.7.

Submitter Information Verification

Committee: SIG-FUN
Submittal Date: Wed Jul 24 09:21:50 EDT 2019

Committee Statement

Committee Statement: Chapter 23 contains priority of signals when combination systems are installed.
Response Message: FR-5149-NFPA 72-2019

Public Input No. 66-NFPA 72-2019 [New Section after 10.7.9]

First Revision No. 5150-NFPA 72-2019 [Section No. 10.10.9]

10.10.9

Carbon monoxide alarm signals shall comply with 18.4.4 3 .2 .

Submitter Information Verification

Committee: SIG-FUN
Submittal Date: Wed Jul 24 09:25:10 EDT 2019

Committee Statement

Committee Statement: The Technical Committee corrects the section reference.
Response Message: FR-5150-NFPA 72-2019

Public Input No. 366-NFPA 72-2019 [Section No. 10.10.9]

First Revision No. 5152-NFPA 72-2019 [Section No. 10.15.9.2]

10.15.9.2

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~~(3) and (4)~~ .1 and 23.16.2.2 shall automatically resound every 4 hours or less until the depletion signal is restored to normal.

Submitter Information Verification

Committee: SIG-FUN
Submittal Date: Wed Jul 24 09:30:19 EDT 2019

Committee Statement

Committee Statement: The Technical Committee corrects the section references.
Response Message: FR-5152-NFPA 72-2019

Public Input No. 646-NFPA 72-2019 [Section No. 10.15.9.2]

First Revision No. 5172-NFPA 72-2019 [Section No. 10.17.2]

~~**10.17.2** *~~ –

~~Notification appliance circuits that do not have notification appliances connected directly to the circuit shall be considered control circuits.~~

~~**A.10.17.2** –~~

~~Initially this requirement was meant to apply to notification appliance circuits (NACs) emanating from a single fire alarm control unit and did not contemplate the use of NAC extender panels. Acknowledging the control circuit concept allows NAC extender panels and relays to be connected to a control circuit.~~

Submitter Information Verification

Committee: SIG-FUN
Submittal Date: Wed Jul 24 12:47:45 EDT 2019

Committee Statement

Committee Statement: The term "Control Circuit" has been defined in Chapter 3 to distinguish it from a Notification Appliance Circuit and deletes 10.17.2 and A.10.17.2 as they are no longer needed.

The Technical Committee requests the SIG-PRO Technical Committee and the Correlating Committee change 21.2.4 and A.21.2.4 to replace the term “control circuit” with “pathway” to avoid conflict.

Response Message: FR-5172-NFPA 72-2019

Public Input No. 47-NFPA 72-2019 [Section No. 10.17.2]

Public Input No. 50-NFPA 72-2019 [Section No. 10.17.3]

First Revision No. 5175-NFPA 72-2019 [Section No. 10.17.3]

10.17.3

Control circuits ~~used for the purpose of controlling NAC extender panels~~ shall comply with all of the following:

(1) ~~The NAC extender panel(s) connected to the~~ A control circuit shall not serve more than one notification zone.

(2) The control circuit shall be monitored for integrity in accordance with Section 12.6.

(3) A fault in the control circuit installation conductors shall result in a trouble signal in accordance with Section 10.15.

Submitter Information Verification

Committee: SIG-FUN

Submittal Date: Wed Jul 24 13:00:13 EDT 2019

Committee Statement

Committee Statement: The Technical Committee edits the text to clarify use of control circuits. By limiting control circuits to a single notification zone it addresses partial evacuation.

Response Message: FR-5175-NFPA 72-2019

Public Input No. 62-NFPA 72-2019 [Section No. 10.17.3]

Public Input No. 48-NFPA 72-2019 [Section No. 10.17.3]

Public Input No. 392-NFPA 72-2019 [Section No. 10.17.3]

First Revision No. 5171-NFPA 72-2019 [Sections 10.18.1, 10.18.2]

Sections 10.18.1, 10.18.2

10.18.1 Alarm Annunciation.

~~**10.18.1.1** –~~

Where required by other governing laws, codes, or standards, the location of an operated initiating device shall be annunciated by visible means.

~~**10.18.1.1.1** – _~~

Visible annunciation of the location of an operated initiating device shall be by an indicator lamp, alphanumeric display, printout, or other approved means.

~~**10.18.1.1. 2** – *~~

The visible annunciation of the location of operated initiating devices shall not be canceled by the means used to deactivate alarm notification appliances.

A. 10.18.

~~2 – Supervisory and Trouble Annunciation.~~

1.2

The visible annunciation required by this section must remain "on" even if other appliances are silenced, shut off or disabled. Most often, a control unit will sound an audible signal and display a visual alert of an incoming signal. The audible signal is permitted to be deactivated, but the visual signal must remain active. Or, a system in a high noise area might use high power visual appliances for occupant alerting. Deactivating those signals, without resetting the system, is not permitted to deactivate the visual means required by this section.

10.18.2 _ Supervisory and Trouble Annunciation . ~~1 –~~

Where required by other governing laws, codes, or standards, supervisory and/or trouble conditions shall be annunciated by visible means.

~~**10.18.2.1.1** – _~~

Visible annunciation shall be by an indicator lamp, an alphanumeric display, a printout, or other means.

