Agenda
Technical Committee on
Single- and Multiple-Station Alarms and Household Signaling Systems (SIG-HOU)
First Draft Meeting
Indianapolis, IN
July 22 - 24, 2019

Item 19-7-1 Call to Order

Item 19-7-2 Roll Call and Introductions

Item 19-7-3 Approval of Meeting Agenda

Item 19-7-4 Approval of Meeting Minutes

Item 19-7-5 Staff/Chair Remarks

Item 19-7-6 Task Group Reports

Item 19-7-7 Public Inputs and First Revisions

Item 19-7-8 Old Business

Item 19-7-9 New Business

Item 19-7-10 Review Dates and Times for Future Meetings/Conference Calls

Item 19-7-11 Adjournment and Closing Remarks

Address List No Phone

07/08/2019
Richard J. Roux

Single- and Multiple-Station Alarms and Household Signaling — SIG-HOU

Signaling Systems for the Protection of Life and Property

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TC on Residential Sprinkler Systems

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MINUTES

TECHNICAL COMMITTEE ON

SINGLE- AND MULTIPLE-STATION ALARMS AND HOUSEHOLD FIRE ALARM SYSTEMS

NFPA Second Draft Meeting (A2018)

July 17 - 19, 2017, Renaissance Charlotte Suites Hotel, 2800 Coliseum Centre Dr., Charlotte, NC 28217

17-7-1 Call to order

- The first day of the Second Draft Meeting (A2018) was called to order by Technical Committee (TC) Chairman L.J. Dallaire at 8:00 am EST on Monday, July 17, 2017. Chairman Dallaire recessed the meeting for the day at 5:00 pm EST.
- The second day of the Second Draft Meeting was reconvened at 8:00 am EST on Tuesday, July 18, 2017, by TC Chairman Dallaire. The meeting was recessed at 6:05 pm EST.
- The third day of the Second Draft Meeting was reconvened at 8:00 am EST on Wednesday, July 19, 2017, by TC Chairman Dallaire. The meeting was adjourned at 11:25 am EST.

17-7-2 Roll Call and Introductions

- Members were requested to confirm their attendance/contact information on the official committee attendance roster. No guests were present on the opening day, however guests as noted below attended on the second day.
- In addition to the Chair, the following TC members and guests were present:

1	Edward Fraczkowski (Principal)	EBL Engineers, LLC
2	David Christian (Principal)	Automatic Fire Alarm Association, Inc.
3	Timothy Dedear (Principal)	City of Farmers Branch Fire Department
4	Wendy Gifford (Principal)	Consultant
5	Greg L. Hansen (Principal)	Vivint Inc.
6	Andrew Marks (Principal)	National Electrical Manufacturers Assoc.
7	Jeffrey Okun (Principal)	Nuko Security, Inc.
8	Stephen Olenick (Principal)	Combustion Science & Engineering, Inc.
9	Timothy A. Rader (Principal)	ADT Security Services, Inc.
10	Larry Ratzlaff (Principal)	UTC/Kidde Safety
11	Richard Simpson (Principal)	The Monitoring Association
12	Oded Aron (Alt. to A. Kryagin)	Port Authority of NY & NJ
13	Rick Heffernan (Alt. to A. Marks)	National Electrical Manufacturers Assoc.
14	Matthew Jakusz (Alt. to T. Rader)	ADT Security Services
15	John L. Parssinen (Alt. to D. Mills)	UL LLC
16	Richard J. Roberts (Alt. to D. Christian)	Automatic Fire Alarm Association, Inc.
17	Jason A. Sutula (Alt. to D. Gottuk)	JENSEN HUGHES
18	Arthur S. Lee (Nonvoting Member)	US Consumer Product Safety Commission
19	Richard J. Roux	NFPA Staff Liaison
20	Chelsea Rubadou	NFPA Staff Liaison
21	Shawn Mahoney	NFPA Staff Liaison

	GUESTS:	
22	Doug Bassett	Comcast
23	George Bish	Ring
24	Larry Shudak	UL LLC

17-7-3 Approval of Meeting Agenda

- Chairman Dallaire recognized Ed Fraczkowski who made a motion to editorial change to correct Item 17-7-6 TC for Annex H *(PI 413)* to *(PC 413)*.
- Chairman Dallaire recognized Jeff Okun who made a motion to accept the agenda as distributed with the noted change. Acceptance was unanimous.

17-7-4 Approval of the Meeting Minutes

- Chairman Dallaire recognized David Christian who made a motion to accept the July 25-27, 2016, meeting minutes. Acceptance was unanimous.

17-7-5 Staff/Chair Remarks

- Staff liaison Chelsea Rubadou reviewed the NFPA Technical Committee policies and procedures for the Second Draft Meeting.

17-7-6 TC for Annex H (PC 413)

- Chairman Dallaire indicated this item would be addressed through the TC processing of the Public Comments addressed under agenda item 17-7-8.

17-7-7 Task Group (TG) Reports (A2018)

- Chairman Dallaire assigned four tasks groups prior to the TC meeting in Charlotte to address the Public Comments. Work from each of the Task Groups was presented under agenda item 17-7-8 and the Task Groups were retired with thanks.

17-7-8 Public Comments and Second Revisions

- The TC processed two second revisions pertaining to the correction of the T4 drawing referenced in A.29.4.3, and extension of the effective date in 29.10.3.4.
- The following Public Comments (PC) were addressed by the TC:

1	Public Comment No. 4-NFPA 72-2017	New Section after 29.7.1.2
2	Public Comment No. 33-NFPA 72-2017	Section No. 29.10.1.3
3	Public Comment No. 34-NFPA 72-2017	Section No. 29.10.1.4
4	Public Comment No. 35-NFPA 72-2017	Section No. 29.10.2.1
5	Public Comment No. 36-NFPA 72-2017	Section No. 29.10.6
6	Public Comment No. 37-NFPA 72-2017	Section No. 29.12
7	Public Comment No. 38-NFPA 72-2017	Section No. A.29.10.2.1
8	Public Comment No. 51-NFPA 72-2017	Section No. 29.8.3
9	Public Comment No. 61-NFPA 72-2017	Section No. A.29.6

10	Public Comment No. 62-NFPA 72-2017	Section No. 29.8.2
11	Public Comment No. 66-NFPA 72-2017	Section No. 29.13.2
12	Public Comment No. 67-NFPA 72-2017	Section No. 29.1.1
13	Public Comment No. 68-NFPA 72-2017	Section No. 29.1.2
14	Public Comment No. 69-NFPA 72-2017	Section No. 29.8.1
15	Public Comment No. 70-NFPA 72-2017	Section No. 29.8.2
16	Public Comment No. 71-NFPA 72-2017	Section No. 29.4.3
17	Public Comment No. 72-NFPA 72-2017	Section No. 29.9.7.5
18	Public Comment No. 73-NFPA 72-2017	Section No. 29.9.7.1
19	Public Comment No. 74-NFPA 72-2017	Section No. 29.12
20	Public Comment No. 78-NFPA 72-2017	Section No. 29.13.3
21	Public Comment No. 79-NFPA 72-2017	Section No. 29.1.3
22	Public Comment No. 101-NFPA 72-2017	Chapter 29 [Title Only]
23	Public Comment No. 121-NFPA 72-2017	Section No. 29.9.9
24	Public Comment No. 125-NFPA 72-2017	Section No. 29.8.5
25	Public Comment No. 129-NFPA 72-2017	Section No. 29.10.1.4
26	Public Comment No. 142-NFPA 72-2017	Section No. 29.8.3
27	Public Comment No. 143-NFPA 72-2017	Section No. 29.9.6
28	Public Comment No. 153-NFPA 72-2017	Section No. 29.9.6.5
29	Public Comment No. 157-NFPA 72-2017	Section No. 29.1.1
30	Public Comment No. 158-NFPA 72-2017	Section No. 29.1.2
31	Public Comment No. 159-NFPA 72-2017	Section No. 29.2.1
32	Public Comment No. 160-NFPA 72-2017	Section No. 29.3.2
33	Public Comment No. 161-NFPA 72-2017	Section No. 29.3.3
34	Public Comment No. 162-NFPA 72-2017	Section No. 29.4.1
35	Public Comment No. 164-NFPA 72-2017	Section No. 29.5.1
36	Public Comment No. 165-NFPA 72-2017	Section No. 29.5.2.2
37	Public Comment No. 166-NFPA 72-2017	Section No. 29.5.3
38	Public Comment No. 208-NFPA 72-2017	Global Input
39	Public Comment No. 274-NFPA 72-2017	Section No. 14.1.2
40	Public Comment No. 275-NFPA 72-2017	New Section after 14.4.8.1.1
41	Public Comment No. 276-NFPA 72-2017	Section No. 29.8.2
42	Public Comment No. 354-NFPA 72-2017	Section No. 29.7.1.3.1
43	Public Comment No. 355-NFPA 72-2017	Section No. 29.6.2
44	Public Comment No. 356-NFPA 72-2017	Section No. 29.9.8.2.1
45	Public Comment No. 362-NFPA 72-2017	Section No. 29.10.6
46	Public Comment No. 413-NFPA 72-2017	Chapter H
47	Public Comment No. 434-NFPA 72-2017	Section No. 29.8.3
48	Public Comment No. 439-NFPA 72-2017	Section No. 29.10.2.1
49	Public Comment No. 440-NFPA 72-2017	Section No. 29.9.7.2
50	Public Comment No. 444-NFPA 72-2017	Section No. 29.8.3
51	Public Comment No. 451-NFPA 72-2017	Section No. 29.8.3
52	Public Comment No. 453-NFPA 72-2017	Section No. 29.9.7.7.1
53	Public Comment No. 461-NFPA 72-2017	Section No. 29.10.2.1
54	Public Comment No. 464-NFPA 72-2017	Section No. 14.4.3.5.1 (TC action was to forward this to the SIG-TMS TC)
55	Public Comment No. 466-NFPA 72-2017	Section No. 14.4.8.1.1
56	Public Comment No. 489-NFPA 72-2017	Section No. 29.4.9 [Excluding any Sub-Sections]

57	Public Comment No. 495-NFPA 72-2017	Section No. A.29.2.2
58	Public Comment No. 497-NFPA 72-2017	Section No. A.29.9.8.2.1
59	Public Comment No. 498-NFPA 72-2017	Section No. A.29.10.3.4(9)
60	Public Comment No. 505-NFPA 72-2017	Section No. 29.8.5
61	Public Comment No. 507-NFPA 72-2017	New Section after 29.9.3.5
62	Public Comment No. 508-NFPA 72-2017	Section No. 29.8.3
63	Public Comment No. 510-NFPA 72-2017	New Section after 29.3.4
64	Public Comment No. 515-NFPA 72-2017	Section No. 14.4.5.3
65	Public Comment No. 516-NFPA 72-2017	New Section after 14.4.6.1
66	Public Comment No. 531-NFPA 72-2017	Global Input
67	Public Comment No. 534-NFPA 72-2017	Sections 29.4.1,Â 29.4.2
68	Public Comment No. 537-NFPA 72-2017	Section No. 29.7.2.1.1
69	Public Comment No. 539-NFPA 72-2017	Section No. 29.13.3

17-7-9 Discussion of Potential TIA for NFPA 72-2016, 29.8.3.4(5)

1. The TC developed a draft TIA to amend NFPA 72-2016, 29.7.3 and 29.8.3.4(5) by extending the date referenced in the paragraphs to January 1, 2022. To properly submit the TIA, at least one member should submit in writing to the NFPA requesting processing with an attached proposed TIA. In addition, a minimum of two additional TC members must respond in writing to the NFPA that they concur with and support the proposed TIA.

17-7-10 Old Business

- The five TG's previously formed during the present cycle were retired with thanks. Those TG's retired included the following: TG 16-7-7: TG on Non-Wired Network Communications, TG 16-6-6: TG to Review the 30-Day Test Signal Protocol, TG 18-7-1: TG to Review Chapter 14 Testing Table/NFPA 720 Table, TG 18-7-2: TG to Review CO Spacing & Audibility with respect to 29.5.1.1 (2) …within 21-ft, and TG 18-7-3: TG to Conduct Editorial/Technical Review of the TC's FDM Chapter 29 Revisions.

17-7-11 New Business

1. Chairman Dallaire assigned two new Task Groups during the Charlotte meeting. The Task Groups are as follows:
   a. **TG 17-7-1: TG on High Ceiling Smoke Alarm Placement**, Chair Steve Olenick, L.J. Dallaire, John Parssinen, and Jeff Okun. This TG was developed from PC No. 4-NFPA 72-2017 [New Section after 29.7.1.2] regarding smoke alarm placement when high ceiling spaces exist adjacent to and common with the hallway outside a bedroom. The TG is to coordinate their work with the Fire Protection Research Foundation (FPRF) and their on-going research on smoke alarm placement. The TG effort would start after the 2019 Edition is published and the TG would prepare relevant PI's based on their work.
   b. **TG 17-7-2: TG on NFPA 72-2019, Chapter 29 'Cold Read'**, Chair Matthew Jakusz, Greg Hansen, and Ed Fraczkowski. This TG was formed due to the extensive

editorial changes and NFPA 720 document merger into Chapter 29 during the current code cycle. The Chairman felt the extensive changes made warranted a thorough review of Chapter 29, the associated annexes, and applicable references to other chapters. The TG effort would start after the 2019 edition is published and the TG would prepare relevant PI's based on their work.

17-7-12 Review Dates and Times for Future Meetings / Conference Calls

- TC conference calls to be scheduled at the Chairman's discretion. No other future meetings or conference calls have been scheduled.

17-7-13 Adjournment and Closing Remarks

- Chairman Dallaire thanked all committee members for their effort during this code cycle, and also thanked our new NFPA staff liaison for doing a terrific job working with the TC at this meeting.
- Chairman Dallaire adjourned the meeting at 11:25 am EST on Wednesday, July 19, 2017.

Minutes prepared by Ed Fraczkowski.

Minutes approved on _____ .

Public Input No. 394-NFPA 72-2019 [Global Input]

Current document title: "NFPA 72 National Fire Alarm and Signaling Code"

Suggested revision: "NFPA 72 National Fire Alarm and Signaling Code, and Standard for the Installation of Carbon Monoxide (CO) Detection and Warning Equipment"

Statement of Problem and Substantiation for Public Input

The content of NFPA 720 was incorporated into the 2019 edition of NFPA 72, but the title of NFPA 72 was not revised to reflect this content change. Revising the title will more accurately reflect the content of NFPA 72, maintain the designation of the CO content as a Standard, and will aid users in finding the relocated CO detection/warning equipment requirements.

Submitter Information Verification

Submitter Full Name: Kris Hauschildt
Organization: Jenkins Foundation
Street Address:
City:
State:
Zip:
Submittal Date: Sun Jun 23 16:06:01 EDT 2019
Committee: SIG-FUN

Public Input No. 466-NFPA 72-2019 [Section No. 3.3.63]

3.3.63 Control Unit.

A system component that monitors inputs and controls outputs through various types of circuits. (SIG-PRO)

3.3.63.1* Autonomous Control Unit (ACU).

The primary control unit for an in-building mass notification system. (SIG-ECS)

3.3.63.2 Combination System Control Unit (CSCU)

The control unit for a system that includes fire and non-fire detection and notification.

3.3.63.2 Emergency Communications Control Unit (ECCU).

A system capable of sending mass notification messages to individual buildings, zones of buildings, individual outdoor loudspeaker arrays, or zones of outdoor loudspeaker arrays; or a building, multiple buildings, outside areas, or a combination of these. (SIG-ECS)

3.3.63.3 Fire Alarm Control Unit (FACU).

See 3.3.108, Fire Alarm Control Unit (FACU).

3.3.63.4 Wireless Control Unit.

A component that transmits/receives and processes wireless signals. (SIG-PRO)

Statement of Problem and Substantiation for Public Input

While the term "combination control unit" is used in 23.8.4.9.4, it is nowhere defined. In addition, Chapter 29 has used "Control Unit" to refer to a Fire Alarm Control Unit that also operates a carbon monoxide or security function. Per the definitions in this section, that is an imprecise and confusion term. For clarity, proposals will be submitted to change the language in Chapter 29 to "Combination System Control Unit."

Submitter Information Verification

Submitter Full Name: Wendy Gifford
Organization: Consultant
Street Address:
City:
State:
Zip:
Submittal Date: Mon Jun 24 16:53:01 EDT 2019
Committee: SIG-HOU

Public Input No. 20-NFPA 72-2018 [Section No. 3.3.258]

3.3.258* Separate Sleeping Area.

The area of a dwelling unit where the bedrooms or sleeping rooms are located and where the bedrooms or sleeping rooms are not separated by other use areas, such as kitchens or living rooms (but not bathrooms) . (SIG-HOU)

Statement of Problem and Substantiation for Public Input

The existing definition is for a Sleeping Area, not for a Separate Sleeping Area. The intent of having the word SEPARATE was lost when the committee edited the definition to be a single sentence. The change was made in the transition from 2002 to 2007 when the SIG-HOU TC changed the definition to an extract from NFPA 720. Moving the qualifier of what defines SEPARATE to the annex loses the enforceablity. This change reinstates the enforceability for adding smoke alarms for separate sleeping areas. The existing annex text can remain unchanged.

