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Memorandum

To: **Technical Committee on Emergency Communication Systems**
From: **Jenny Depew** *Administrator, Technical Projects*
Subject: **Working Draft of Committee Meeting Output**
Date: **September 5, 2019**

WORKING DRAFT OF COMMITTEE MEETING OUTPUT

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

Document: NFPA 72
Revision Cycle: A2021
Meeting Date(s): July 25-26, 2019
Committee Activity: Input Stage

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

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

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

First Revision No. 5325-NFPA 72-2019 [Detail]

24.10* ~~Area of Refuge (Area of Rescue Assistance)~~ Rescue Assistance Two-Way Emergency Communications Systems~~,~~ for ~~Stairway Communications Systems,~~ Stairwell and Elevator Landing/Lobby Areas of Refuge ~~Communications Systems, and Occupant Evacuation Elevator Lobby Communications Systems~~ .

Submitter Information Verification

Committee: SIG-ECS
Submittal Date: Fri Jul 26 10:58:54 EDT 2019

Committee Statement

Committee Statement: These systems are being used for more than just area of refuge. The section should address and does address all of these systems and therefore the title of the section should be changed. The Technical Committee changes the title to Rescue Assistance Two-Way Emergency Communications Systems for Stairwell and Elevator Landing/Lobby Areas of Refuge.

Response Message: FR-5325-NFPA 72-2019

Public Input No. 227-NFPA 72-2019 [Section No. 24.10]

SUBJECT TO REVISION - NOT FOR PUBLICATION
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WORKING DRAFT OF COMMITTEE MEETING OUTPUT - NFPA 72 - July 2019
Subject to Revision - Not for Publication

First Revision No. 5299-NFPA 72-2019 [Section No. 3.3.90]

3.3.90– * _ Emergency Communications System.

A system for the protection of life by indicating the existence of an emergency situation and communicating information necessary to facilitate an appropriate response and action. (SIG-ECS)

A. 3.3.90

The definition is not intended to include the Emergency Services Communications Systems as addressed in NFPA 1221, nor to address the Public Switched Telephone Network . _

3.3.90. 1 One-Way Emergency Communications System.

One-way emergency communications systems are intended to broadcast information, in an emergency, to people in one or more specified indoor or outdoor areas. It is intended that emergency messages be conveyed either by audible, visual, or textual means, or any combination thereof. (SIG-ECS)

3.3.90.1.1 Distributed Recipient Mass Notification System (DRMNS).

A distributed recipient mass notification system is a system meant to communicate directly to targeted individuals and groups that might not be in a contiguous area. (SIG-ECS)

3.3.90.1.2 In-Building Fire Emergency Voice/Alarm Communications System.

Dedicated manual or automatic equipment for originating and distributing voice instructions, as well as alert and evacuation signals pertaining to a fire emergency, to the occupants of a building. (SIG-ECS)

3.3.90.1.3 In-Building Mass Notification System.

A system used to provide information and instructions to people in a building(s) or other space using intelligible voice communications and including visual signals, text, graphics, tactile, or other communication methods. (SIG-ECS)

3.3.90.1.4 Wide-Area Mass Notification System.

Wide-area mass notification systems are generally installed to provide real-time information to outdoor areas and could have the capability to communicate with other notification systems provided for a campus, military base, municipality, or similar single or multiple contiguous areas. (SIG-ECS)

3.3.90.2 Two-Way Emergency Communications System.

Two-way emergency communications systems are divided into two categories, those systems that are anticipated to be used by building occupants and those systems that are to be used by fire fighters, police, and other emergency services personnel. Two-way emergency communications systems are used to both exchange information and to communicate information such as, but not limited to, instructions, acknowledgement of receipt of messages, condition of local environment, and condition of persons, and to give assurance that help is on the way. (SIG-ECS)

SUBJECT TO COMMITTEE ACTION - NOT FOR PUBLICATION

Submitter Information Verification

Committee: SIG-ECS
Submittal Date: Fri Jul 26 09:03:22 EDT 2019

Committee Statement

Committee Statement: It is important when defining such terms as "Emergency Communications Systems." The term "communications" has very broad meaning and is used in many NFPA documents, including NFPA 110, 101, 72 and 1221 in several differing contexts. For example, "communications" in differing documents might reference any of the following:

Emergency communications system – Like an in-building fire phone system

Occupant notification – like fire alarm or voice notification system which advises to evacuate or take cover

Public safety communications system – Like 911

Fire fighter radio communications system

Communications between alarm devices or between alarms and fire panels and monitoring stations

Communications between the protected premise and monitoring stations

Communications between monitoring stations and emergency facilities

This causes some confusion, specifically when AHJs attempt to determine how requirements might be applied to telecommunications as a whole.