~~**10.18.2.1. 2**~~

The visible annunciation of supervisory and/or trouble conditions shall not be canceled by the means used to deactivate supervisory or trouble notification appliances.

Submitter Information Verification

Committee: SIG-FUN
Submittal Date: Wed Jul 24 12:39:57 EDT 2019

Committee Statement

Committee Statement: The Technical Committee reorganizes the sections to address style and editorial issues. The Technical Committee views the visible annunciation as generally provided by an annunciator (defined in 3.3.21) and not a notification appliance (defined in 3.3.182). Thus the “other” as suggested in PI 131 and PI 133 was not included. Attempts to rewrite the section to use the term annunciator was defeated by the allowance of a printout, which is neither an annunciator or a notification appliance.

Response Message: FR-5171-NFPA 72-2019

Public Input No. 133-NFPA 72-2019 [Sections 10.18.2.1.1, 10.18.2.1.2]

Public Input No. 130-NFPA 72-2019 [Sections 10.18.1.1.1, 10.18.1.1.2]

Public Input No. 131-NFPA 72-2019 [Section No. 10.18.1.1.2]

Public Input No. 132-NFPA 72-2019 [New Section after A.10.17.2]

WORKING DRAFT OF COMMITTEE MEETING OUTPUT - NFPA 72 - July 2019
Subject to Revision - Not for Publication

First Revision No. 5170-NFPA 72-2019 [Section No. 10.19.1.3]

10.19.1.3– * -

Failure of any tone-generating equipment shall result in a trouble signal, unless the tone-generating and amplifying equipment are enclosed as integral parts and serve only a single, listed loudspeaker.

A.10.19.1.3

Manufacturers of fire alarm and emergency communications systems provide a means for supervising the tone generating equipment capability to properly generate tones. There typically is no means to test the tone generator failure for this trouble condition in the field.

Submitter Information Verification

Committee: SIG-FUN

Submittal Date: Wed Jul 24 12:30:30 EDT 2019

Committee Statement

Committee Statement: The Technical Committee adds annex text to indicate that testing of the tone generator supervision may not be possible in the field.

Response Message: FR-5170-NFPA 72-2019

Public Input No. 144-NFPA 72-2019 [Section No. A.10.19.1]

First Revision No. 5074-NFPA 72-2019 [Section No. A.3.3.61.1.2]

A.3.3.61.1.2 Pre-Alarm Condition.

Some examples of pre-alarm conditions include the following: the presence of a very small amount of visible smoke (at levels below listed initiating device alarm thresholds), the presence of a smoke-like odor, a somewhat elevated temperature, and a gradually increasing temperature. Any abnormal condition that typically precedes an alarm condition can be termed a *pre-alarm condition*.

The amount of time available for investigating the cause of a pre-alarm condition is not a known quantity. If conditions deteriorate to the point of alarm, time is no longer available for investigation. Pre-alarm conditions might or might not progress to alarm conditions.

The detection of pre-alarm conditions ~~may~~ could be desirable in some occupancies, particularly if environmental conditions are ordinarily well controlled (e.g., integrated circuit fabrication facility) and personnel are trained to respond appropriately. In other occupancies, the detection of pre-alarm conditions ~~may~~ might not be desirable or necessary.

The term *pre-alarm condition* is different from the terms *positive alarm sequence*, *alarm verification*, and *pre-signal*.

Submitter Information Verification

Committee: SIG-FUN
Submittal Date: Tue Jul 23 09:07:14 EDT 2019

Committee Statement

Committee Statement: The Technical Committee removes the word “may” in accordance with the Manual of Style.
Response Message: FR-5074-NFPA 72-2019

Public Input No. 361-NFPA 72-2019 [Section No. A.3.3.61.1.2]

First Revision No. 5107-NFPA 72-2019 [Section No. A.7.8.2(1)]

A.7.8.2(1)

Examples of completed record of completion forms are shown in Figure A.7.8.2(1)(a) through Figure A.7.8.2(1)(f).

In Figure 7.8.2(a) section 6, an example of a dual pathway is a circuit that is a continuous circuit connected to a FACU at two terminal locations, and an example of a separate pathway is a circuit that is only connected to the FACU at one terminal location.

Figure A.7.8.2(1)(a) Example of Completed 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: 2 November 2019 Supplemental Pages Attached: 0

1. PROPERTY INFORMATION
Name of property: World Storage and Transfer Headquarters
Address: 27132 Santa Anita Boulevard, Hilo, HI
Description of property: Business and Office Building
Name of property representative: Joe Bago Donite
Address: As above
Phone: (743) 225-9768 Fax: (743) 225-9768 E-mail: jbago@WLST.net

2. INSTALLATION, SERVICE, TESTING, AND MONITORING INFORMATION
Installation contractor: Sparkee's Electric
Address: 1954 Nimitz Highway, Honolulu, HI 76542
Phone: (978) 456-9876 Fax: (978) 456-9876 E-mail: shortcircuitguy@sparkee.net
Service organization: None
Address:
Phone: Fax: E-mail:
Testing organization: Jim's Protection, Inc.
Address: 2300 Daly Boulevard, Austin, TX
Phone: (407) 738-4587 Fax: (407) 738-4588 E-mail: testerjim@JPI.com
Effective date for test and inspection contract: 25 January 2011
Monitoring organization: Look the Other Way, Inc.
Address: 995 Highway 35W, Minneapolis, MN
Phone: (412) 456-9078 Fax: (412) 456-7272 E-mail: Look@otherway.com
Account number: 56754588 Phone line 1: (212) 978-6576 Phone line 2: (212) 978-9978
Means of transmission: IP
Entity to which alarms are retransmitted: Honolulu FD Phone: (808) 456-5555