Submitter Information Verification

Submitter Full Name: Robert Schifiliti
Organization: R. P. Schifiliti Associates, I
Street Address:
City:
State:
Zip:
Submittal Date: Thu Nov 01 11:48:09 EDT 2018
Committee: SIG-HOU

Public Input No. 538-NFPA 72-2019 [Section No. 3.3.270]

3.3.270 Single-Station Alarm Device.

An assembly that incorporates the detector ~~, the control equipment,~~ and the alarm-sounding device in one unit operated from a power supply either in the unit or obtained at the point of installation. (SIG-HOU)

Statement of Problem and Substantiation for Public Input

The term "control equipment" is not applicable and should be deleted.

Submitter Information Verification

Submitter Full Name: Frank Savino
Organization: United Fire Protection Corpora
Affiliation: Task Group SIG-PRO
Street Address:
City:
State:
Zip:
Submittal Date: Wed Jun 26 10:03:00 EDT 2019
Committee: SIG-HOU

Public Input No. 143-NFPA 72-2019 [Section No. 7.8.2]

7.8.2 Forms for Documentation.

Forms for documentation 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. (SIG-FUN)

(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. (SIG-TMS)

(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) ~~can~~ shall be permitted to be used to document the record of completion and inspection.

Figure 7.8.2(a) System Record of Completion. (SIG-FUN)

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 Media 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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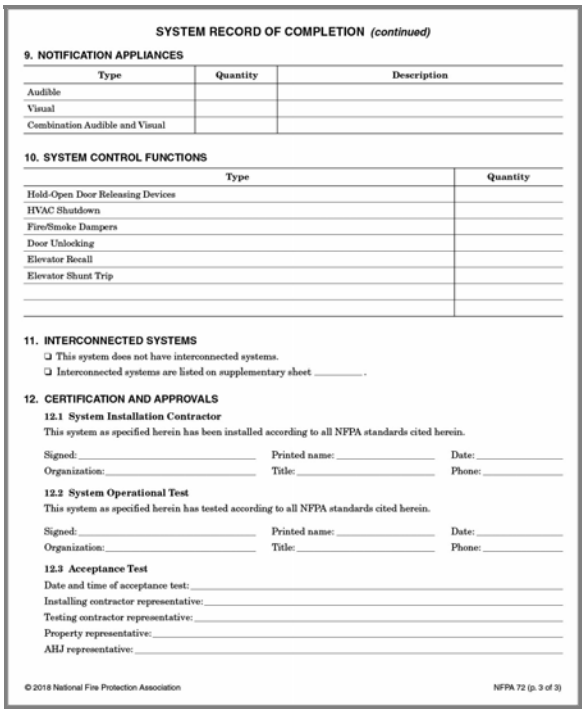

SYSTEM RECORD OF COMPLETION *(continued)*

9. NOTIFICATION APPLIANCES

Type	Quantity	Description
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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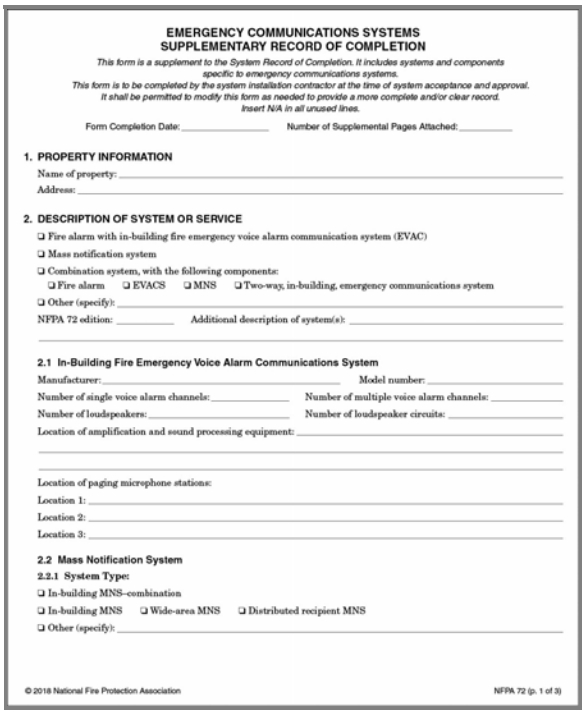
Figure 7.8.2(b) Emergency Communications System Supplementary Record of Completion. (SIG-FUN)



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: _____ 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 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: _____ 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: _____

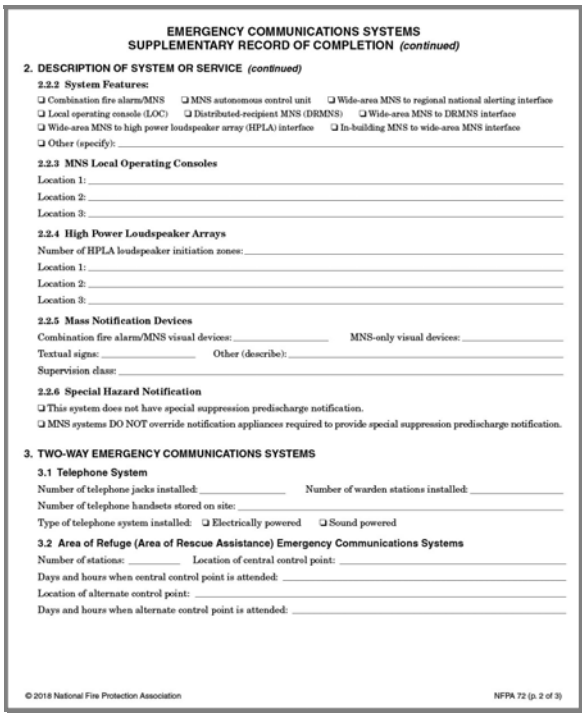
Location of paging microphone stations:
Location 1: _____
Location 2: _____
Location 3: _____

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): _____

 NFPA 72 (p. 1 of 3)



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: _____
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 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: _____ 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 (Area of Rescue Assistance) 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. (SIG-FUN)

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: _____ 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 Energy Storage Systems

Equipment powered by ESS system: _____

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: _____ Type: _____ Nominal voltage: _____ Amp/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: _____

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 Energy Storage Systems

Equipment powered by ESS system: _____

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): _____

2.2.4 Batteries

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

Calculated capacity of batteries to drive the system:

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

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 Energy Storage Systems

Equipment powered by ESS system: _____

Location of ESS system: _____

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

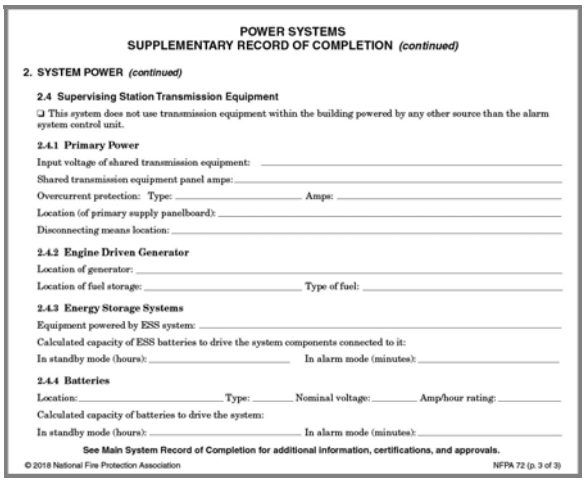
In standby mode (hours): _____ In alarm mode (minutes): _____

2.3.4 Batteries

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

Calculated capacity of batteries to drive the system:

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



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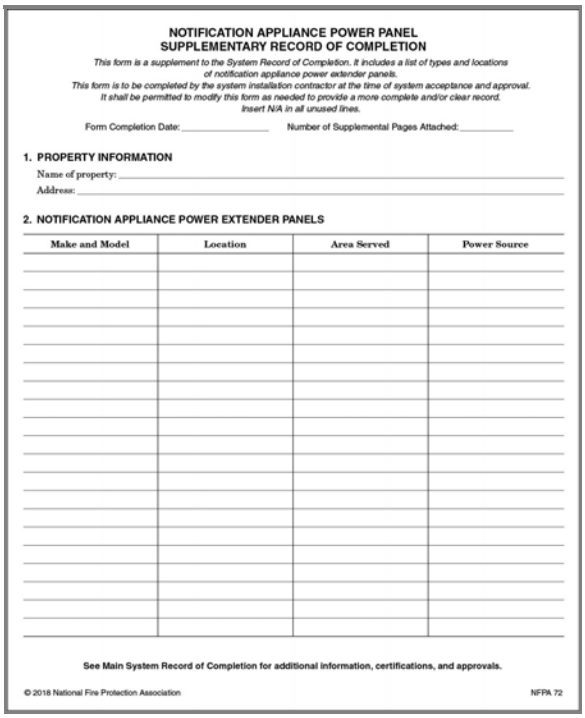
Figure 7.8.2(d) Notification Appliance Power Panel Supplementary Record of Completion. (SIG-FUN)



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: _____

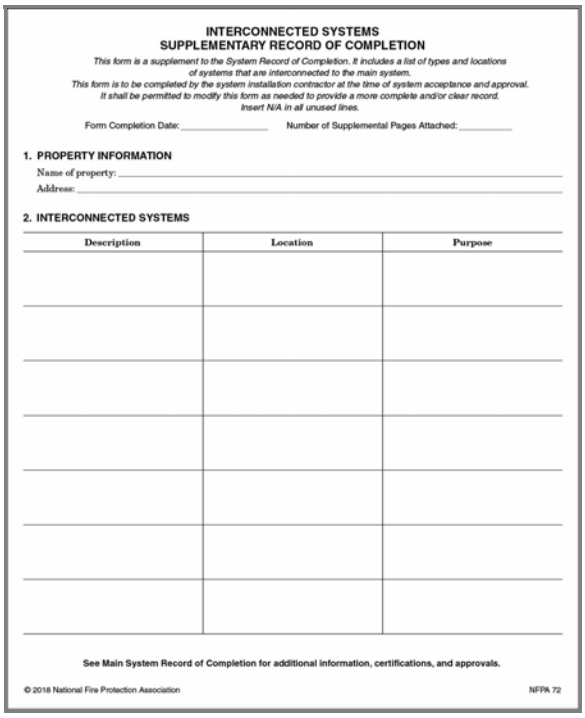
2. NOTIFICATION APPLIANCE POWER EXTENDER PANELS

Make and Model	Location	Area Served	Power Source

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

 NFPA 72

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



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: _____ Number of Supplemental Pages Attached: _____

1. PROPERTY INFORMATION

Name of property: _____
Address: _____

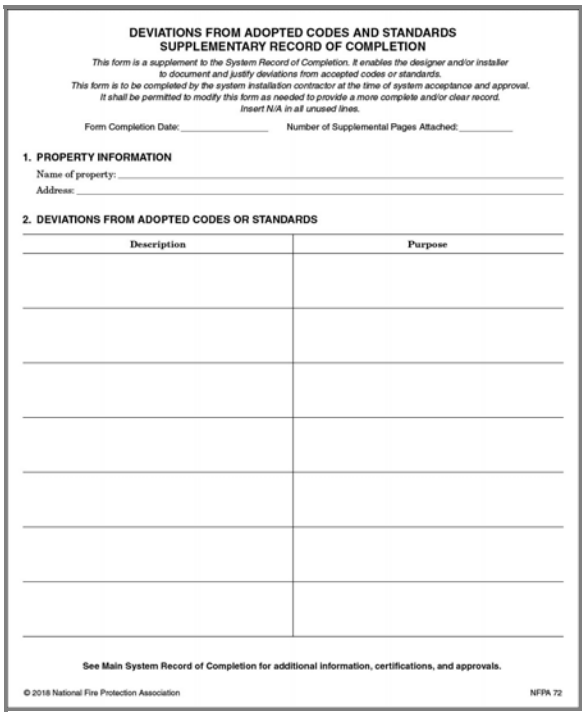
2. INTERCONNECTED SYSTEMS

Description	Location	Purpose

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

 NFPA 72

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



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.

 NFPA 72

Figure 7.8.2(g) System Record of Inspection and Testing. (SIG-TMS)

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: _____

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: _____

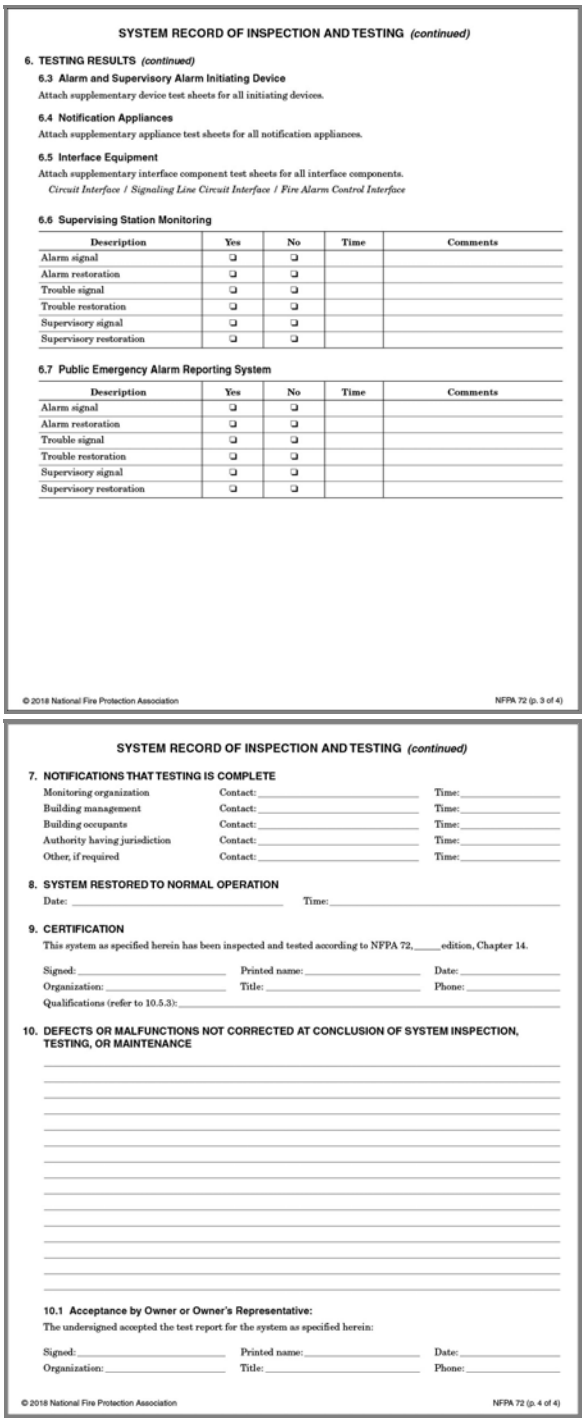
6. TESTING RESULTS

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	❑	❑	



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 10.5.3):_____

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 7.8.2(h) Notification Appliance Supplementary Record of Inspection and Testing. (SIG-TMS)

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

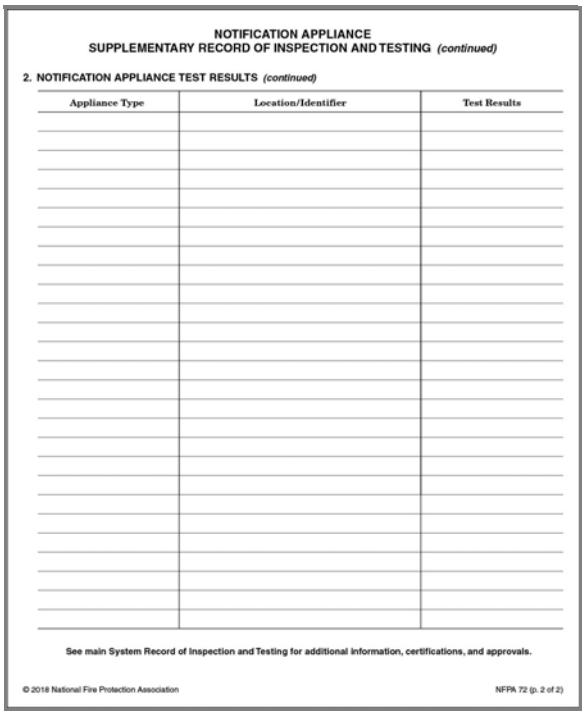
Name of property: _____

Address: _____

2. NOTIFICATION APPLIANCE TEST RESULTS

Appliance Type	Location/Identifier	Test Results

 NFPA 72 (p. 1 of 2)



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

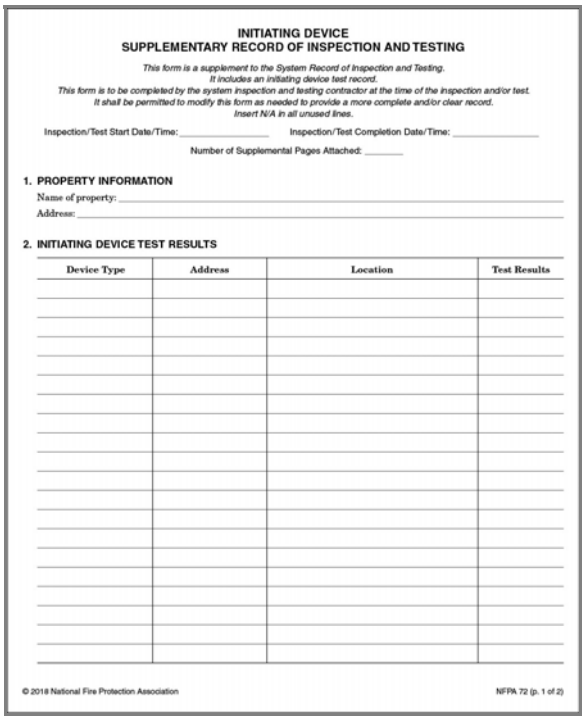
2. NOTIFICATION APPLIANCE TEST RESULTS *(continued)*

Appliance Type	Location/Identifier	Test Results

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

 NFPA 72 (p. 2 of 2)

Figure 7.8.2(i) Initiating Device Supplementary Record of Inspection and Testing. (SIG-TMS)



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

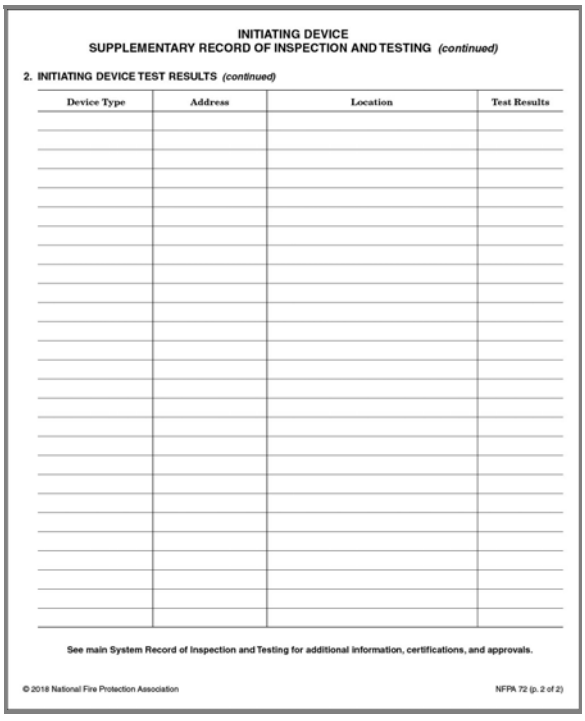
Name of property: _____

Address: _____

2. INITIATING DEVICE TEST RESULTS

Device Type	Address	Location	Test Results

 NFPA 72 (p. 1 of 2)



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.

 NFPA 72 (p. 2 of 2)

Figure 7.8.2(j) Mass Notification System Supplementary Record of Inspection and Testing. (SIG-TMS)

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 Energy Storage Systems ❑ This system does not have an ESS.

Equipment powered by an ESS system: _____

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): _____

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.

 NFPA 72 (p. 1 of 2)

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			
ESS 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.

 NFPA 72 (p. 2 of 2)

Figure 7.8.2(k) Emergency Communications Systems Supplementary Record of Inspection and Testing. (SIG-TMS)

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 communication system (EVAC)

❑ Mass notification system

❑ Combination system, with the following components:
❑ Fire alarm ❑ EVACS ❑ MNS ❑ Two-way, in-building, emergency communication system

❑ Other (specify):_____

Additional description of system(s):_____

_____

2.1 In-Building Fire Emergency Voice Alarm Communication 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):_____

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 (Area of Rescue Assistance) 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:_____

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 Communication 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	❑	❑	

EMERGENCY COMMUNICATIONS SYSTEMS
SUPPLEMENTARY RECORD OF INSPECTION AND TESTING *(continued)*

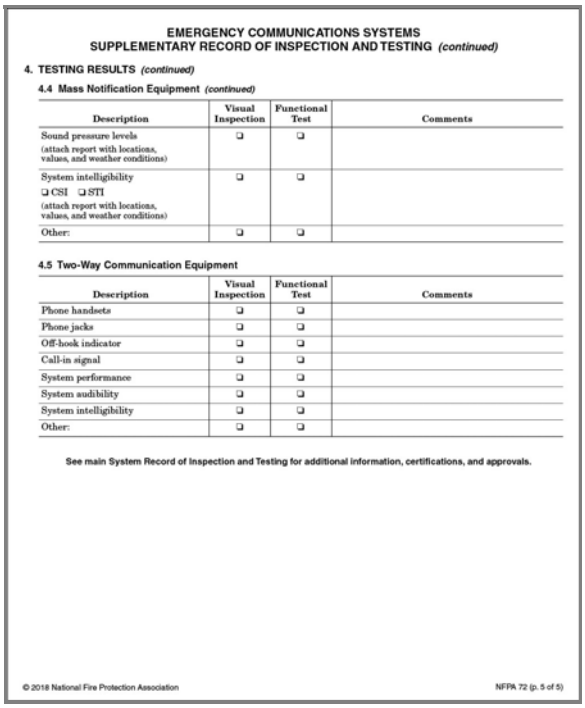
4. TESTING RESULTS *(continued)*

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	❑	❑	
ESS 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	❑	❑	



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:	❑	❑	

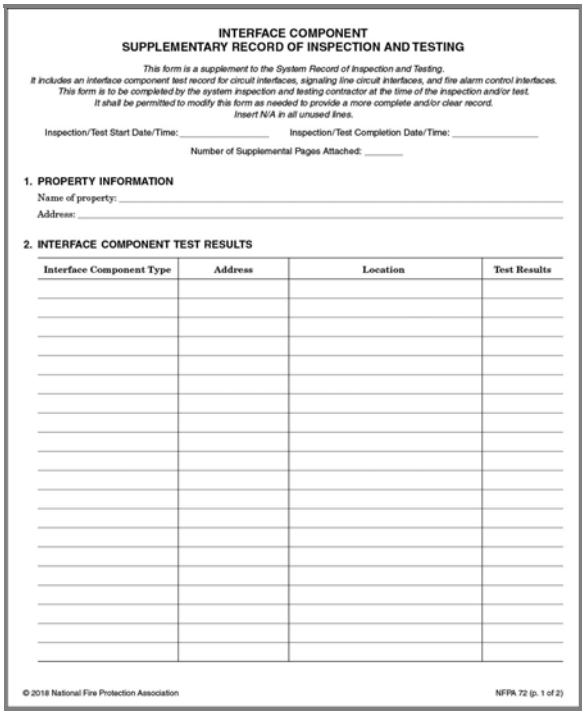
4.5 Two-Way Communication Equipment

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.

 NFPA 72 (p. 5 of 5)

Figure 7.8.2(I) Interface Component Supplementary Record of Inspection and Testing. (SIG-TMS)



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

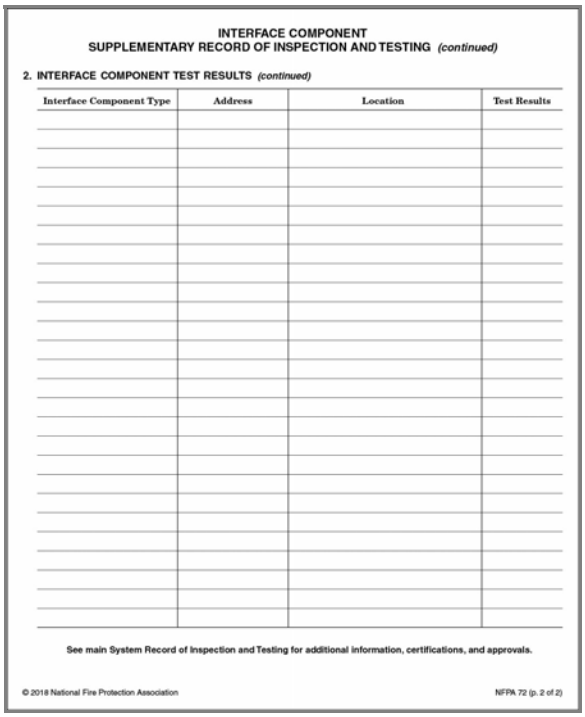
Name of property: _____

Address: _____

2. INTERFACE COMPONENT TEST RESULTS

Interface Component Type	Address	Location	Test Results

 NFPA 72 (p. 1 of 2)



INTERFACE COMPONENT
SUPPLEMENTARY RECORD OF INSPECTION AND TESTING *(continued)*

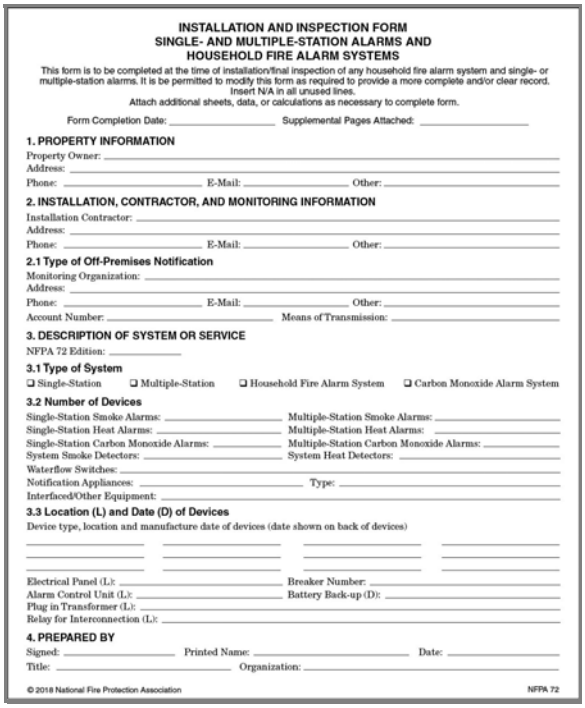
2. INTERFACE COMPONENT TEST RESULTS *(continued)*

Interface Component Type	Address	Location	Test Results

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

 NFPA 72 (p. 2 of 2)

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 is 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: _____

 NFPA 72

Statement of Problem and Substantiation for Public Input

Revision conforms to MOS

Submitter Information Verification

Submitter Full Name: Manuelita David
Organization: JENSEN HUGHES
Street Address:

City:
State:
Zip:
Submittal Date: Mon May 06 11:28:46 EDT 2019
Committee: SIG-HOU

Public Input No. 314-NFPA 72-2019 [Section No. 29.3.1]

29.3.1

All devices, combinations of devices, and equipment to be installed in conformity with this chapter shall be approved, certified, or listed for the purposes for which they are intended.

Additional Proposed Changes

File Name	Description	Approved
UL_certified_logo.jpg	UL certified logo	

Statement of Problem and Substantiation for Public Input

Some of the new 8th edition smoke alarms (meeting the new Polyurethane fire and nuisance requirements) have reached the market and are being refused by some of the AHJ's. They are used to seeing and are looking for the term "listed" on the labeling or packaging. UL has assigned new marking for the 8th edition of alarms for both the product label and the packaging which no longer use the word "listed" and instead use the term "Certified"
The current reference in NFPA states the product "shall be approved or listed". Adding the work "Certified" would provide some backing to those who state the product must state "listed".

Submitter Information Verification

Submitter Full Name: Larry Ratzlaff
Organization: UTC/Kidde Safety
Street Address:
City:
State:
Zip:
Submittal Date: Thu Jun 20 10:23:00 EDT 2019
Committee: SIG-HOU

UL®
CERTIFIED

SAFETY
SIGNALING
US
SAMPLE3

UL
CERTIFIED

HELPS REDUCE COOKING
NUISANCE ALARMS

Public Input No. 297-NFPA 72-2019 [New Section after 29.3.3]

TITLE OF NEW CONTENT

The installation of a single smoke, heat, fire or cabon monoxide (CO alarms or systems, or combinations of these shall be permitted in existing construction.

Statement of Problem and Substantiation for Public Input

Many earlier constructed homes do not have any smoke detection devices. Adding even a single detection device to these residences will provide a modicum of safety for those residing in a residence. Requiring a complete system as listed in 29.3.3 may be in some cases cost prohibitive for a consumer. Allowing added devices can provide some necessary early warning rather than none at all.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 296-NFPA 72-2019 [Section No. 29.3.3]	
Public Input No. 298-NFPA 72-2019 [Section No. 29.8.1.1]	
Public Input No. 296-NFPA 72-2019 [Section No. 29.3.3]	
Public Input No. 298-NFPA 72-2019 [Section No. 29.8.1.1]	

Submitter Information Verification

Submitter Full Name: Roy Pollack
Organization: Comcast Xfinity Home
Affiliation: None
Street Address:
City:
State:
Zip:
Submittal Date: Sun Jun 16 12:44:46 EDT 2019
Committee: SIG-HOU

Public Input No. 296-NFPA 72-2019 [Section No. 29.3.3]

29.3.3*

The installation of smoke, heat, fire, or carbon monoxide (CO) alarms or systems, or combinations of these, in new construction, shall comply with the requirements of this chapter and shall satisfy the minimum requirements for number and location of alarms or detectors by one of the following arrangements:

(1) 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.

(2) 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.

Statement of Problem and Substantiation for Public Input

The current text does not identify the requirements for new or existing construction. It is quite evident, from practice, that many homes have no smoke alarms or detectors. Smoke detectors installed as a part of a security system (even 1 single one) provides detection coverage that would not otherwise exist. Fire departments routinely provide (usually at no charge) smoke alarms at no charge, whereby even 1 smoke alarm provides some notification to a potential fire or smoke condition. Some detection is better than nothing.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 297-NFPA 72-2019 [New Section after 29.3.3]	
Public Input No. 298-NFPA 72-2019 [Section No. 29.8.1.1]	
Public Input No. 297-NFPA 72-2019 [New Section after 29.3.3]	
Public Input No. 298-NFPA 72-2019 [Section No. 29.8.1.1]	

Submitter Information Verification

Submitter Full Name: Roy Pollack
Organization: Comcast Xfinity Home
Affiliation: None
Street Address:
City:
State:
Zip:
Submittal Date: Sun Jun 16 12:37:24 EDT 2019
Committee: SIG-HOU

Public Input No. 284-NFPA 72-2019 [Section No. 29.5]

29.5 Notification.

29.5.1*

Unless otherwise permitted by 29.5.2 3 , fire-warning equipment to be installed in residential occupancies shall produce the audible emergency evacuation signal described in ANSI/ASA S3.41, *American National Standard Audible Emergency Evacuation (E2) and Evacuation Signals with Relocation Instructions (ESRI)*, whenever the intended response is to evacuate the building.

29.5.2 _

The audible emergency evacuation signal shall be permitted to be used for other devices as long as the desired response is immediate evacuation.

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 emergency evacuation signal described in ANSI/ASA S3.41, *American National Standard Audible Emergency Evacuation (E2) and Evacuation Signals with Relocation Instructions (ESRI)* .

29.5.

~~3~~

4 ***** _

~~**29.5.3.1** –~~

Carbon

~~monoxide alarms shall have a minimum rating of 85 dBA at 10 ft (3 m).~~

~~**29.5.3.2** –~~

~~Carbon~~

monoxide–warning equipment to be installed in residential occupancies shall produce the T-4 signal. After the initial 4 minutes of alarm, the 5-second "off" time of the alarm signal shall be permitted to be changed to 60 seconds ± 10 percent.

29.5.

~~4 –~~

~~The audible emergency evacuation signal shall be permitted to be used for other devices as long as the desired response is immediate evacuation.~~

~~29.~~

5

~~.5~~

***** –

Fire-warning equipment producing the 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 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 audible emergency evacuation signal.

(4) 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.

29.5.6 * _

Carbon monoxide–warning equipment producing the audible notification 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 audible notification signal

(2) Where the voice message complies with 29.5.6(2)(a) and 29.5.6(2)(b) as follows:

(3) The voice message is first preceded by a minimum of 6 cycles of the audible notification signal.

(4) 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.

29.5.7 _

All audible notification signals installed shall meet the performance requirements of 18.4.4 , 18.4.6.1 , 18.4.6.2 , and 29.5.10 .

29.5.8 * _

Where visual appliances are provided, they shall meet the requirements of Section 18.5 .

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 29.5.10.1 and 29.5.10.2 , as applicable.

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 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.

29.5.10.2 * _ Moderately Severe to Profound Hearing Loss.

Visual notification appliances in accordance with the requirements of 18.5.5.8 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

29.5.11 _

Signals from notification appliances shall not be required to be synchronized.

Statement of Problem and Substantiation for Public Input

Committee task group recommendation based on correlating committee comment. The structure of 29.5 did not seem optimal and or organized and was rearranged for improved flow and grouping of similar requirements.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 289-NFPA 72-2019 [Section No. A.29.5.3]	

Submitter Information Verification

Submitter Full Name: Cory Ogle
Organization: Code Consultants, Inc.
Street Address:
City:
State:
Zip:
Submittal Date: Thu Jun 13 12:56:48 EDT 2019
Committee: SIG-HOU

Public Input No. 201-NFPA 72-2019 [New Section after 29.5.3]

TITLE OF NEW CONTENT

The audible signal of carbon monoxide alarms and systems installed to meet the requirements of this chapter shall not be required to be synchronized.