3. DOCUMENTATION
On-site location of the required record documents and site-specific software: Building Mgrs. Office Room 203

4. DESCRIPTION OF SYSTEM OR SERVICE
This is a: ☒ New system ❑ Modification to existing system Permit number: 11-907645
NFPA 72 edition: 2019

4.1 Control Unit
Manufacturer: Halter Cabinet Model number: 1019-7647

4.2 Software and Firmware
Firmware revision number: 7.0 B Executive Rev 9.11

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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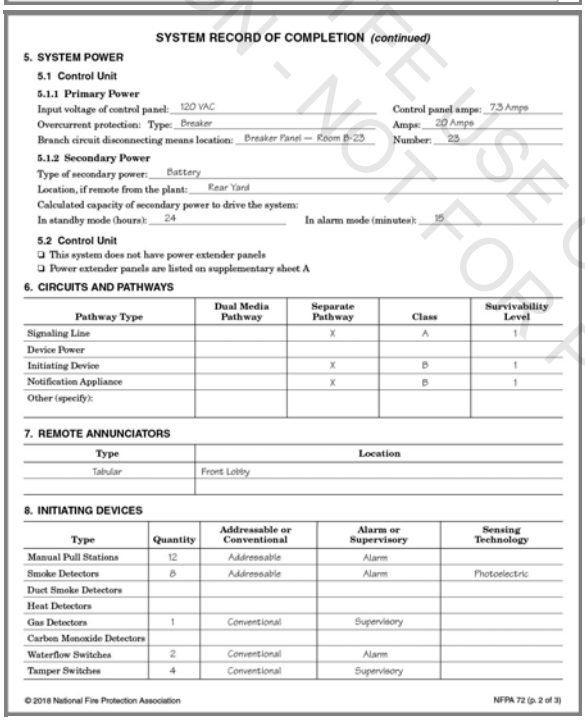

SYSTEM RECORD OF COMPLETION *(continued)*

5. SYSTEM POWER

5.1 Control Unit

5.1.1 Primary Power
Input voltage of control panel: 120 VAC Control panel amps: 7.3 Amps
Overcurrent protection: Type: Breaker Amps: 20 Amps
Branch circuit disconnecting means location: Breaker Panel — Room B-23 Number: 23

5.1.2 Secondary Power
Type of secondary power: Battery
Location, if remote from the plant: Rear Yard
Calculated capacity of secondary power to drive the system:
In standby mode (hours): 24 In alarm mode (minutes): 15

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 Media Pathway	Separate Pathway	Class	Survivability Level
Signaling Line		X	A	1
Device Power				
Initiating Device		X	B	1
Notification Appliance		X	B	1
Other (specify):				

7. REMOTE ANNUNCIATORS

Type	Location
Tabular	Front Lobby

8. INITIATING DEVICES

Type	Quantity	Addressable or Conventional	Alarm or Supervisory	Sensing Technology
Manual Pull Stations	12	Addressable	Alarm	
Smoke Detectors	8	Addressable	Alarm	Photoelectric
Duct Smoke Detectors				
Heat Detectors				
Gas Detectors	1	Conventional	Supervisory	
Carbon Monoxide Detectors				
Waterflow Switches	2	Conventional	Alarm	
Tamper Switches	4	Conventional	Supervisory	

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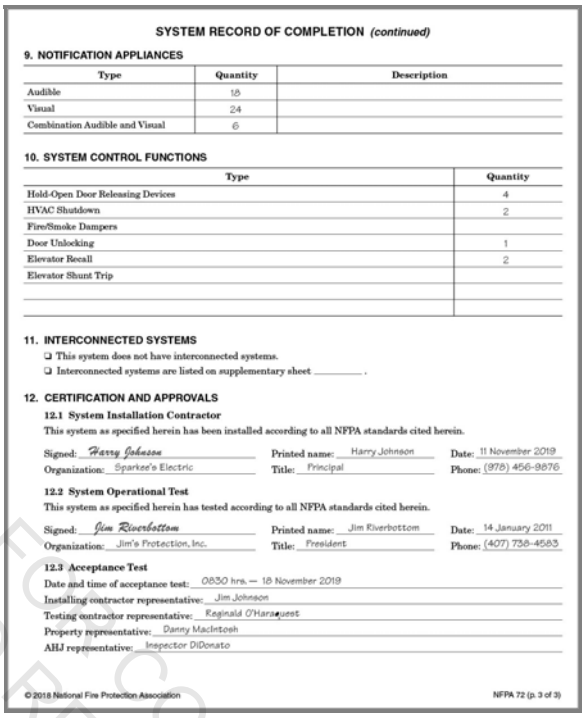

SYSTEM RECORD OF COMPLETION *(continued)*

9. NOTIFICATION APPLIANCES

Type	Quantity	Description
Audible	18	
Visual	24	
Combination Audible and Visual	6	