Statement of Problem and Substantiation for Public Input

This language was added to Chapter 18 (18.4.3.4) in the second draft of the last cycle. Since this is specific to CO systems designed in accordance with Chapter 29 it should be located in this 29. It is out of place in Chapter 18 and not where one would go to find that requirement.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 200-NFPA 72-2019 [Section No. 18.4.3.4]	

Submitter Information Verification

Submitter Full Name: David Lowrey
Organization: City of Boulder Fire Rescue
Affiliation: Fire Marshals Association of Colorado
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 29 18:52:33 EDT 2019
Committee: SIG-HOU

Public Input No. 336-NFPA 72-2019 [Section No. 29.5.3.2]

29.5.3.2

Carbon monoxide–warning equipment to be installed in residential occupancies shall produce the ~~T~~ four ~~-4 signal. After the initial 4 minutes of alarm, the 5-second "off" time of the alarm signal shall be permitted to be changed to 60 seconds ± 10 percent.~~ pulse temporal pattern signal as specified in 18.4.3.

Statement of Problem and Substantiation for Public Input

This is the only reference in NFPA 72 to a "T-4" signal. Since a full definition and description of the four-pulse temporal pattern signal is provided in 18.4.3, reference should be provided to that section for consistency and accuracy.

The last sentence of 29.5.3.2 is a duplicate of the allowance at 18.4.3.2(2), and thus can be eliminated as duplicate material as long as reference is made to 18.4.3 in the text.

Submitter Information Verification

Submitter Full Name: Larry Rietz
Organization: JENSEN HUGHES
Street Address:
City:
State:
Zip:
Submittal Date: Fri Jun 21 12:18:19 EDT 2019
Committee: SIG-HOU

Public Input No. 206-NFPA 72-2019 [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.

Additional Proposed Changes

File Name	Description	Approved
SIG-HOU_Low_Frequency_PI_DRAFT.docx	proposed changes to 29.5.9 and 29.5.10	

Statement of Problem and Substantiation for Public Input

Statement of Problem and Substantiation of Public Input……
This public input is for the purpose of demonstrating the National Disability Rights Network (the nations largest group of state based legal advocates for individuals with disabilities) support for mandating the smoke alarm to produce the low frequency audible fire alarm signals in all sleeping rooms.
While this requirement will be in the newer editions of the International Fire Code and NFPA 101, including this provision in Chapter 29 of the 2022 edition of NFPA 72 will help to ensure no segment of the population will fall through a code / standard adoption gap.
We have read the peer reviewed research on this matter and are aware of the statistics indicating the significant percentage of the population impacted by hearing loss. Some studies show that 40 million Americans will be identified with a hearing loss by 2025 with that number growing to 53 million by 2050.
This public input is a continuation of the support we have demonstrated in the past at the ICC Fire Code Action Council during their deliberations on the is matter.
Peer-Reviewed Research: Ian R. Thomas and Dorothy Bruck, Waking Effectiveness of Alarms for Adults Who Are Hard of Hearing (Melbourne, Australia: Victoria University), National Fire Protection Association, 2007

Submitter Information Verification

Submitter Full Name: Mark Larson
Organization: Mark Larson And Associates LLC
Affiliation: National Disability Rights Network (NDRN)
Street Address:
City:
State:
Zip:
Submittal Date: Thu May 30 15:29:36 EDT 2019
Committee: SIG-HOU

2022 Edition of NFPA 72 (SIG-HOU)

Low Frequency Audible Alarm Signal in Sleeping Rooms

Proposed Text of Public Input:

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 and smoke alarms 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~~ shall be a 520 Hz low-frequency audible alarm signal in accordance with 29.5.10.1.

A.29.5.10 The standard audible alarm signal used in all smoke alarms for the past 30 years utilized a typical frequency of 3Khz. Peer-reviewed research has concluded the wakening effectiveness of the 520 Hz low-frequency signal is superior to standard 3 KHz audible alarm signal for awakening high-risk segments of the population such as such as people over 65, people who are hard of hearing, school age children and people who are alcohol impaired. Therefore, smoke alarms are now required to produce the 520 Hz low-frequency audible alarm signal in areas intended for sleeping. If smoke alarms that are capable of producing the low-frequency audible alarm signal are not available, smoke detectors arranged to function in the same manner as smoke alarms are required. The following product solutions are currently available in the market if the smoke alarm is unable to produce the 520 Hz low-frequency audible alarm signal in sleeping rooms:

1. Smoke detectors with integral sounder bases
2. Fire alarm system horns and horn/strobes

The peer-reviewed research was conducted under the auspicious of the Fire Protection Research Foundation (*Optimizing Fire Alarm Notification for High Risk Groups*) as well as the coinciding reports (*Waking Effectiveness of Alarms for Adults Who Are Hard of Hearing*; and *Waking Effectiveness of Alarms for the Alcohol Impaired*).

29.5.10.1* ~~**Mild to Severe Hearing Loss**~~ **520Hz Low Frequency Audible Alarm Signal.** Notification appliances or smoke alarms provided ~~for those with mild to severe hearing loss shall comply with the following~~ in sleeping rooms and guest rooms shall produce a 520Hz low frequency audible alarm signal complying with the following:

~~1) An audible notification appliance producing a low frequency alarm signal shall be installed in the following situations:~~
~~a) Where required by governing laws, codes, or standards for people with hearing loss~~
~~b) Where provided voluntarily for those with hearing loss~~
~~2) * The low frequency alarm signal output shall comply with the following:~~
~~a) The waveform shall have a fundamental frequency of 520 Hz ±10 percent.~~
~~b) 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.~~

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.

~~**A.29.5.10.1** 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)**~~ **A.29.5.10.1** 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.

29.5.10.2* Moderately Severe to Profound Hearing Loss.
Visual notification appliances in accordance with the requirements of 18.5.5.8 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

Public Input No. 175-NFPA 72-2019 [Section No. 29.5.10 [Excluding any Sub-Sections]]

* Notification appliances and smoke alarms __ provided in sleeping rooms and guest rooms ~~for those with hearing loss shall comply~~ shall be a 520 Hz low-frequency audible alarm signal in accordance with 29.5.10.1 ~~and 29~~ . ~~5.10.2, as applicable.~~

Statement of Problem and Substantiation for Public Input

This Public Input (PI) seeks to enhance the waking effectiveness of high risk segments of the population (over 65, people who are hard of hearing, school age children and people who are alcohol impaired) by providing a requirement for the 520 Hz low frequency audible fire alarm signal in all sleeping rooms. The requirement in this PI won't become widely enforced until 2025 or 2026 because the 2022 edition of NFPA 72 will be referenced in the 2024 edition of the ICC and NFPA model codes.

Smoke alarm manufacturers will be working to develop a product that will produce the 520 Hz low-frequency audible alarm signal because the 2021 edition of the International Fire Code will require smoke alarms that are installed in sleeping rooms of new hotels, dormitories and apartment buildings to produce the 520 Hz low-frequency audible alarm signal. Also, the NFPA 101 Residential Committee unanimously approved FR 6886 and FR 6892 that will require smoke alarms that are installed in sleeping rooms to produce the 520 Hz low-frequency audible alarm signal.

Any further delay in implementing a technology that is proven to enhance public life safety needs to be avoided. Peer-reviewed research has concluded the wakening effectiveness of the 520 Hz low-frequency signal is superior to standard 3KHz audible alarm signal for awakening high-risk segments of the population such as such as people over 65, people who are hard of hearing, school age children and people who are alcohol impaired.

Peer-Reviewed Research: Ian R. Thomas and Dorothy Bruck, Waking Effectiveness of Alarms for Adults Who Are Hard of Hearing (Melbourne, Australia: Victoria University), National Fire Protection Association, 2007

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 176-NFPA 72-2019 [New Section after A.29.5.10.1]	
Public Input No. 178-NFPA 72-2019 [Section No. 29.5.10.1]	
Public Input No. 179-NFPA 72-2019 [Section No. A.29.5.10.1]	
Public Input No. 180-NFPA 72-2019 [Section No. A.29.5.10.1(2)]	
Public Input No. 176-NFPA 72-2019 [New Section after A.29.5.10.1]	
Public Input No. 178-NFPA 72-2019 [Section No. 29.5.10.1]	
Public Input No. 179-NFPA 72-2019 [Section No. A.29.5.10.1]	
Public Input No. 180-NFPA 72-2019 [Section No. A.29.5.10.1(2)]	

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Committee: SIG-HOU

Public Input No. 216-NFPA 72-2019 [Section No. 29.5.10 [Excluding any Sub-Sections]]

Notification appliances provided in sleeping ~~rooms~~ areas 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

Would like to replace the word "rooms" with "areas" in order for the user of the code to consider areas of the dwelling unit where someone could be sleeping. A room is very defining and limits the low frequency sounders to what is typically thought of as a bedroom. It's common for individuals to sleep in other areas of the dwelling such as living room areas, an office converted to a bedroom, basements. . . A.18.4.6.3 provides guidance for what Chapter 18 intent was for where low frequency sounders should be installed considering where someone could be sleeping. A PI was also submitted for Chapter 29 to point the user back to A.18.4.6.1 as the intent for what should be considered an area where someone could be sleeping.

Consistency between Chapter 18 and 29 with the words used within the document is important and perhaps prevent less confusion to the user of our document.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 215-NFPA 72-2019 [New Section after A.29.5.10.1]	
Public Input No. 215-NFPA 72-2019 [New Section after A.29.5.10.1]	

Submitter Information Verification

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Committee: SIG-HOU

Public Input No. 177-NFPA 72-2019 [Section No. 29.5.10.1]

29.5.10.1* ~~Mild to Severe Hearing Loss.~~ **520Hz Low Frequency Audible Alarm Signal**

Notification appliances ~~provided for those with mild to severe hearing loss shall comply with the following:~~

- ~~An audible notification appliance producing a 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~~ or smoke alarms provided in sleeping rooms and guest rooms shall produce a 520Hz low frequency audible alarm signal complying with the following :

(1) The waveform shall have a fundamental frequency of ~~520 Hz ± 10 percent~~

(2) 520 Hz ? ± 10 percent .

(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~~

(4) 60 seconds , whichever is greater.

Statement of Problem and Substantiation for Public Input

This Public Input (PI) seeks to enhance the waking effectiveness of high risk segments of the population (over 65, people who are hard of hearing, school age children and people who are alcohol impaired) by providing a requirement for the 520 Hz low frequency audible fire alarm signal in all sleeping rooms. The requirement in this PI won't become widely enforced until 2025 or 2026 because the 2022 edition of NFPA 72 will be referenced in the 2024 edition of the ICC and NFPA model codes.

Smoke alarm manufacturers will be working to develop a product that will produce the 520 Hz low-frequency audible alarm signal because the 2021 edition of the International Fire Code will require smoke alarms that are installed in sleeping rooms of new hotels, dormitories and apartment buildings to produce the 520 Hz low-frequency audible alarm signal. Also, the NFPA 101 Residential Committee unanimously approved FR 6886 and FR 6892 that will require smoke alarms that are installed in sleeping rooms to produce the 520 Hz low-frequency audible alarm signal.

Any further delay in implementing a technology that is proven to enhance public life safety needs to be avoided. Peer-reviewed research has concluded the wakening effectiveness of the 520 Hz low-frequency signal is superior to standard 3KHz audible alarm signal for awakening high-risk segments of the population such as such as people over 65, people who are hard of hearing, school age children and people who are alcohol impaired.

Peer-Reviewed Research: Ian R. Thomas and Dorothy Bruck, Waking Effectiveness of Alarms for Adults Who Are Hard of Hearing (Melbourne, Australia: Victoria University), National Fire Protection Association, 2007

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Submittal Date: Sat May 18 15:22:50 EDT 2019
Committee: SIG-HOU

Public Input No. 178-NFPA 72-2019 [Section No. 29.5.10.1]

29.5.10.1* ~~Mild to Severe Hearing Loss~~ **520Hz Low Frequency Audible Alarm Signal** .

Notification appliances ~~provided for those with mild to severe hearing loss shall comply with the following:~~

- ~~An audible notification appliance producing a 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~~ or smoke alarms provided in sleeping rooms and guest rooms shall produce a 520Hz low frequency audible alarm signal complying with the following :

(1) The waveform shall have a fundamental frequency of ~~520 Hz~~

(2) 520 Hz ± ~~10 percent~~

(3) 10 percent .

(4) 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~~

(5) 60 seconds , whichever is greater.

Additional Proposed Changes

File Name	Description	Approved
SIG-HOU_Low_Frequency_PI_DRAFT.docx	document attached in legislative text for reference.	

Statement of Problem and Substantiation for Public Input

This Public Input (PI) seeks to enhance the waking effectiveness of high risk segments of the population (over 65, people who are hard of hearing, school age children and people who are alcohol impaired) by providing a requirement for the 520 Hz low frequency audible fire alarm signal in all sleeping rooms. The requirement in this PI won't become widely enforced until 2025 or 2026 because the 2022 edition of NFPA 72 will be referenced in the 2024 edition of the ICC and NFPA model codes.

Smoke alarm manufacturers will be working to develop a product that will produce the 520 Hz low-frequency audible alarm signal because the 2021 edition of the International Fire Code will require smoke alarms that are installed in sleeping rooms of new hotels, dormitories and apartment buildings to produce the 520 Hz low-frequency audible alarm signal. Also, the NFPA 101 Residential Committee unanimously approved FR 6886 and FR 6892 that will require smoke alarms that are installed in sleeping rooms to produce the 520 Hz low-frequency audible alarm signal.

Any further delay in implementing a technology that is proven to enhance public life safety needs to be avoided. Peer-reviewed research has concluded the wakening effectiveness of the 520 Hz low-frequency signal is superior to standard 3KHz audible alarm signal for awakening high-risk segments of the population such as such as people over 65, people who are hard of hearing, school age children and people who are alcohol impaired.

Peer-Reviewed Research: Ian R. Thomas and Dorothy Bruck, Waking Effectiveness of Alarms for Adults Who Are Hard of Hearing (Melbourne, Australia: Victoria University), National Fire Protection Association, 2007

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 175-NFPA 72-2019 [Section No. 29.5.10 [Excluding any Sub-Sections]]	
Public Input No. 176-NFPA 72-2019 [New Section after A.29.5.10.1]	
Public Input No. 179-NFPA 72-2019 [Section No. A.29.5.10.1]	
Public Input No. 180-NFPA 72-2019 [Section No. A.29.5.10.1(2)]	
Public Input No. 175-NFPA 72-2019 [Section No. 29.5.10 [Excluding any Sub-Sections]]	
Public Input No. 176-NFPA 72-2019 [New Section after A.29.5.10.1]	
Public Input No. 179-NFPA 72-2019 [Section No. A.29.5.10.1]	
Public Input No. 180-NFPA 72-2019 [Section No. A.29.5.10.1(2)]	

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Committee: SIG-HOU

2022 Edition of NFPA 72 (SIG-HOU)

Low Frequency Audible Alarm Signal in Sleeping Rooms

Proposed Text of Public Input:

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 and smoke alarms 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~~ shall be a 520 Hz low-frequency audible alarm signal in accordance with 29.5.10.1.

A.29.5.10 The standard audible alarm signal used in all smoke alarms for the past 30 years utilized a typical frequency of 3Khz. Peer-reviewed research has concluded the wakening effectiveness of the 520 Hz low-frequency signal is superior to standard 3 KHz audible alarm signal for awakening high-risk segments of the population such as such as people over 65, people who are hard of hearing, school age children and people who are alcohol impaired. Therefore, smoke alarms are now required to produce the 520 Hz low-frequency audible alarm signal in areas intended for sleeping. If smoke alarms that are capable of producing the low-frequency audible alarm signal are not available, smoke detectors arranged to function in the same manner as smoke alarms are required. The following product solutions are currently available in the market if the smoke alarm is unable to produce the 520 Hz low-frequency audible alarm signal in sleeping rooms:

1. Smoke detectors with integral sounder bases
2. Fire alarm system horns and horn/strobes

The peer-reviewed research was conducted under the auspicious of the Fire Protection Research Foundation (*Optimizing Fire Alarm Notification for High Risk Groups*) as well as the coinciding reports (*Waking Effectiveness of Alarms for Adults Who Are Hard of Hearing*; and *Waking Effectiveness of Alarms for the Alcohol Impaired*).

29.5.10.1* ~~**Mild to Severe Hearing Loss**~~ **520Hz Low Frequency Audible Alarm Signal.** Notification appliances or smoke alarms provided ~~for those with mild to severe hearing loss shall comply with the following~~ in sleeping rooms and guest rooms shall produce a 520Hz low frequency audible alarm signal complying with the following:

~~1) An audible notification appliance producing a low frequency alarm signal shall be installed in the following situations:~~
~~a) Where required by governing laws, codes, or standards for people with hearing loss~~
~~b) Where provided voluntarily for those with hearing loss~~
~~2) * The low frequency alarm signal output shall comply with the following:~~
~~a) The waveform shall have a fundamental frequency of 520 Hz } 10 percent.~~
~~b) 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.~~

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.

~~**A.29.5.10.1** 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)**~~ **A.29.5.10.1** 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.