10. SYSTEM CONTROL FUNCTIONS

Type	Quantity
Hold-Open Door Releasing Devices	4
HVAC Shutdown	2
Fire/Smoke Dampers	
Door Unlocking	1
Elevator Recall	2
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: Harry Johnson Printed name: Harry Johnson Date: 11 November 2019
Organization: Sparkee's Electric Title: Principal Phone: (978) 456-9876

12.2 System Operational Test

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

Signed: Jim Riverbottom Printed name: Jim Riverbottom Date: 14 January 2011
Organization: Jim's Protection, Inc. Title: President Phone: (407) 738-4583

12.3 Acceptance Test

Date and time of acceptance test: 0830 hrs. — 18 November 2019
Installing contractor representative: Jim Johnson
Testing contractor representative: Reginald O'Harasquest
Property representative: Danny MacIntosh
AHJ representative: Inspector DiDonato

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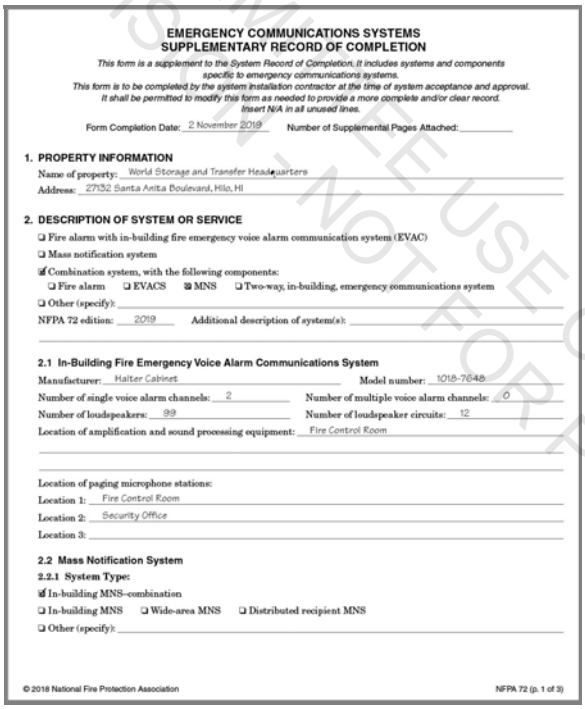
Figure A.7.8.2(1)(b) Example of Completed Emergency Communications System Supplementary Record of Completion.



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 clear record.
Insert N/A in all unused lines.

Form Completion Date: 2 November 2019 Number of Supplemental Pages Attached: _____

1. PROPERTY INFORMATION

Name of property: World Storage and Transfer Headquarters
Address: 27132 Santa Anita Boulevard, Hilo, HI

2. DESCRIPTION OF SYSTEM OR SERVICE

❑ Fire alarm with in-building fire emergency voice alarm communication system (EVAC)
❑ 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: 2019 Additional description of system(s): _____

2.1 In-Building Fire Emergency Voice Alarm Communications System

Manufacturer: Halter Cabinet Model number: 1018-7648
Number of single voice alarm channels: 2 Number of multiple voice alarm channels: 0
Number of loudspeakers: 99 Number of loudspeaker circuits: 12
Location of amplification and sound processing equipment: Fire Control Room

Location of paging microphone stations:
Location 1: Fire Control Room
Location 2: Security Office
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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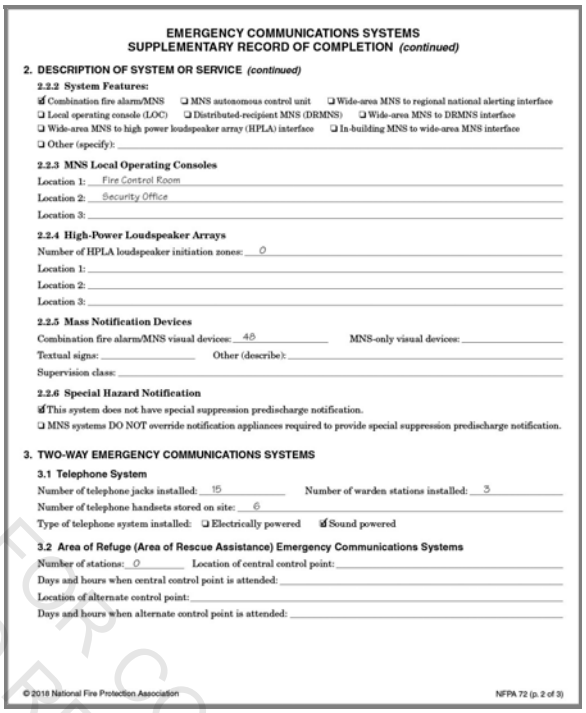

EMERGENCY COMMUNICATIONS SYSTEMS
SUPPLEMENTARY RECORD OF COMPLETION *(continued)*

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 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: Fire Control Room
Location 2: Security Office
Location 3: _____

2.2.4 High-Power Loudspeaker Arrays

Number of HPLA loudspeaker initiation zones: 0
Location 1: _____
Location 2: _____
Location 3: _____

2.2.5 Mass Notification Devices

Combination fire alarm/MNS visual devices: 48 MNS-only visual devices: _____
Textual signs: _____ Other (describe): _____
Supervision class: _____

2.2.6 Special Hazard Notification

☑ This system does not have special suppression predischarge notification.
☐ MNS systems DO NOT override notification appliances required to provide special suppression predischarge notification.