29.5.10.2* Moderately Severe to Profound Hearing Loss.
Visual notification appliances in accordance with the requirements of 18.5.5.8 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

Statement of Problem and Substantiation of Public Input:
This Public Input (PI) seeks to enhance the waking effectiveness of high risk segments of the population (over 65, people who are hard of hearing, school age children and people who are alcohol impaired) by providing a requirement for the 520 Hz low frequency audible fire alarm signal in all sleeping rooms. The requirement in this PI won't become widely enforced until 2025 or 2026 because the 2022 edition of NFPA 72 will be referenced in the 2024 edition of the ICC and NFPA model codes.

Smoke alarm manufacturers will be working to develop a product that will produce the 520 Hz low-frequency audible alarm signal because the 2021 edition of the International Fire Code will require smoke alarms that are installed in sleeping rooms of new hotels, dormitories and apartment buildings to produce the 520 Hz low-frequency audible alarm signal. Also, the NFPA 101 Residential Committee unanimously approved FR 6886 and FR 6892 that will require smoke alarms that are installed in sleeping rooms to produce the 520 Hz low-frequency audible alarm signal.

Any further delay in implementing a technology that is proven to enhance public life safety needs to be avoided. Peer-reviewed research has concluded the wakening effectiveness of the 520 Hz low-frequency signal is superior to standard 3KHz audible alarm signal for awakening high-risk segments of the population such as such as people over 65, people who are hard of hearing, school age children and people who are alcohol impaired.

Peer-Reviewed Research: Ian R. Thomas and Dorothy Bruck, *Waking Effectiveness of Alarms for Adults Who Are Hard of Hearing* (Melbourne, Australia: Victoria University), National Fire Protection Association, 2007

Public Input No. 151-NFPA 72-2019 [New Section after 29.5.10.2]

TITLE OF NEW CONTENT

Type your content here ...

29.5.11 Signal appliances connected to notification appliance circuit(s) that services more than one suite, apartment or dwelling may have provisions to temporarily silence the notification appliances within an individual suite, apartment or dwelling. The silence feature shall be limited to 10 minutes or less and requires manual operation only if the notification appliance circuit is active.

Statement of Problem and Substantiation for Public Input

This aligns with Canadian requirements for suits and US smoke alarms which allow for local silence if the alarm is active. This feature may also be used to calm at risk population in the event of a fire or CO alarm.

Submitter Information Verification

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Submittal Date: Tue May 07 12:16:20 EDT 2019
Committee: SIG-HOU

Public Input No. 136-NFPA 72-2019 [Section No. 29.6.1.1]

29.6.1.1

The requirements of this chapter shall assume that occupants are capable of effective self-rescue.

Statement of Problem and Substantiation for Public Input

Occupants may be capable of normal egress during their daily lives, and may assume that this satisfies the code requirement for self-rescue. However, occupants with physical or other impairments may not be capable of effective self-rescue under emergency conditions. An industry panel at the Vision 20/20 symposium in Baltimore, MD in April 2019 recommended that further efforts to improve the effectiveness of smoke alarms during fires include an emphasis on effective self-rescue, as well as further study on conditions affecting occupants ability to self rescue, including conditions related to chemical impairment, youth, and advancing age.

Submitter Information Verification

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Submittal Date: Fri Apr 26 14:18:06 EDT 2019
Committee: SIG-HOU

Public Input No. 298-NFPA 72-2019 [Section No. 29.8.1.1]

29.8.1.1*

Where required by other governing laws, codes, or standards for a specific type of new construction occupancy, listed single- and multiple-station smoke alarms shall be installed as follows:

(1)* In all sleeping rooms and guest rooms

(2)* 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

(3) On every level of a dwelling unit, including basements

(4) On every level of a residential board and care occupancy (small facility), including basements and excluding crawl spaces and unfinished attics

(5)* In the living area(s) of a guest suite

(6) In the living area(s) of a residential board and care occupancy (small facility)

Statement of Problem and Substantiation for Public Input

The current text does not identify new or existing household applications. This change specifies that the requirement is for new construction, thereby (along with PI 296 and 297) will permit the installation of a single or multiple smoke detectors as part of a security system in residences that have no detection devices at all.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 296-NFPA 72-2019 [Section No. 29.3.3]	
Public Input No. 297-NFPA 72-2019 [New Section after 29.3.3]	
Public Input No. 296-NFPA 72-2019 [Section No. 29.3.3]	
Public Input No. 297-NFPA 72-2019 [New Section after 29.3.3]	

Submitter Information Verification

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Submittal Date: Sun Jun 16 13:23:26 EDT 2019
Committee: SIG-HOU

Public Input No. 468-NFPA 72-2019 [Section No. 29.10.6]

29.10.6– _ **Combination System** _ Control Unit.

29.10.6.1

The combination system control unit shall be automatically restoring upon restoration of electrical power.

29.10.6.2*

The combination system control unit shall be of a type that “locks in” on an alarm condition.

29.10.6.3

Smoke detection circuits shall not be required to lock in.

29.10.6.4

If a reset switch is provided, it shall be of a self-restoring (momentary operation) type.

29.10.6.5

A means for silencing the trouble notification appliance(s) 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 transfers the trouble indication to an identified lamp or other acceptable visible indicator, and the visible indication persists until the trouble condition has been corrected.

29.10.6.6

A means for turning off actuated alarm notification appliances shall be permitted only if the following conditions are satisfied:

(1) The means is key-operated or located within a locked cabinet or arranged to provide equivalent protection against unauthorized use.

(2) The means includes the provision of a visible alarm silence indication.

(3) The silenced position is indicated by a distinctive signal.

(4) The switch is a momentary or self-restoring switch.

29.10.6.7

Initiating devices and notification appliances connected to household combination system control units 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 trouble signal.

29.10.6.8

The combination system control unit shall be in compliance with applicable standards such as ANSI/UL 985, *Standard for Household Fire Warning System Units*; ANSI/UL 1730, *Standard for Smoke Detector Monitors and Accessories for Individual Living Units of Multifamily Residences and Hotel/Motel Rooms*; or ANSI/UL 864, *Standard for Control Units and Accessories for Fire Alarm Systems*.

29.10.6.9

Any data exchange between the combination system control unit and separate independent devices via remote access shall not compromise the integrity of the fire alarm system.

29.10.6.10

Remote resetting and silencing of a combination system control unit from other than the protected premises shall be inhibited for a minimum of 4 minutes from the initial activation of the fire alarm signal.

29.10.6.11

Each electrical carbon monoxide detection system shall have an integral test means to allow testing of the system operation.

Statement of Problem and Substantiation for Public Input

As defined in Chapter 3, "Control Unit" can refer to a number of different devices. A new definition of "Combination System Control Unit" has been submitted to Chapter 3 so it can be used more precisely in Chapter 29, as proposed here. A change is also being submitted to 23.8.4.9.4 which uses "combination control unit," (undefined.)

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 466-NFPA 72-2019 [Section No. 3.3.63]	Definition

Submitter Information Verification

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Submittal Date: Mon Jun 24 17:07:32 EDT 2019
Committee: SIG-HOU

Public Input No. 532-NFPA 72-2019 [Section No. 29.10.6.8]

29.10.6.8

The control unit shall be in compliance with applicable standards such as ANSI/UL 985, *Standard for Household Fire Warning System Units*; ANSI/UL 1730, *Standard for Smoke Detector Monitors and Accessories for Individual Living Units of Multifamily Residences and Hotel/Motel Rooms*; or ANSI/UL 864, *Standard for Control Units and Accessories for Fire Alarm Systems and CP-01 Standard* . _

Additional Proposed Changes

File Name	Description	Approved
CP-01-2019_Final_Draft_04232019.pdf	CP-01 False Alarm Standard	

Statement of Problem and Substantiation for Public Input

submitting CP-01 as there are changes in the document adding definitions for mobility and remote connections.

Submitter Information Verification

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Submittal Date: Wed Jun 26 08:34:27 EDT 2019
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Public Input No. 44-NFPA 72-2019 [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 fire alarm signal. Exception: When the system being remotely reset is a non required system and when the silencing of the fire alarm Control does not result in the silencing of the activated smoke and or CO alarm the system may be remotly reset without delay.

Statement of Problem and Substantiation for Public Input

With new technology being considered, the intent is to set a minimum standard for remote resetting of non-required fire alarm systems that are providing off site notification of smoke/CO Alarms. This change will allow for the silencing of the control unit while having no impact on the onsite required notification that the alarms provide thereby still allowing anyone on site to be notified and evacuate as expected.

Submitter Information Verification

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Committee: SIG-HOU

Public Input No. 565-NFPA 72-2019 [Section No. 29.10.7.8.2]

29.10.7.8.2

Single- or multiple-station smoke alarms shall be permitted to be connected to system control ~~equipment located~~ units located within the dwelling unit.

Statement of Problem and Substantiation for Public Input

The term "control equipment" is not defined in the standard. The term "control unit" is defined in the standard and is the term that is appropriate to convey the intended meaning.

Submitter Information Verification

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Submittal Date: Wed Jun 26 12:33:53 EDT 2019
Committee: SIG-HOU

Public Input No. 567-NFPA 72-2019 [Section No. 29.10.7.8.3]

29.10.7.8.3

When connected, the actuation of a single- or multiple-station smoke alarm shall initiate an alarm signal at the system control ~~equipment located~~ units located within the dwelling unit.

Statement of Problem and Substantiation for Public Input

The term "control equipment" is not defined in the standard. The term "control unit" is defined in the standard and is the term that is appropriate to convey the intended meaning.

Submitter Information Verification

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Submittal Date: Wed Jun 26 12:37:02 EDT 2019
Committee: SIG-HOU

Public Input No. 575-NFPA 72-2019 [Section No. 29.10.7.8.3]

29.10.7.8.3

When connected, the actuation of a single- or multiple-station smoke alarm shall initiate an alarm signal at the system control ~~equipment located~~ units located within the dwelling unit.

Statement of Problem and Substantiation for Public Input

The term "control equipment" is not defined in the standard. The term "control unit" is defined in the standard and is the term that is appropriate to convey the intended meaning.

Submitter Information Verification

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Submittal Date: Wed Jun 26 13:01:02 EDT 2019
Committee: SIG-HOU

Public Input No. 533-NFPA 72-2019 [Section No. 29.10.8.2]

29.10.8.2 Nonsupervised Wireless Interconnected Alarms.

29.10.8.2.1*

To ensure adequate transmission and reception capability, nonsupervised, low-power wireless alarms shall be capable of reliably communicating at a distance of 100 ft (30.5 m) indoors as tested to an equivalent open area test distance, D_{EOAT}, between two devices in accordance with Equations 29.10.8.2.1a and 29.10.8.2.1b.

$$D_{EOAT} = 30.5 \times \left(10^{\frac{L_b}{40}} \right) \quad \textbf{[29.10.8.2.1a]}$$

where:

L_b = the building attenuation factor

$$L_b = 4 \times L_w + 2 \times L_f \quad \textbf{[29.10.8.2.1b]}$$

where:

L_W = attenuation value of a wall

$= 2 \times L_1 + L_2$

L_f = attenuation value of a floor

$= L_1 + L_2 + L_3 + L_4$

L_1 = frequency-dependent attenuation value for $^1/_2$ in. (13 mm) drywall

L_2 = frequency-dependent attenuation value for $1^1/_2$ in. (38 mm) structural lumber

L_3 = frequency-dependent attenuation value for $^3/_4$ in. (19 mm) plywood

L_4 = frequency-dependent attenuation value for $^1/_2$ in. (13 mm) glass/tile floor

29.10.8.2.2

Fire alarm signals shall have priority over all other signals.

29.10.8.2.3

The maximum allowable response delay from activation of an initiating device to receipt and alarm/display by the receiver/control unit shall be 20 seconds.

29.10.8.2.4*

Wireless interconnected smoke alarms (in receive mode) shall remain in alarm as long as the originating unit (transmitter) remains in alarm.

29.10.8.2.5

The occurrence of any single fault that disables a transceiver shall not prevent other transceivers in the system from operating.

Statement of Problem and Substantiation for Public Input

Remove Section 29.10.8.2.1

29.10.8.2.1*
To ensure adequate transmission and reception capability, nonsupervised, low-power wireless alarms shall be capable of reliably communicating at a distance of 100 ft (30.5 m) indoors as tested to an equivalent open area test distance, DEOAT, between two devices in accordance with Equations 29.10.8.2.1a and 29.10.8.2.1b.
[29.10.8.2.1a]
where:
.

Lb = the building attenuation factor
[29.10.8.2.1b]
where:
Lw = attenuation value of a wall
= 2 × L1 + L2
Lf = attenuation value of a floor
= L1 + L2 + L3 + L4
L1 = frequency-dependent attenuation value for 1/2 in. (13 mm) drywall
L2 = frequency-dependent attenuation value for 11/2 in. (38 mm) structural lumber
L3 = frequency-dependent attenuation value for 3/4 in. (19 mm) plywood
L4 = frequency-dependent attenuation value for 1/2 in. (13 mm) glass/tile floor

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Committee: SIG-HOU

Public Input No. 149-NFPA 72-2019 [Section No. 29.10.8.2.1]

~~29.10.8.2.1 * –~~

~~To ensure adequate transmission and reception capability, nonsupervised, low-power wireless alarms shall be capable of reliably communicating at a distance of 100 ft (30.5 m) indoors as tested to an equivalent open area test distance, D_{EOAT}, between two devices in accordance with Equations 29.10.8.2.1a and 29.10.8.2.1b.~~

$$D_{EOAT} = 30.5 \times \left(10^{\frac{L_b}{40}} \right)$$ ~~[29.10.8.2.1a~~

~~where:~~

~~L_b = the building attenuation factor~~

$$L_b = 4 \times L_w + 2 \times L_f$$ ~~[29.10.8.2.1b~~

~~where: L_w = attenuation value of a wall = 2 × L_1 + L_2 L_f = attenuation value of a floor = L_1 + L_2 + L_3 + L_4 L_1 = frequency-dependent attenuation value for 1/2 in. (13 mm) drywall L_2 = frequency-dependent attenuation value for 1 1/2 in. (38 mm) structural lumber L_3 = frequency-dependent attenuation value for 3/4 in. (19 mm) plywood L_4 = frequency-dependent attenuation value for 1/2 in. (13 mm) glass/tile floor~~

-

Statement of Problem and Substantiation for Public Input

All text in 29.10.8.2.1 is being proposed to be deleted. The strikeout for the formulas is not being shown correctly but all text including the formulas are proposed to be deleted in 29.10.8.2.1.

The detail on testing interconnection of unsupervised wireless alarms was added to NFPA 72 in 2010 because there were products on the market at that time and no reference to testing the wireless interconnection in the UL 217 product standard. Since that time, wireless interconnection has been incorporated into UL 217 and is being further refined as part of the regular ANSI process. Such product specific requirements properly belong in the product standard, not the installation standard. Since they now reside there, they can be removed from NFPA 72.

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Submittal Date: Tue May 07 11:12:34 EDT 2019
Committee: SIG-HOU

Public Input No. 311-NFPA 72-2019 [Section No. 29.10.8.2.1]

29.10.8.2.1*

To ensure adequate transmission and reception capability, nonsupervised, low-power wireless alarms shall be capable of reliably communicating at a distance of 100 ft (30.5 m) indoors as tested to an equivalent open area test distance~~, *D EOAT*, between two devices in accordance with Equations 29.10.8.2.1a and 29.10.8.2.1b.~~

$$D_{EOAT} = 30.5 \times \left(10^{\frac{L_b}{40}} \right)$$ ~~[29.10.8.2.1a]~~

~~where:~~

~~*L b* = the building attenuation factor~~

$$L_b = 4 \times L_w + 2 \times L_f$$ ~~[29.10.8.2.1b]~~

~~where: *L w* = attenuation value of a wall = 2 × *L* 1 + *L* 2 *L f* = attenuation value of a floor = *L* 1 + *L* 2 + *L* 3 + *L* 4 *L* 1 = frequency-dependent attenuation value for 1/2 in. (13 mm) drywall *L* 2 = frequency-dependent attenuation value for 1 1/2 in. (38 mm) structural lumber *L* 3 = frequency-dependent attenuation value for 3/4 in. (19 mm) plywood *L* 4 = frequency-dependent attenuation value for 1/2 in. (13 mm) glass/tile floor. Low-power wireless alarms shall be tested upon completion of installation to confirm connectivity of each device.~~

Statement of Problem and Substantiation for Public Input

The transmitter/receiver combination is tested as part of the NRTL Listing. The equations included in 29.10.8.2a and 29.10.8.2b are subject to interpretation and do not take into account variations in the actual building construction and materials used or even humidity conditions which make reproducible and repeatable testing nearly impossible. The most reproducible and repeatable method for transmitter/receiver testing is completed through unobstructed air. This is already stated in 29.10.8.2.1, so the equations only add complexity and confusion for manufacturers, installers, and the AHJ. To confirm connectivity of each device, all equipment shall be tested upon completion of installation.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 312-NFPA 72-2019 [Section No. A.29.10.8.2.1]	
Public Input No. 313-NFPA 72-2019 [Section No. I.1.2.16.9]	

Submitter Information Verification

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Committee: SIG-HOU

Public Input No. 534-NFPA 72-2019 [New Section after 29.10.9.10.6]

TITLE OF NEW CONTENT: Cellular Service

Type your content here ... Cellular radio service shall connect to the cellullar network directly without a device that emulates an outdated technology.