3. TWO-WAY EMERGENCY COMMUNICATIONS SYSTEMS

3.1 Telephone System

Number of telephone jacks installed: 15 Number of warden stations installed: 3
Number of telephone handsets stored on site: 6
Type of telephone system installed: ☐ Electrically powered ☑ Sound powered

3.2 Area of Refuge (Area of Rescue Assistance) Emergency Communications Systems

Number of stations: 0 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: 2 Location of central control point: Fire Control Room
Days and hours when central control point is attended: 24
Location of alternate control point: None
Days and hours when alternate control point is attended: None

3.4 Other Two-Way Communications System

Describe: _____

4. CONTROL FUNCTIONS

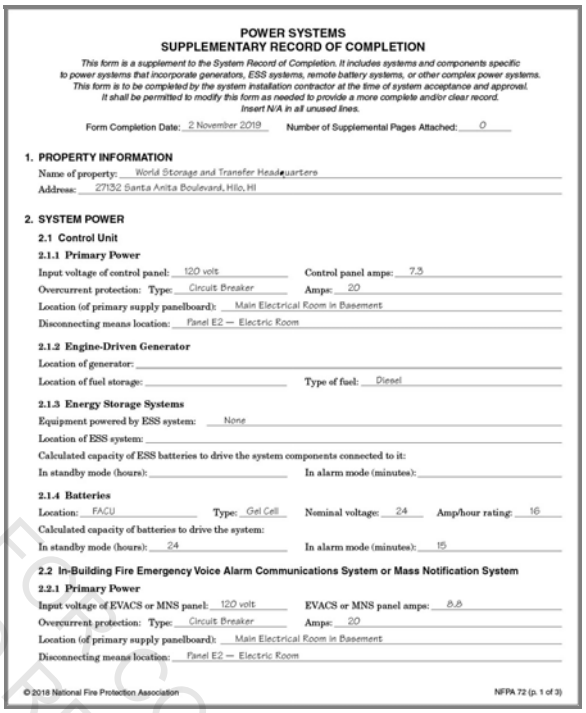
This system actuates the following control functions specific to emergency communications systems:

Type	Quantity
Mass Notification Override of Alarm Signaling Systems or Appliances	1

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

 NFPA 72 (p. 3 of 3)

Figure A.7.8.2(1)(c) Example of Completed 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, ESS 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: 2 November 2019 Number of Supplemental Pages Attached: 0

1. PROPERTY INFORMATION

Name of property: World Storage and Transfer Headquartere

Address: 27132 Santa Anita Boulevard, Hilo, HI

2. SYSTEM POWER

2.1 Control Unit

2.1.1 Primary Power

Input voltage of control panel: 120 volt Control panel amps: 7.5

Overcurrent protection: Type: Circuit Breaker Amps: 20

Location (of primary supply panelboard): Main Electrical Room in Basement

Disconnecting means location: Panel E2 — Electric Room

2.1.2 Engine-Driven Generator

Location of generator:

Location of fuel storage: Type of fuel: Diesel

2.1.3 Energy Storage Systems

Equipment powered by ESS system: None

Location of ESS system:

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

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

2.1.4 Batteries

Location: FACU Type: Gel Cell Nominal voltage: 24 Amp/hour rating: 16

Calculated capacity of batteries to drive the system:

In standby mode (hours): 24 In alarm mode (minutes): 15

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

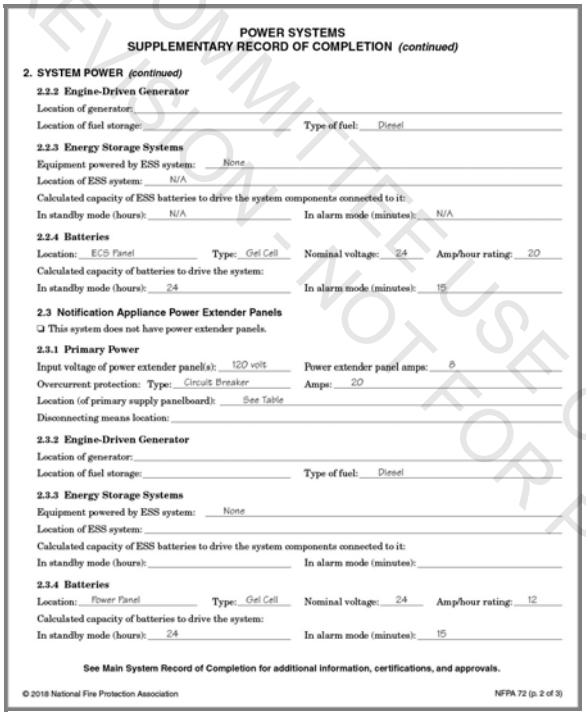
2.2.1 Primary Power

Input voltage of EVACS or MNS panel: 120 volt EVACS or MNS panel amps: 8.8

Overcurrent protection: Type: Circuit Breaker Amps: 20

Location (of primary supply panelboard): Main Electrical Room in Basement

Disconnecting means location: Panel E2 — Electric Room



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: Diesel

2.2.3 Energy Storage Systems

Equipment powered by ESS system: None

Location of ESS system: N/A

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

In standby mode (hours): N/A In alarm mode (minutes): N/A

2.2.4 Batteries

Location: ECS Panel Type: Gel Cell Nominal voltage: 24 Amp/hour rating: 20

Calculated capacity of batteries to drive the system:

In standby mode (hours): 24 In alarm mode (minutes): 15

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): 120 volt Power extender panel amps: 8

Overcurrent protection: Type: Circuit Breaker Amps: 20

Location (of primary supply panelboard): See Table

Disconnecting means location:

2.3.2 Engine-Driven Generator

Location of generator:

Location of fuel storage: Type of fuel: Diesel

2.3.3 Energy Storage Systems

Equipment powered by ESS system: None

Location of ESS system:

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

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

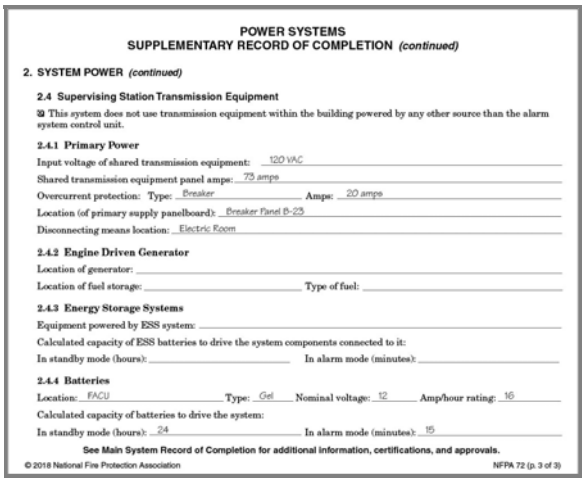
2.3.4 Batteries

Location: Power Panel Type: Gel Cell Nominal voltage: 24 Amp/hour rating: 12

Calculated capacity of batteries to drive the system:

In standby mode (hours): 24 In alarm mode (minutes): 15

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



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: 120 VAC

Shared transmission equipment panel amps: 75 amps

Overcurrent protection: Type: Breaker Amps: 20 amps

Location (of primary supply panelboard): Breaker Panel B-25

Disconnecting means location: Electric Room

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: FACU Type: Gel Nominal voltage: 12 Amp/hour rating: 16

Calculated capacity of batteries to drive the system:

In standby mode (hours): 24 In alarm mode (minutes): 15

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

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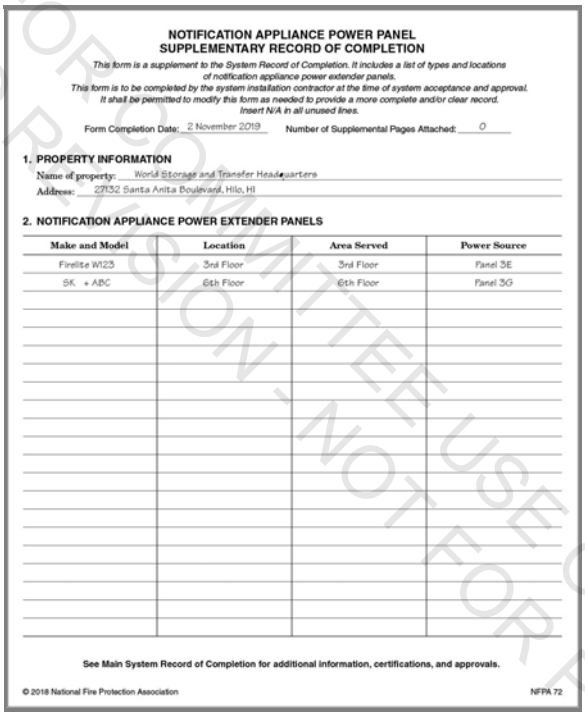
Figure A.7.8.2(1)(d) Example of Completed Notification Appliance Power Panel Supplementary Record of Completion.



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 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: 2 November 2019 Number of Supplemental Pages Attached: 0

1. PROPERTY INFORMATION

Name of property: World Storage and Transfer Headquarters

Address: 27132 Santa Anita Boulevard, Hilo, HI

2. NOTIFICATION APPLIANCE POWER EXTENDER PANELS

Make and Model	Location	Area Served	Power Source
Firelite W123	3rd Floor	3rd Floor	Panel 3E
SK + ABC	6th Floor	6th Floor	Panel 3G

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

 NFPA 72

Figure A.7.8.2(1)(e) Example of Completed Interconnected Systems Supplementary Record of Completion.