Statement of Problem and Substantiation for Public Input

There are devices entering the market that will receive data signals from the panel from a sunsetted technology the retransmit these signals over the current cellular network. At minimum devices need to be listed and tested.

Submitter Information Verification

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Committee: SIG-HOU

Public Input No. 276-NFPA 72-2019 [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 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 29.14~~.2 and 29.14.4~~

Statement of Problem and Substantiation for Public Input

Committee task group recommended changes based on a correlating committee comment: The reference is incorrect. The two sections referenced are not consistent (one refers to CO markings and one for household alarm control units, whereas the requirement refers to instructions. Other sections should probably be referenced to be complete and all inclusive.

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Committee: SIG-HOU

Public Input No. 23-NFPA 72-2018 [Section No. 29.11.2.1]

29.11.2.1*

The interconnection of alarms shall comply with the following:

(1) Alarms shall not be interconnected in numbers that exceed the manufacturer's published instructions.

(2) In no case shall more than 18 initiating devices be interconnected (of which 12 can be smoke alarms*heat detectors or CO detectors*) where the interconnecting means is not supervised. *Examples of initiation devices(CO,Smoke,Heat)(pull stations*)

(3) In no case shall more than 64 initiating devices be interconnected (of which 42 can be smoke alarms) where the interconnecting means is supervised. *this is the max per circuit, after number reached ,must use new circuit

(4) Alarms of different manufacturers shall not be interconnected unless listed as being compatible with the specific model.

(5) When alarms of different types are interconnected, all interconnected alarms shall produce the appropriate audible response for the phenomena being detected or remain silent.

Additional Proposed Changes

File Name	Description	Approved
ISSUES_WITH_NFPA72.docx	ISSUE WITH NFPA72	

Statement of Problem and Substantiation for Public Input

SHORT TERM HOME RENTAL COMMUNITIES SHOULD HAVE A STANDARD FIRE CODE TO PREVENT THE HUGE GRAY AREA THAT LEADS TO PROBLEMS FOR BUILDERS,INSTALLERS,COUNTY OFFICIALS, AND OWNERS. IF THIS AREA WAS CLEAR, WE CAN AVOID PROBLEMS IN THE WORLD OF TRANSIENT HOMES AND HOMES THAT ARE MEANT TO HOUSE MULTIPLE NUMBERS OF PEOPLE. THE PROBLEM STARTS WITH THE LAND DESCRIPTION/DEVELOPMENT IN SOME CASES. SO MUCH IS MISSING FOR CLARIFICATION TO BUILDING OFFICIALS. BRIAN ELG 407-290-5911

Submitter Information Verification

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Submittal Date: Mon Nov 26 16:01:00 EST 2018
Committee: SIG-HOU

MORE AND MORE TRANSIENT HOMES ARE BEING BUILT IN OUR AREA. THE CODE IS VERY GREY FOR THESE SITUATIONS. THE INTERCONNECTION OF FIRE ALARM DEVICES CODE PREVIOUSLY IN CHAPTER 29 IS NOW THE CODE BEING USED TO AVOID PUTTING IN A SUPERVISED SYSTEM. BUILDERS ARED GOING AROUND THIS BY SPLITTING UP A TYPICAL CO/SMOKE COMBO DETECTOR. THEY ARE BASICALLY SAYING IF THERE IS 12 SMOKE ALARMS AND 6 CO DETECTORS THAT THEIR SYSTEM NEED NOT BE SUPERVISED EVEN THOUGH THE FIRE DEPARTMENT RESPONDS TO THEM ALMOST THE SAME WAY. FOR 2 YEARS WE ANKNOWLEDGED THIS CODE AND HAVE OVER 250 SYSTEM OUT THERE SINCE THIS STARTED. NOW A BUILDING OFFICIAL IN OSCEOLA COUNTY DECIDED HE WOULD INTERPRET IN A WAY TO FAVOR A NON-SUPERVISED SYSTEM. ALSO SPACING SHOULD BE REVISITED IN THIS SECTION TO SHOW THERE SHALL NOT BE MORE THAN 30’ BETWEEN ALL DETECTORS. THE BUILDING CODE FOR SMOKE ALARMS PLACES A SMOKE DETECTOR OUTSIDE OF EACH BEDROOM IN THE IMMEDIATE VICINITY/NFPA DEFINES THIS AS 21FT. THE POINT HERE IS THAT WITH THESE NEW STYLE HOMES BEING BUILT FOR USE AS MINI HOTELS, THE CODES SHOULD BE CLEAR AND EVEN HAVE THEIR OWN SECTION. WE WOULD REALLY LOVE TO GIVE THIS MUCH MORE ATTENTION AND BELIEVE IT IS AN AREA THAT IS NOT BEING LOOKED IN TO.

BRIAN ELG

407-272-5990

Public Input No. 583-NFPA 72-2019 [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 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, unless listed for installation in close proximity to cooking appliances. Smoke alarms and smoke detectors 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 shall be equipped with an alarm-silencing means ~~or use photoelectric detection~~ .

(5) Smoke alarms or smoke detectors ~~that use photoelectric detection~~ shall be permitted for installation at a radial distance greater than 6 ft (1.8 m) from any stationary or fixed cooking appliance when both of the following conditions are met:

(a) The kitchen or cooking area and adjacent spaces have no clear interior partitions or headers.

(b) 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.

(6) ~~Effective January 1, 2022, smoke~~ Smoke alarms and smoke detectors installed between 6 ft (1.8 m) and 20 ft (6.1 m) along a horizontal flow path from a stationary or fixed cooking appliance shall be listed for resistance to common nuisance sources from cooking.

(7)* 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.

(8) 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.

(9)* 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.

(10) 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.

(11) 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.

(12)* 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.

(13) Smoke alarms and detectors installed in rooms with joists or beams shall comply with the requirements of 17.7.3.2.4.

(14) 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

We are proposing to delete many of the references to specific technology with the next edition of NFPA 72 to align

with the new testing criteria that are included in the 8th edition of UL 217 and the 7th Edition of UL 268. End product safety standards such as UL 217 and UL 268 are technology independent. In addition, the performance requirements for detecting fire types and cooking nuisance mitigation are independent of technology. Calling out technology requirements in an installation standard does not consider innovative technology solutions that could otherwise be used to comply with these end product standards. As an example, UL cooking nuisance research demonstrated that independent of smoke detection technology, and placement, all smoke alarms produced an alarm signal during normal cooking. Placement of the alarms in reference to the broiling hamburger cooking source and by 1.5% OBS/ft, resulted in an increased or delayed response, based on location, in almost all smoke alarms with many different types of technologies being tested.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 581-NFPA 72-2019 [Section No. 17.7.5.6.4]	
Public Input No. 584-NFPA 72-2019 [Section No. A.17.7.5.4.2]	
Public Input No. 587-NFPA 72-2019 [Section No. A.17.7.5.4.2]	
Public Input No. 588-NFPA 72-2019 [Section No. A.29.1.1]	
Public Input No. 589-NFPA 72-2019 [Section No. A.29.3.3]	
Public Input No. 590-NFPA 72-2019 [Section No. A.29.11.3.4(4)]	

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Committee: SIG-HOU

Public Input No. 649-NFPA 72-2019 [New Section after 29.12]

29.12.1 Cellular Technology. The use of cellular technology to silence or reset household fire alarm or carbon monoxide systems or to remotely modify system programming or functions shall not be permitted.

Statement of Problem and Substantiation for Public Input

This is a placeholder for subsequent modification by the cellular task group of the Correlating Committee.

Submitter Information Verification

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Committee: SIG-HOU

Public Input No. 308-NFPA 72-2019 [Section No. 29.13.1]

29.13.1

Fire and carbon monoxide alarm equipment shall be maintained and tested in accordance with the manufacturer's published instructions and per the requirements of 14.4.5 ~~and~~ , 14.4.6, and 14 . 4.8 .

Statement of Problem and Substantiation for Public Input

New paragraph 29.13.1 does not include the Chapter 14 reference for the testing of household carbon monoxide detection systems.

Submitter Information Verification

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Committee: SIG-HOU

Public Input No. 283-NFPA 72-2019 [Section No. A.29.1.1]

A.29.1.1

Chapter 29 does not attempt to cover all equipment, methods, and requirements that might be necessary or advantageous for the protection of lives and property from fire.

NFPA 72 is a “minimum code.” This chapter provides a number of requirements related to single- and multiple-station alarms and ~~household fire alarm systems that~~ household alarm systems (including connected detectors) that are deemed to be the practical and necessary minimum for average conditions at the present state of the art.

Currently Available Smoke Alarm Technology. The technologies used in currently available smoke alarms include ionization smoke detection and photoelectric detection. These detection types are defined in 3.3.276.2 and 3.3.276.4 and are further explained in A.3.3.276.2 and A.3.3.276.4. Ionization smoke detection is more responsive to invisible particles produced by most flaming fires. Photoelectric smoke detection is more responsive to the visible particles produced by most smoldering fire. Residential smoke alarms and commercial smoke detectors are currently available with either ionization technology or photoelectric technology or a combination of both technologies. The use of both technologies generally offers the advantage of providing a faster response to both flaming and smoldering fires, and is recommended for those who desire a higher level of protection than the minimum requirements of this Code.

Fatal home fires involving smoldering fires and flaming fires occur at night and during the day. It is not possible to reliably predict what type of fire will occur or at what hour of the day it will occur. Therefore, the preference of one technology over the other on the basis of the expectation of a particular type of fire (predominately smoldering or flaming) is not a sound basis for selection. While the current consensus of experts suggests that neither technology offers an advantage when the fire type is not known, there is a consensus that there would be a benefit to having both technologies since the type of fire cannot be predicted.

Based on recent analysis of the full scale fire tests documented by the National Institute of Standards and Technology in Report TN 1455-1-2008, *Performance of Home Smoke Alarms, Analysis of the Response of Several Available Technologies in Residential Fire Settings*, the minimum provisions of the Code using either technology are considered to provide an adequate level of protection for most individuals who are not intimate with the fire and are capable of self rescue. This would include occupants in the room of fire origin for both flaming and smoldering fires who escape through the normal path of egress. Protection beyond the minimum provisions of the Code using both technologies should be considered for situations involving individuals who are not capable of self rescue or who might need additional time for escape. These situations might include families where extra time is needed to awaken or assist others.

While it is true that ionization detection technology is more susceptible to nuisance alarms due to cooking, the use of this technology should not be dismissed, particularly where the additional protection of both technologies is suggested. In addition, there is no substantial evidence that suggests that either technology is more susceptible to nuisance alarms from bathroom steam. Provisions and guidance have been added to 29.11.3.4 to help minimize nuisance alarms from both sources. This is important since smoke alarms that are disabled due to frequent nuisance alarms offer no protection whatsoever. A higher level of protection would be afforded by using both technologies in all locations required by this Code with additional locations in other rooms of the dwelling. In considering this, pending the availability of smoke alarms specifically designed for nuisance alarm immunity, additional locations within 20 ft of a cooking appliance should be minimized, especially for smoke alarms using ionization technology.

While these considerations reflect the consensus of experts based on currently available test data that allows analysis of tenability along with alarm response, full scale fire testing and nuisance alarm testing of current technologies has continued and analysis of this data will also continue. In addition, new technologies are being considered with the prospect of enhanced detection response along with a higher immunity to nuisance activations. The work of the industry and the NFPA technical committee responsible for smoke alarm provisions will be ongoing.

Statement of Problem and Substantiation for Public Input

Committee task group recommendation based on correlating committee comment. The paragraph was expanded to specifically include detectors connected to household alarm systems.

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Committee: SIG-HOU

Public Input No. 588-NFPA 72-2019 [Section No. A.29.1.1]

A.29.1.1

Chapter 29 does not attempt to cover all equipment, methods, and requirements that might be necessary or advantageous for the protection of lives and property from fire.

NFPA 72 is a “minimum code.” This chapter provides a number of requirements related to single- and multiple-station alarms and household fire alarm systems that are deemed to be the practical and necessary minimum for average conditions at the present state of the art.

~~*Currently Available Smoke Alarm Technology.* The technologies used in currently available smoke alarms include ionization smoke detection and photoelectric detection. These detection types are defined in 3.3.276.2 and 3.3.276.4 and are further explained in A.3.3.276.2 and A.3.3.276.4 . Ionization smoke detection is more responsive to invisible particles produced by most flaming fires. Photoelectric smoke detection is more responsive to the visible particles produced by most smoldering fire. Residential smoke alarms and commercial smoke detectors are currently available with either ionization technology or photoelectric technology or a combination of both technologies. The use of both technologies generally offers the advantage of providing a faster response to both flaming and smoldering fires, and is recommended for those who desire a higher level of protection than the minimum requirements of this Code.~~

~~Fatal home fires involving smoldering fires and flaming fires occur at night and during the day. It is not possible to reliably predict what type of fire will occur or at what hour of the day it will occur. Therefore, the preference of one technology over the other on the basis of the expectation of a particular type of fire (predominately smoldering or flaming) is not a sound basis for selection. While the current consensus of experts suggests that neither technology offers an advantage when the fire type is not known, there is a consensus that there would be a benefit to having both technologies since the type of fire cannot be predicted.~~

~~Based on recent analysis of the full scale fire tests documented by the National Institute of Standards and Technology in Report TN 1455-1-2008, *Performance of Home Smoke Alarms, Analysis of the Response of Several Available Technologies in Residential Fire Settings* , the minimum provisions of the Code using either technology are considered to provide an adequate level of protection for most individuals who are not intimate with the fire and are capable of self rescue. This would include occupants in the room of fire origin for both flaming and smoldering fires who escape through the normal path of egress. Protection beyond the minimum provisions of the Code using both technologies should be considered for situations involving individuals who are not capable of self rescue or who might need additional time for escape. These situations might include families where extra time is needed to awaken or assist others.~~

~~While it is true that ionization detection technology is more susceptible to nuisance alarms due to cooking, the use of this technology should not be dismissed, particularly where the additional protection of both technologies is suggested. In addition, there is no substantial evidence that suggests that either technology is~~

There is no substantial evidence that suggests that any of the current technologies are more susceptible to nuisance alarms from bathroom steam.

~~Provisions~~

Installation provisions and guidance have been added to 29.11.3.4 to help minimize nuisance alarms from both sources. This is important since smoke alarms that are disabled due to frequent nuisance alarms offer no protection

~~whatsoever. A higher level of protection would be afforded by using both technologies in all locations required by this Code with additional locations in other rooms of the dwelling. In considering this, pending the availability of smoke alarms specifically designed for nuisance alarm immunity, additional locations within 20 ft of a cooking appliance should be minimized, especially for smoke alarms using ionization technology.~~

~~While these considerations reflect the consensus of experts based on currently available test data that allows analysis of tenability along with alarm response, full scale fire testing and nuisance alarm testing of current technologies has continued and analysis of this data will also continue. In addition, new technologies are being considered with the prospect of enhanced detection response along with a higher immunity to nuisance activations. The work of the industry and the NFPA technical committee responsible for smoke alarm provisions will be ongoing.~~

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Statement of Problem and Substantiation for Public Input

We are proposing to delete many of the references to specific technology with the next edition of NFPA 72 to align with the new testing criteria that are included in the 8th edition of UL 217 and the 7th Edition of UL 268. End product safety standards such as UL 217 and UL 268 are technology independent. In addition, the performance

requirements for detecting fire types and cooking nuisance mitigation are independent of technology. Calling out technology requirements in an installation standard does not consider innovative technology solutions that could otherwise be used to comply with these end product standards. As an example, UL cooking nuisance research demonstrated that independent of smoke detection technology, and placement, all smoke alarms produced an alarm signal during normal cooking. Placement of the alarms in reference to the broiling hamburger cooking source and by 1.5% OBS/ft, resulted in an increased or delayed response, based on location, in almost all smoke alarms with many different types of technologies being tested.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 583-NFPA 72-2019 [Section No. 29.11.3.4]	
Public Input No. 584-NFPA 72-2019 [Section No. A.17.7.5.4.2]	
Public Input No. 587-NFPA 72-2019 [Section No. A.17.7.5.4.2]	
Public Input No. 589-NFPA 72-2019 [Section No. A.29.3.3]	
Public Input No. 590-NFPA 72-2019 [Section No. A.29.11.3.4(4)]	
Public Input No. 592-NFPA 72-2019 [Section No. A.29.11.3.4(7)]	
Public Input No. 593-NFPA 72-2019 [Section No. B.4.7.1]	
Public Input No. 594-NFPA 72-2019 [Section No. B.4.7.3]	

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Public Input No. 589-NFPA 72-2019 [Section No. A.29.3.3]

A.29.3.3

This Code establishes minimum standards for the use of fire-warning equipment. The use of additional alarms or detectors over and above the minimum standard is encouraged. The use of additional devices can result in a combination of equipment (e.g., a combination of single- and multiple-station alarms or a combination of smoke alarms or smoke detectors that are part of a security/fire system and existing multiple-station alarms). Though a combination is allowed, one type of equipment must independently meet the requirements of the Code. Compliance with the requirements of the Code cannot rely on the combination of the following fire-warning equipment:

(1) Single-station alarms

(2) Multiple-station alarms

(3) Household fire alarm system (includes a security/fire system with smoke alarms or smoke detectors)

It is encouraged that the highest level of protection be used where possible. For example, if multiple-station alarms are added to an occupancy with compliant single-station alarms, the multiple-station alarms should be installed to replace all of the single-station alarms. Similarly, if a monitored household fire alarm system is added to a house that has compliant multiple-station alarms, monitored smoke alarms or smoke detectors should be installed to replace the multiple-station alarms or be installed to provide the same required coverage.