INTERCONNECTED SYSTEMS
SUPPLEMENTARY RECORD OF COMPLETION

This form is a supplement to the System Record of Completion. It includes a list of types and locations of systems that are interconnected to the main system.
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: 2 November 2019 Number of Supplemental Pages Attached: _____

1. PROPERTY INFORMATION
Name of property: World Storage and Transfer Headquartere
Address: 27132 Santa Anita Boulevard, Hilo, HI

2. INTERCONNECTED SYSTEMS

Description	Location	Purpose
Fan Shutdown	Roof	Shut down fans on fire alarm activation
Elevator Recall	Elevator Room	Recall elevators in case of alarm on lobby smoke detectors

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

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Figure A.7.8.2(1)(f) Example of Completed 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: 2 November 2019 Number of Supplemental Pages Attached: _____

1. PROPERTY INFORMATION
Name of property: World Storage and Transfer Headquartere
Address: 27132 Santa Anita Boulevard, Hilo, HI

2. DEVIATIONS FROM ADOPTED CODES OR STANDARDS

Description	Purpose
Waterflow switch set to a 120-second trip	Issue has been identified that there are water surges during evening hours

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

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Submitter Information Verification

Committee: SIG-FUN
Submittal Date: Tue Jul 23 13:04:44 EDT 2019

Committee Statement

Committee Statement: The Technical Committee edits the text for clarity.
Response Message: FR-5107-NFPA 72-2019

Public Input No. 363-NFPA 72-2019 [Section No. A.7.8.2(1)]

First Revision No. 5106-NFPA 72-2019 [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.

Submitter Information Verification

Committee: SIG-FUN
Submittal Date: Tue Jul 23 12:54:12 EDT 2019

Committee Statement

Committee Statement: Examples are added to provide clarity.
Response Message: FR-5106-NFPA 72-2019

Public Input No. 608-NFPA 72-2019 [New Section after A.7.8.2(1)]

Public Input No. 602-NFPA 72-2019 [New Section after A.7.8.2(1)]

First Revision No. 5130-NFPA 72-2019 [Section No. A.10.5.5.1(2)]

A.10.5.5.1(2)

An example of an organization providing alarm monitoring operator training is the ~~Central Station Alarm~~ The Monitoring Association (~~CSAA~~ TMA). Note that this reference is for information purposes only, information concerning the product or service has been provided by the manufacturer or other outside sources, and the information concerning the product or service has not been independently verified nor has the product or service been endorsed or certified by the NFPA or any of its technical committees.

Submitter Information Verification

Committee: SIG-FUN
Submittal Date: Tue Jul 23 17:11:08 EDT 2019

Committee Statement

Committee Statement: The Technical Committee updates the reference.
Response Message: FR-5130-NFPA 72-2019

Public Input No. 365-NFPA 72-2019 [Section No. A.10.5.5.1(2)]

First Revision No. 5176-NFPA 72-2019 [Section No. A.10.6.6]

A.10.6.6

Where a computer system of any kind is used to receive and process alarm or supervisory signals, an ~~ESS~~ EPSS/SEPSS or a UPS listed to the requirements of an applicable standard such as UL 864 with sufficient capacity to operate the system until the secondary supply is capable of operating the fire alarm system might be required in order to prevent signal loss or a greater than 10-second signal delay.

~~ESS~~ EPSS/SEPSS equipment often contains an internal bypass arrangement to supply the load directly from the line. These internal bypass arrangements are a potential source of failure. ~~ESS~~ EPSS/SEPSS equipment also requires periodic maintenance. It is, therefore, necessary to provide a means of promptly and safely bypassing and isolating the ~~ESS~~ EPSS/SEPSS equipment from all power sources while maintaining continuity of power supply to the equipment normally supplied by the ~~ESS~~ EPSS/SPESS .

Submitter Information Verification

Committee: SIG-FUN
Submittal Date: Wed Jul 24 13:05:01 EDT 2019

Committee Statement

Committee Statement: The Technical Committee edits the text to correlate with the current NFPA 111 terminology and clarifies that an UL 864 UPS is suitable for the purpose.

Response Message: FR-5176-NFPA 72-2019

Public Input No. 389-NFPA 72-2019 [Section No. A.10.6.6]

First Revision No. 5169-NFPA 72-2019 [Chapter E]

Annex E Sample 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 2019 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 2019 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 ~~may~~ 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~~ might 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.

Submitter Information Verification

Committee: SIG-FUN

Submittal Date: Wed Jul 24 11:51:14 EDT 2019

Committee Statement

Committee Statement: The Technical Committee updates the text per the Manual of Style.

Response Message: FR-5169-NFPA 72-2019

Public Input No. 367-NFPA 72-2019 [Section No. E.1]

First Revision No. 5136-NFPA 72-2019 [Section No. I.1.2]

I.1.2 Other Publications. [SEE ATTACHED FOR CHANGES]

I.1.2.1 ANSI Publications.

American National Standards Institute, Inc., 25 West 43rd Street, 4th Floor, New York, NY 10036.

ANSI S3.2, *Method for Measuring the Intelligibility of Speech Over Communications Systems*, 1989, revised 2009.

ANSI/ASA S3.41, *American National Standard Audible Emergency Evacuation (E2) and Evacuation Signals with Relocation Instructions (ESRI)*, 1990, reaffirmed 2015.

I.1.2.2 ASME Publications.

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

ASME A17.1-2016/CSA B44-16, *Safety Code for Elevators and Escalators*, 2016.

ASME A.17.2, *Guide for Inspection of Elevators, Escalators and Moving Walks*, 2014.

I.1.2.3 FEMA Publications.

Federal Emergency Management Agency, U.S. Department of Homeland Security, 500 C Street, SW, Washington, DC 20024.

FEMA Publication CPG-17, *Outdoor Warning Systems Guide*, March 1980.

I.1.2.4 FM Publications.

FM Global, 270 Central Avenue, P.O. Box 7500, Johnston, RI 02919.