~~The responsiveness of ionization- and photoelectric-type smoke alarms depends on a number of factors, including the type of fire (smoldering, flaming), the chemistry of materials involved in the fire, and the properties of the resulting smoke. Several fire safety organizations recommend that a consumer utilize both ionization and photoelectric technologies in their home smoke alarm systems to permit the longest potential escape times for nonspecific fire situations. This will not preclude the development of new technology with equivalent performance.~~

Statement of Problem and Substantiation for Public Input

We are proposing to delete many of the references to specific technology with the next edition of NFPA 72 to align with the new testing criteria that are included in the 8th edition of UL 217 and the 7th Edition of UL 268. End product safety standards such as UL 217 and UL 268 are technology independent. In addition, the performance requirements for detecting fire types and cooking nuisance mitigation are independent of technology. Calling out technology requirements in an installation standard does not consider innovative technology solutions that could otherwise be used to comply with these end product standards. As an example, UL cooking nuisance research demonstrated that independent of smoke detection technology, and placement, all smoke alarms produced an alarm signal during normal cooking. Placement of the alarms in reference to the broiling hamburger cooking source and by 1.5% OBS/ft, resulted in an increased or delayed response, based on location, in almost all smoke alarms with many different types of technologies being tested.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 583-NFPA 72-2019 [Section No. 29.11.3.4]	
Public Input No. 584-NFPA 72-2019 [Section No. A.17.7.5.4.2]	
Public Input No. 587-NFPA 72-2019 [Section No. A.17.7.5.4.2]	
Public Input No. 588-NFPA 72-2019 [Section No. A.29.1.1]	
Public Input No. 590-NFPA 72-2019 [Section No. A.29.11.3.4(4)]	
Public Input No. 592-NFPA 72-2019 [Section No. A.29.11.3.4(7)]	
Public Input No. 593-NFPA 72-2019 [Section No. B.4.7.1]	
Public Input No. 594-NFPA 72-2019 [Section No. B.4.7.3]	

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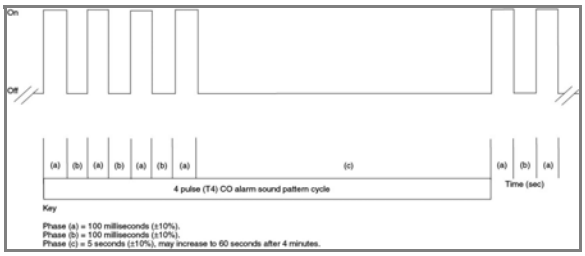
Public Input No. 275-NFPA 72-2019 [Section No. A.29.5.3]

A.29.5.3

The four pulse temporal pattern is illustrated in Figure A.29.5.3.

Figure A.29.5.3 Four Pulse Temporal Pattern.

Replace the text of the figure to read as follows: Phase (c) = 5 seconds (+-10%), should be permitted to increase to 60 seconds after 4 minutes.



Statement of Problem and Substantiation for Public Input

Committee task group recommendation based on correlating committee comment.

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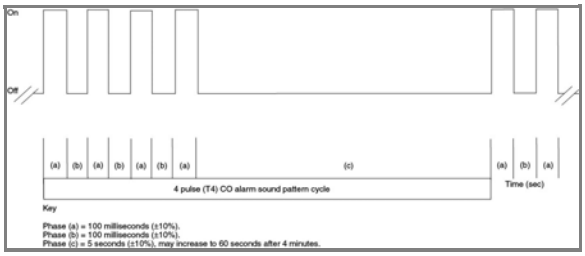
Committee: SIG-HOU

Public Input No. 289-NFPA 72-2019 [Section No. A.29.5.3]

A.29.5.3 — 4 __

The four pulse temporal pattern is illustrated in Figure A.29.5.~~3~~ 4 .

Figure A.29.5.3 ~~Four~~ 4 Four Pulse Temporal Pattern.



Statement of Problem and Substantiation for Public Input

Changed based on PI 284.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 284-NFPA 72-2019 [Section No. 29.5]	

Submitter Information Verification

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Committee: SIG-HOU

Public Input No. 176-NFPA 72-2019 [New Section after A.29.5.10.1]

TITLE OF NEW CONTENT

A.29.5.10 The standard audible alarm signal used in all smoke alarms for the past 30 years utilized a typical frequency of 3Khz. Peer-reviewed research has concluded the wakening effectiveness of the 520 Hz low-frequency signal is superior to standard 3 KHz audible alarm signal for awakening high-risk segments of the population such as such as people over 65, people who are hard of hearing, school age children and people who are alcohol impaired. Therefore, smoke alarms are now required to produce the 520 Hz low-frequency audible alarm signal in areas intended for sleeping. If smoke alarms that are capable of producing the low-frequency audible alarm signal are not available, smoke detectors arranged to function in the same manner as smoke alarms are required. The following product solutions are currently available in the market if the smoke alarm is unable to produce the 520 Hz low-frequency audible alarm signal in sleeping rooms:

(1) Smoke detectors with integral sounder bases

(2) Fire alarm system horns and horn/strobes

The peer-reviewed research was conducted under the auspicious of the Fire Protection Research Foundation (*Optimizing Fire Alarm Notification for High Risk Groups*) as well as the coinciding reports (*Waking Effectiveness of Alarms for Adults Who Are Hard of Hearing* ; and *Waking Effectiveness of Alarms for the Alcohol Impaired*).

Statement of Problem and Substantiation for Public Input

This Public Input (PI) seeks to enhance the waking effectiveness of high risk segments of the population (over 65, people who are hard of hearing, school age children and people who are alcohol impaired) by providing a requirement for the 520 Hz low frequency audible fire alarm signal in all sleeping rooms. The requirement in this PI won't become widely enforced until 2025 or 2026 because the 2022 edition of NFPA 72 will be referenced in the 2024 edition of the ICC and NFPA model codes.

Smoke alarm manufacturers will be working to develop a product that will produce the 520 Hz low-frequency audible alarm signal because the 2021 edition of the International Fire Code will require smoke alarms that are installed in sleeping rooms of new hotels, dormitories and apartment buildings to produce the 520 Hz low-frequency audible alarm signal. Also, the NFPA 101 Residential Committee unanimously approved FR 6886 and FR 6892 that will require smoke alarms that are installed in sleeping rooms to produce the 520 Hz low-frequency audible alarm signal.

Any further delay in implementing a technology that is proven to enhance public life safety needs to be avoided. Peer-reviewed research has concluded the wakening effectiveness of the 520 Hz low-frequency signal is superior to standard 3KHz audible alarm signal for awakening high-risk segments of the population such as such as people over 65, people who are hard of hearing, school age children and people who are alcohol impaired.

Peer-Reviewed Research: Ian R. Thomas and Dorothy Bruck, Waking Effectiveness of Alarms for Adults Who Are Hard of Hearing (Melbourne, Australia: Victoria University), National Fire Protection Association, 2007

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 175-NFPA 72-2019 [Section No. 29.5.10 [Excluding any Sub-Sections]]	
Public Input No. 178-NFPA 72-2019 [Section No. 29.5.10.1]	
Public Input No. 179-NFPA 72-2019 [Section No. A.29.5.10.1]	
Public Input No. 180-NFPA 72-2019 [Section No. A.29.5.10.1(2)]	
Public Input No. 175-NFPA 72-2019 [Section No. 29.5.10 [Excluding any Sub-Sections]]	
Public Input No. 178-NFPA 72-2019 [Section No. 29.5.10.1]	
Public Input No. 179-NFPA 72-2019 [Section No. A.29.5.10.1]	
Public Input No. 180-NFPA 72-2019 [Section No. A.29.5.10.1(2)]	

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Committee: SIG-HOU

Public Input No. 215-NFPA 72-2019 [New Section after A.29.5.10.1]

A.29.5.10

See A.18.4.6.3 for committees intent on what would constitute a sleeping area(s).

Statement of Problem and Substantiation for Public Input

Adding annex material to Section 29.5.10 that would point the user back to Chapter 18 and what has been outlined as what a sleeping area consist of. A PI was also submitted to change "Sleeping rooms" to "Sleeping areas" in Section 29.5.10 to be consistent with Chapter 18 language as well as clarity to the user that where someone could be sleeping is not necessarily a "room" and could be an area within the dwelling unit.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 216-NFPA 72-2019 [Section No. 29.5.10 [Excluding any Sub-Sections]]	
Public Input No. 216-NFPA 72-2019 [Section No. 29.5.10 [Excluding any Sub-Sections]]	

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Committee: SIG-HOU

Public Input No. 179-NFPA 72-2019 [Section No. A.29.5.10.1]

~~**A.29.5.10.1** —~~

~~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

This Public Input (PI) seeks to enhance the waking effectiveness of high risk segments of the population (over 65, people who are hard of hearing, school age children and people who are alcohol impaired) by providing a requirement for the 520 Hz low frequency audible fire alarm signal in all sleeping rooms. The requirement in this PI won't become widely enforced until 2025 or 2026 because the 2022 edition of NFPA 72 will be referenced in the 2024 edition of the ICC and NFPA model codes.

Smoke alarm manufacturers will be working to develop a product that will produce the 520 Hz low-frequency audible alarm signal because the 2021 edition of the International Fire Code will require smoke alarms that are installed in sleeping rooms of new hotels, dormitories and apartment buildings to produce the 520 Hz low-frequency audible alarm signal. Also, the NFPA 101 Residential Committee unanimously approved FR 6886 and FR 6892 that will require smoke alarms that are installed in sleeping rooms to produce the 520 Hz low-frequency audible alarm signal.

Any further delay in implementing a technology that is proven to enhance public life safety needs to be avoided. Peer-reviewed research has concluded the wakening effectiveness of the 520 Hz low-frequency signal is superior to standard 3KHz audible alarm signal for awakening high-risk segments of the population such as such as people over 65, people who are hard of hearing, school age children and people who are alcohol impaired.

Peer-Reviewed Research: Ian R. Thomas and Dorothy Bruck, Waking Effectiveness of Alarms for Adults Who Are Hard of Hearing (Melbourne, Australia: Victoria University), National Fire Protection Association, 2007

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 175-NFPA 72-2019 [Section No. 29.5.10 [Excluding any Sub-Sections]]	
Public Input No. 176-NFPA 72-2019 [New Section after A.29.5.10.1]	
Public Input No. 178-NFPA 72-2019 [Section No. 29.5.10.1]	
Public Input No. 180-NFPA 72-2019 [Section No. A.29.5.10.1(2)]	
Public Input No. 175-NFPA 72-2019 [Section No. 29.5.10 [Excluding any Sub-Sections]]	
Public Input No. 176-NFPA 72-2019 [New Section after A.29.5.10.1]	
Public Input No. 178-NFPA 72-2019 [Section No. 29.5.10.1]	
Public Input No. 180-NFPA 72-2019 [Section No. A.29.5.10.1(2)]	

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Committee: SIG-HOU

Public Input No. 180-NFPA 72-2019 [Section No. A.29.5.10.1(2)]

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.

Statement of Problem and Substantiation for Public Input

This Public Input (PI) seeks to enhance the waking effectiveness of high risk segments of the population (over 65, people who are hard of hearing, school age children and people who are alcohol impaired) by providing a requirement for the 520 Hz low frequency audible fire alarm signal in all sleeping rooms. The requirement in this PI won't become widely enforced until 2025 or 2026 because the 2022 edition of NFPA 72 will be referenced in the 2024 edition of the ICC and NFPA model codes.

Smoke alarm manufacturers will be working to develop a product that will produce the 520 Hz low-frequency audible alarm signal because the 2021 edition of the International Fire Code will require smoke alarms that are installed in sleeping rooms of new hotels, dormitories and apartment buildings to produce the 520 Hz low-frequency audible alarm signal. Also, the NFPA 101 Residential Committee unanimously approved FR 6886 and FR 6892 that will require smoke alarms that are installed in sleeping rooms to produce the 520 Hz low-frequency audible alarm signal.

Any further delay in implementing a technology that is proven to enhance public life safety needs to be avoided. Peer-reviewed research has concluded the wakening effectiveness of the 520 Hz low-frequency signal is superior to standard 3KHz audible alarm signal for awakening high-risk segments of the population such as such as people over 65, people who are hard of hearing, school age children and people who are alcohol impaired.

Peer-Reviewed Research: Ian R. Thomas and Dorothy Bruck, Waking Effectiveness of Alarms for Adults Who Are Hard of Hearing (Melbourne, Australia: Victoria University), National Fire Protection Association, 2007

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 175-NFPA 72-2019 [Section No. 29.5.10 [Excluding any Sub-Sections]]	
Public Input No. 176-NFPA 72-2019 [New Section after A.29.5.10.1]	
Public Input No. 178-NFPA 72-2019 [Section No. 29.5.10.1]	
Public Input No. 179-NFPA 72-2019 [Section No. A.29.5.10.1]	
Public Input No. 175-NFPA 72-2019 [Section No. 29.5.10 [Excluding any Sub-Sections]]	
Public Input No. 176-NFPA 72-2019 [New Section after A.29.5.10.1]	
Public Input No. 178-NFPA 72-2019 [Section No. 29.5.10.1]	
Public Input No. 179-NFPA 72-2019 [Section No. A.29.5.10.1]	

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Committee: SIG-HOU

Public Input No. 281-NFPA 72-2019 [Section No. A.29.8.1.1(2)]

A.29.8.1.1(2)

The term *dwelling unit* is defined in 3.3.83 and applies to one- and two-family dwellings and dwelling units of apartment buildings (including condominiums). The distance referenced for the location of the required smoke alarm should be measured on a horizontal projection of the ceiling and along the path of egress travel by an occupant.

Statement of Problem and Substantiation for Public Input

Committee task group recommendation based on correlating committee comment. The term "path of travel" may have caused confusion and explanation seemed necessary.

Submitter Information Verification

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Committee: SIG-HOU

Public Input No. 282-NFPA 72-2019 [Section No. A.29.8.1.3.1]

A.29.8.1.3.1

The distance referenced for the spacing of smoke alarms should be measured on a horizontal projection of the ceiling. One smoke alarm per 500 ft^2 (46 m^2) is evaluated by dividing the total interior square footage of floor area per level by 500 ft^2 (46 m^2). The requirements do not preclude the installation of smoke alarms on walls in accordance with 29.11.3.3. Some building configurations, such as division of rooms and open foyers or great rooms, dictate that alarms be located so that they do not cover distinctly separate 500 ft^2 (46 m^2) areas but rather provide overlapping coverage relative to this spacing requirement.

Statement of Problem and Substantiation for Public Input

Committee task group recommendation based on correlating committee comment. The term "travel distance" may have caused confusion and explanation seemed necessary.

Submitter Information Verification

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Committee: SIG-HOU

Public Input No. 312-NFPA 72-2019 [Section No. A.29.10.8.2.1]

~~A.29.10.8.2.1~~ —

For RF waves traveling along the earth's surface, the signal power loss (in dB), L_p, can be calculated using the following plane-earth propagation loss model:

$$L_p = 10\log\left[\frac{D_p^4}{h_{TX}^2 h_{RX}^2}\right] \quad \text{[A.29.10.8.2.}$$

where D_p represents the distance between the transmitter and receiver and h_{TX} and h_{RX} are the heights of the transmitter and receiver, respectively, above the earth.

The plane earth propagation model is a practical simplification and requires that $h_{TX}, h_{RX} << D_p$. It reflects the average expected attenuation due to distance of the RF carrier for a stationary set of radios with an essentially clear line of sight. It predicts maximum communications range only in the UHF band (300 MHz to 3 GHz) and is not dependent on frequency.

Inside a building, the model can be expanded to determine the total path loss, L_T, which includes the plane earth loss, L_p (equation A.29.10.8.2.1a), and the loss due to the building materials in the propagation path, L_b, as follows:

$$L_T = 10\log\left[\frac{D_p^4}{(h_{TX}h_{RX})^2}\right] + L_b \quad \text{[A.29.10.8.2.}$$

If an equivalent open area test distance, D_{EOAT}, is defined as follows:

$$L_T = 10\log\left[\frac{D_{EOAT}^4}{(h_{TX}h_{RX})^2}\right] \quad \text{[A.29.10.8.2.1}$$

then D_{EOAT} can be shown to be:

$$D_{EOAT} = 10^{\frac{-L_T}{40}}\sqrt{h_{TX}}\sqrt{h_{RX}} = D_p \cdot 10^{\frac{L_b}{40}} \quad \text{[A.29.10.8.2.1}$$

The D_{EOAT} function is used to calculate a test distance required to verify the functional range of wireless alarm products. As noted above in the right side of equation A.29.10.8.2.1d, the function represents two factors — one that describes the attenuation of a radio frequency signal due to plane earth propagation path loss (D_p), and one that describes the dwelling material losses (L_b) in the signal's propagation path. It is the combination of dwelling loss and propagation path loss that is used in the calculation of the test distance D_{EOAT}. The losses are expressed in dB, and the unit for distances is meter.