FM 3210, *Heat Detectors for Automatic Fire Alarm Signaling*, 2007.

ANSI/FM 3260, *American National Standard for Energy-Sensing Fire Detectors for Automatic Fire Alarm Signaling,* 2014.

I.1.2.5 IEC Publications.

International Electrotechnical Commission, 3 rue de Varembé, P.O. Box 131, CH-1211 Geneva 20, Switzerland. IEC documents are available through ANSI.

IEC 60268, *Sound system equipment — Part 16: Objective rating of speech intelligibility by speech transmission index,* 2nd edition, 2011.

I.1.2.6 IEEE Standards Association Publications.

Institute of Electrical and Electronics Engineers, 3 Park Avenue, New York, NY 10016-5997.

IEEE Std TM 450, *Recommended Practice for Maintenance, Testing, and Replacement of Vented Lead-Acid Batteries for Stationary Applications*, 2010.

IEEE Std TM 485, *Recommended Practice for Sizing Lead-Acid Batteries for Stationary Applications*, 2010.

IEEE Std TM 1106, *Recommended Practice for Installation, Maintenance, Testing, and Replacement of Vented Nickel-Cadmium Batteries for Stationary Applications*, 2005.

IEEE Std TM 1188, *Recommended Practice for Maintenance, Testing, and Replacement of Valve-Regulated Lead-Acid (VRLA) Batteries for Stationary Applications*, 2005.

IEEE 802.3af, *Standard for Information Technology — Telecommunications and Information Exchange Between Systems — Local and Metropolitan Area Networks — Specific Requirements — Part 3*, 2003.

I.1.2.7 IES Publications.

Illuminating Engineering Society of North America, 120 Wall Street, 17th floor, New York, NY 10005.

Lighting Handbook Reference and Application, 2008.

I.1.2.8 ISO Publications.

International Organization for Standardization, ISO Central Secretariat, BIBC II, Chemin de Blandonnet 8, CP 401, 1214 Vernier, Geneva, Switzerland.

ISO/TR 4870, *Acoustics — The Construction and Calibration of Speech Intelligibility Tests*, 1991.

ISO 7240-19, *Fire Detection and Alarm Systems — Part 19: Design, Installation, Commissioning, and Service of Sound Systems for Emergency Purposes*, 2007.

ISO 8201, *Audible Emergency Evacuation Signal*, 2015.

ISO/IEC 14763-2, *Information technology — Implementation and operation of customer premises cabling — Part 2: Planning and installation*, 2012.

ISO/IEC 14763-3, *Informational technology — implementation and operation of customer premises cabling — Part 3: Testing of optical fibre cabling*, 2014.

I.1.2.9 NEMA Publications.

National Electrical Manufacturers Association, 1300 North 17th Street, Suite 900, Arlington, VA 22209.

ANSI/NEMA SB-40, *Communications Systems for Life Safety in Schools*, 2015.

NEMA SB-50, *Emergency Communications Audio Intelligibility Applications Guide*, 2014.

I.1.2.10 NIST Publications.

National Institute of Standards and Technology, 100 Bureau Drive, Gaithersburg, MD 20899-1070.

NIST 6055, *Electromagnetic Signal Attenuation in Construction Materials*, 1997.

NIST Technical Note 1779, *General Guidance on Emergency Communications Strategies for Buildings*, February 2013.

I.1.2.11 OASIS Publications.

Organization for the Advancement of Structured Information Standards (OASIS), 25 Corporate Drive, Suite 103, Burlington, MA 01803.

OASIS Standard CAP-V1.2, *OASIS Common Alerting Protocol*, Version 1.2.

I.1.2.12 SFPE Publications.

Society of Fire Protection Engineers, 9711 Washingtonian Blvd., Suite 380, Gaithersburg, MD 20878.

SFPE Engineering Guide: Evaluation of the Computer Fire Model DETACT QS, 2002.

SFPE Engineering Guide to Human Behavior in Fire, 2003.

SFPE Engineering Guide to Performance-Based Fire Protection, 2nd edition, 2007.

SFPE Handbook of Fire Protection Engineering, 5th edition, 2016.

Keating, John P. and Loftus, Elizabeth F., “People Care in Fire Emergencies — Psychological Aspects, 1975,” SFPE, 1975.

I.1.2.13 TIA Publications.

Telecommunications Industry Association, 1320 North Courthouse Road, Suite 200, Arlington, VA 22201.

ANSI/TIA-569-D, *Telecommunications Pathways and Spaces*, April 2015.

TIA-526, *Standard Test Procedures for Fiber Optic Systems*, September 1992.

I.1.2.14 UL Publications.

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

ANSI/UL 268, *Standard for Smoke Detectors for Fire Alarm Systems,* 6th edition, 2009.

ANSI/UL 268A, *Standard for Smoke Detectors for Duct Application*, 4th edition, 2008, revised 2016.

ANSI/UL 827, *Standard for Central-Station Alarm Services*, 2014.

ANSI/UL 864, *Standard for Control Units and Accessories for Fire Alarm Systems*, 9th edition, 2003, revised 2012.

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ANSI/UL 1971, *Standard for Signaling Devices for the Hearing Impaired,* 3rd edition, 2002, revised 2013.

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The following documents or portions thereof are listed here as informational resources only. They are not a part of the requirements of this document.

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