In reviewing average home sizes, a reliable (indoor) communication of 100 ft (30.5 m) is adequate for a majority of dwellings, based on an average house size of 2200 ft^2 (204 m^2) [National Association of Home Builders]. Construction materials of a home (walls and floors) can attenuate an RF signal, with the RF signal being attenuated more at higher frequencies [Stone, 1997]. Communication specifications for devices of this type are typically specified as open field (no obstructions) test distances and not in terms of attenuation. Therefore, the standard specifies a minimum open area test distance, D_{EOAT}, that the RF products must communicate. This distance is equal to 100 ft (30.5 m) (the longest straight line distance within a majority of homes) plus an additional distance that is equivalent to the attenuation of four walls and two floors (the most straight line obstructions in a majority of homes). The additional distance varies depending on the operating frequency of the product. Formulas for calculating D_{EOAT} are included below, along with examples for a number of different frequencies. These criteria are expected to yield reliable indoor communications at 100 ft (30.5 m) when used inside a majority of dwellings.

The building attenuation factor, L_b, represents the maximum attenuation value of typical floors and walls within a majority of structures. L_b is calculated using attenuation values of different materials. The following method is used to calculate L_b. The building materials attenuation coefficients specified in this application are taken from Stone, 1997. Other sources of appropriate building material attenuation coefficients can be used; however, testing organizations should apply values consistently for all products tested.

L_1 = frequency-dependent attenuation value for $\frac{1}{2}$ in. (13 mm) drywall

L_2 = frequency-dependent attenuation value for 1 $\frac{1}{2}$ in. (38 mm) structural lumber

~~L_3 = frequency-dependent attenuation value for 3/4 in. (19 mm) plywood~~

~~L_4 = frequency-dependent attenuation value for 1/2 in. (13 mm) glass/tile floor~~

~~L_w = Attenuation value of a wall = 2 × L_1 + L_2~~

~~L_f = Attenuation value of a floor = L_1 + L_2 + L_3 + L_4~~

~~Assuming four walls and two floors,~~

$$L_b = 4 \times L_w + 2 \times L_f$$ ~~[A.29.10.8.2.~~

~~The source for the equation in 29.10.8.2.1 is Stone, W. "Electromagnetic Attenuation in Construction Materials," National Institute of Standards and Technology, NISTIR 6055, 1997.~~

Statement of Problem and Substantiation for Public Input

Public Input was submitted to revise 29.10.8.2. In conjunction with that change, the information in Annex A 29.10.8.2.1 would not be needed. The most reproducible and repeatable method for transmitter/receiver testing is completed through unobstructed air. This is already stated in 29.10.8.2.1, so the equations only add complexity and confusion for manufacturers, installers, and the AHJ. To confirm connectivity, equipment shall be tested upon completion of installation to confirm connectivity of each device.

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 311-NFPA 72-2019 [Section No. 29.10.8.2.1]	Chapter 29 revision for low-power wireless testing
Public Input No. 313-NFPA 72-2019 [Section No. I.1.2.16.9]	

Submitter Information Verification

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Submittal Date: Wed Jun 19 19:42:33 EDT 2019
Committee: SIG-HOU

Public Input No. 590-NFPA 72-2019 [Section No. A.29.11.3.4(4)]

A.29.11.3.4(4)

As per annex material located in A.29.8.1, it is not normally recommended that smoke alarms or smoke detectors be placed in kitchen spaces. This section of the code provides guidelines for safe installation if a need exists to install a smoke alarm or smoke detector in a residential kitchen space or cooking area.

Within this Code section, a fixed cooking appliance is any appliance that is intended to be permanently connected electrically to the wiring system or the fuel source. A stationary cooking appliance is any appliance that is intended to be fastened in place or located in a dedicated space, and is connected to the supply circuit or fuel source.

~~Smoke alarms and smoke detectors that are currently available to consumers are susceptible to particles released into the air during normal cooking procedures. If smoke alarms and smoke detectors are placed too close to the area where the cooking source originates, a high level of nuisance alarms can occur. Frequent nuisance alarms can result in an occupant disabling the smoke alarm or smoke detector.~~

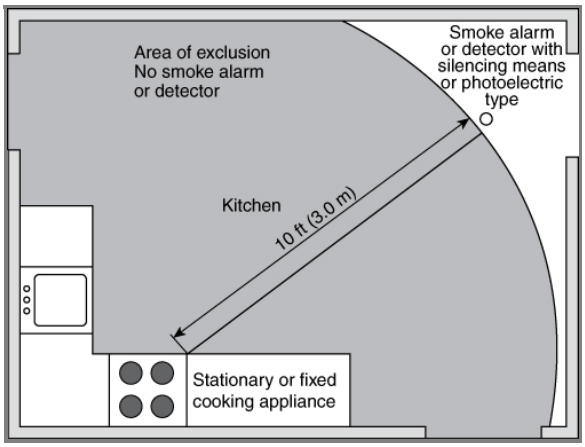
Nuisance alarm studies show that commercially available residential smoke alarms and smoke detectors are susceptible to nuisance alarms when installed too close to cooking appliances. Combined with the performance for cooking nuisance in UL 217 and UL 268. As the horizontal distance between the smoke alarm or smoke detectors and the cooking appliance increases, the frequency of nuisance alarms decreases. ~~Smoke alarms or smoke detectors that use ionization smoke detection have been shown to be more susceptible to cooking nuisance alarms than those that use photoelectric smoke detection when the alarms or detectors are installed within 10 ft (3.0 m) along a horizontal smoke travel path from a cooking appliance. Smoke alarms or smoke detectors that use photoelectric smoke detection produce nuisance alarms when installed less than 10 ft (3.0 m) from a cooking appliance, though to a lesser degree.~~

~~The occurrence of the higher frequency of nuisance alarms observed in smoke alarms or smoke detectors that use ionization detection have been documented in the fire research data. Due to the differences in technology between ionization detection and photoelectric detection, the sensitivity typically used for ionization detection is much higher than that used for photoelectric detection. This sensitivity difference is a result of each type of the detection being required to satisfy UL 217 performance tests. Removing detection technology from consideration, the frequency of nuisance alarms is solely due to the sensitivity of the detection method used. Thus, both ionization and photoelectric detector technologies will produce nuisance alarms due to cooking, but currently available smoke alarms and smoke detectors that use ionization detection typically produce more cooking-related nuisance alarms.~~

~~The higher sensitivities of currently available smoke alarms and smoke detectors that use ionization detection do provide a benefit at the expense of a potentially higher rate of cooking-related nuisance alarms. Research has demonstrated that ionization detection will typically respond faster than photoelectric detection to flaming fires, providing earlier warning to occupants that might allow for quicker intervention or faster egress. In general, the installation of smoke alarms or smoke detectors that use ionization detection will result in increased fire safety at the risk of a higher frequency of nuisance alarms. The installation of smoke alarms or smoke detectors that use photoelectric detection will result in reduced fire safety for flaming fires and a reduced risk of nuisance alarms. Based on the trade-off between faster response to fires and the frequency of nuisance alarms, detectors that utilize both technologies (i.e., ionization, photoelectric, and a combination) are allowed to be installed between 10 ft (3.0 m) and 20 ft (6.1 m) along a horizontal flow path from a standard or fixed cooking appliance if the specific detector is equipped with an alarm silencing means or is of the photoelectric-type.~~

Nuisance alarm studies provide data on cooking nuisances that emanate from both fixed cooking appliances and stationary cooking appliances (e.g., stove, oven) as well as portable cooking appliances (e.g., toaster). Based on these studies, which demonstrate the potential of all cooking appliances to generate nuisance sources, a zone of exclusion has been specified surrounding each stationary or fixed cooking appliance. The purpose of this zone is to limit the installation of smoke alarms and detectors in areas where stationary, fixed, or portable cooking appliances will be located within the residential kitchen space such that potential nuisance alarms are minimized. The size of the zone of exclusion is specified to attempt to take into account the unknown and transitory locations of portable cooking appliances. This zone of exclusion is determined by measuring a 10 ft (3.0 m) radial distance from the closest edge of a stationary or fixed cooking appliance. The zone of exclusion is not intended to pass through walls or doorways. Figure A.29.11.3.4(4)(a) provides an example of the zone of exclusion in a generalized residential kitchen.

Figure A.29.11.3.4(4)(a) Example of Zone of Exclusion (gray area) Within Typical Residential Kitchen.



If other areas of this code require that a smoke alarm or smoke detector be placed within a horizontal flow path distance between 10 ft (3.0 m) and 20 ft (6.1 m) from a stationary or fixed cooking appliance, the following method should be used to determine the distance~~, and only photoelectric detection or smoke alarms/detectors with alarm silencing means can be installed in this area~~ .

To install a smoke alarm or detector between 10 ft (3.0 m) and 20 ft (6.1 m) from the cooking appliance, an installer must first determine the 10 ft (3.0 m) area of exclusion. Once the area of exclusion is determined, an installer must then determine the horizontal flow distance. This is the horizontal distance along the ceiling from the closest edge of the cooking appliance to the smoke alarm or detector. The horizontal distance can consist of line segments due to impediments, such as interior partitions. Once an impediment is met, the measurement of the distance will then continue along the new horizontal path segment until the distance requirement is met or another impediment is encountered. Figure A.29.11.3.4(4)(b) provides an example for placement outside a kitchen in a nearby hallway. Figure A.29.11.3.4(4)(c) provides another example of appropriate placement outside of a kitchen in an adjacent room.

Figure A.29.11.3.4(4)(b) Example of Smoke Alarm or Smoke Detector Placement Between 10 ft (3.0 m) and 20 ft (6.1 m) Away in Hallway from Center of Stationary or Fixed Cooking Appliance.

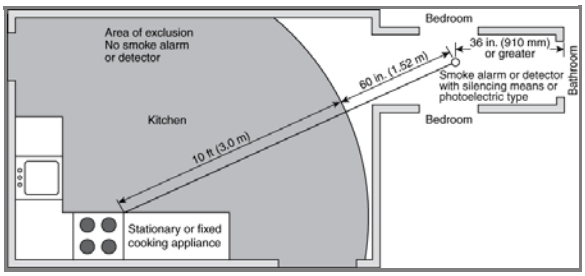
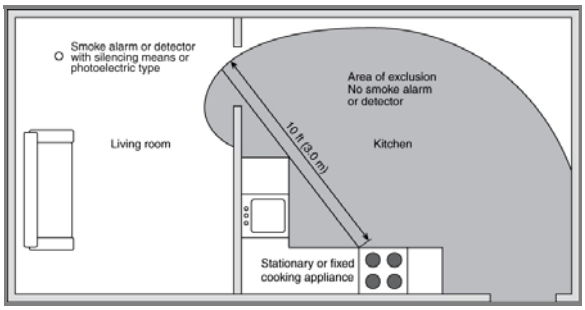


Figure A.29.11.3.4(4)(c) Example of Smoke Alarm or Smoke Detector Placement Between 10 ft (3.0 m) and 20 ft (6.1 m) Away in Hallway from Center of Stationary or Fixed Cooking Appliance.

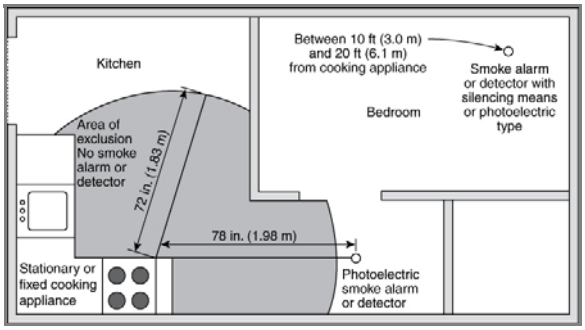


At a horizontal flow path distance of greater than 20 ft (6.1 m), any type of smoke alarm or smoke detector can be installed.

In rare cases, a residential dwelling can be of such size and configuration that an area of exclusion of 10 ft (3.0 m) from a stationary or fixed cooking appliance excludes the placement of a smoke alarm or smoke detector required by other areas of this Code. In these cases, a smoke alarm or smoke detector ~~using photoelectric detection~~ can be installed at least 72 in. (1.83 m) from the fixed or stationary cooking appliance. Figure A.29.11.3.4(4)(d) provides an example of this situation in practice where a smoke alarm or smoke detector is required outside of the sleeping area, but the space is in close proximity to the kitchen space.

In response to the above noted nuisance alarm studies, the 8th edition of UL 217 and the 7th edition of UL 268 have added a new performance test to help reduce nuisance alarms from normal cooking. This end product performance and Listing requirement align with Section 29.11.3.4(6) of this code. Smoke alarms incorporating the multi-criteria smoke detection technology and complying with these UL standards shall be Listed "for resistance to common nuisance sources from cooking" and are suitable for installation at distances from cooking appliances outlined in this code.

Figure A.29.11.3.4(4)(d) Example of Exception Placement of Photoelectric Smoke Alarm or Smoke Detector at 72 in. (1.83 m) from Stationary or Fixed Cooking Appliance.



Additional Proposed Changes

File Name	Description	Approved
UL_Smoke_Characterazation_Study.pdf		

Statement of Problem and Substantiation for Public Input

In addition to the new cooking nuisance requirements specified in UL 217 and UL 268, there's merit to requiring a minimum installation distance from the cooking source for all smoke detection technologies. This will continue to help reduce cooking nuisance alarms, but the data combined with the new cooking nuisance requirements do not support "silencing" features for some technologies and not others. Nor does it support the placement of some technologies to be closer to the cooking nuisance source while others must be placed at a further distance. Proximity to the cooking source and the use of "silencing" features for one technology vs another must be reconsidered.

In addition, technology specific requirements should
be removed and/or reconsidered to minimize installation confusion. For additional details related to the characterization of cooking nuisance sources, reference UL's research document titled:

"Characterization of Smoke Alarm Nuisance Sources from Cooking Scenarios"

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 583-NFPA 72-2019 [Section No. 29.11.3.4]	
Public Input No. 584-NFPA 72-2019 [Section No. A.17.7.5.4.2]	
Public Input No. 587-NFPA 72-2019 [Section No. A.17.7.5.4.2]	
Public Input No. 588-NFPA 72-2019 [Section No. A.29.1.1]	
Public Input No. 589-NFPA 72-2019 [Section No. A.29.3.3]	
Public Input No. 592-NFPA 72-2019 [Section No. A.29.11.3.4(7)]	
Public Input No. 593-NFPA 72-2019 [Section No. B.4.7.1]	
Public Input No. 594-NFPA 72-2019 [Section No. B.4.7.3]	

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Submittal Date: Wed Jun 26 14:24:40 EDT 2019
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Public Input No. 592-NFPA 72-2019 [Section No. A.29.11.3.4(7)]

A.29.11.3.4(7)

Studies indicate that smoke alarms and smoke detectors ~~that use ionization detection, photoelectric detection, or a combination of ionization and photoelectric detection, are~~ that are susceptible to nuisance alarms caused by steam. Little research has been done on the comparative response of these types of detection to steam. ~~Steam~~ These steam particles, in general, are visible, reflect light easily, and are typically produced in a size range ~~that would be more likely to actuate a photoelectric sensor. Thus~~ that are within the detection range for all smoke alarms. Thus , it is required that smoke alarms and smoke detectors be installed greater than 36 in. (910 mm) from the bathroom door where possible. Increasing the distance between the smoke alarm or smoke detector and the bathroom door can reduce the frequency of nuisance alarms from bathroom steam. Frequent nuisance alarms can result in the occupant disabling the smoke alarm. Each incremental increase in separation, up to 10 ft (3.0 m), between the bathroom door and the smoke alarm or smoke detector is expected to reduce the frequency of nuisance alarms.

Additional Proposed Changes

File Name	Description	Approved
UL_Smoke_Characterazation_Study.pdf		

Statement of Problem and Substantiation for Public Input

In addition to the new cooking nuisance requirements specified in UL 217 and UL 268, there's merit to requiring a minimum installation distance from the cooking source for all smoke detection technologies. This will continue to help reduce cooking nuisance alarms, but the data combined with the new cooking nuisance requirements do not support "silencing" features for some technologies and not others. Nor does it support the placement of some technologies to be closer to the cooking nuisance source while others must be placed at a further distance. Proximity to the cooking source and the use of "silencing" features for one technology vs another must be reconsidered.

In addition, technology specific requirements should
be removed and/or reconsidered to minimize installation confusion. For additional details related to the characterization of cooking nuisance sources, reference UL's research document titled:

"Characterization of Smoke Alarm Nuisance Sources from Cooking Scenarios"

Related Public Inputs for This Document

Related Input	Relationship
Public Input No. 584-NFPA 72-2019 [Section No. A.17.7.5.4.2]	
Public Input No. 587-NFPA 72-2019 [Section No. A.17.7.5.4.2]	
Public Input No. 588-NFPA 72-2019 [Section No. A.29.1.1]	
Public Input No. 590-NFPA 72-2019 [Section No. A.29.11.3.4(4)]	
Public Input No. 589-NFPA 72-2019 [Section No. A.29.3.3]	

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