While NFPA 72 is one of the best documents with respect to how it clearly references Emergency Communications Systems, there is still room for improvement with the general definition. To make information clear and consistently applied, it would best to add specificity wherever the term "communications" is used.

Response Message: FR-5299-NFPA 72-2019

Public Input No. 42-NFPA 72-2019 [New Section after A.3.3.87]

SUBJECT TO REVISION - NOT FOR PUBLICATION - FOR COMMITTEE USE ONLY

First Revision No. 5189-NFPA 72-2019 [Section No. 3.3.198]

3.3.198 Pathway Survivability.

The ability of any conductor, ~~optic~~ optical fiber, radio carrier, or other means for transmitting system information to remain operational during fire conditions. (SIG-ECS)

Submitter Information Verification

Committee: SIG-ECS
Submittal Date: Thu Jul 25 08:29:50 EDT 2019

Committee Statement

Committee Statement: The Technical Committee standardize the term "fiber-optic" as an adjective or "optical fiber" as a noun based on Merriam-Webster.com. Merriam-Webster, 2019. Web. 25 June 2019
Response Message: FR-5189-NFPA 72-2019

Public Input No. 470-NFPA 72-2019 [Section No. 3.3.198]

SUBJECT TO REVISION - NOT FOR PUBLICATION
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First Revision No. 5313-NFPA 72-2019 [Section No. 24.3.1.2]

24.3.1.2*

Where listed loudspeakers do not achieve the intelligibility requirements of the Code for a notification zone, ~~nonlisted~~ non-listed loudspeakers shall be permitted to be installed to achieve the intelligibility for that notification zone.

Submitter Information Verification

Committee: SIG-ECS
Submittal Date: Fri Jul 26 09:48:43 EDT 2019

Committee Statement

Committee Statement: The word nonlisted is a typo. The Technical Committee changes it to non-listed.
Response Message: FR-5313-NFPA 72-2019

SUBJECT TO REVISION - NOT FOR PUBLICATION
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First Revision No. 5226-NFPA 72-2019 [New Section after 24.3.5.4.1]

24.3.6 Surge Protection Device.

Where components or systems are not listed to UL 864 or UL 2572 and are connected to any UL 864 or UL 2572 equipment, the following shall apply:

24.3.6.1

Control equipment used as part of the mass notification system shall incorporate a listed Surge Protective Device(s) (SPD).

24.3.6.2

Ancillary equipment/devices used as part of the mass notification system shall incorporate a listed Surge Protective Device (SPD).

24.3.6.3

Any metallic connection on an UL 864 and UL 2572 system intended for connection to external/ancillary systems or devices shall be required to include transient protection that has been evaluated to ensure performance.

24.3.6.4

All interconnected low voltage metallic conductors shall be provided with a listed Surge Protection Device(s) (SPD).

24.3.6.5

All interconnected line-voltage conductors shall be provided with listed Surge Protection Device(s) (SPD).

24.3.6.6

All ac mains circuit(s) that are providing power shall be provided with a listed Surge Protection Device(s) (SPD).

24.3.6.7

Connection to the life safety system shall be isolated so that it is not impaired due to failure of the ancillary equipment.

SUBJECT TO REVISION - FOR COMMITTEE USE ONLY - NOT FOR PUBLICATION

Submitter Information Verification

Committee: SIG-ECS
Submittal Date: Thu Jul 25 13:19:44 EDT 2019

Committee Statement

Committee Statement: Emergency communication systems (ECS) include many systems/devices (i.e. LED signs, TV's, etc.) that are not listed to these standards. It is important to make sure these devices critical to the overall ECS system are fully protected during a power surge. For instance, in airports when there is a power surge and the television/monitors are not surge protected, those in harm's way are vulnerable. Rather than getting the time sensitive information, the devices need to reboot; thus, they are not available when absolutely necessary. In an effort to avoid situations like this one, it is vitally important to have the emergency communications system designer attest to the fact that the device(s) has been evaluated with an appropriate listed surge protection device.

Response Message: FR-5226-NFPA 72-2019

First Revision No. 5339-NFPA 72-2019 [Sections 24.3.6.1, 24.3.6.2]

Sections 24.3.6.1, 24.3.6.2

24.3.6.1*

Messages shall be developed for each scenario ~~developed~~ identified in the emergency response plan.

A.24.3.6.1

See Annex G.

~~**24.3.6.2** *~~ –

~~A.~~

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~~24.3.6.2.~~

24.3.6.

~~2~~

~~See Annex G .~~

1. 1 _

Based on the emergency response plan, emergency messages shall have content that provides information and instructions to people in the building, area, site, or installation.

24.3.6.

~~2~~

1 .2 _

The proposed verbiage of prerecorded automatic emergency messages shall be identified on the permit plans and be approved by the authority having jurisdiction prior to their programming into the emergency voice communications system.

24.3.6.

~~2~~

1 .3 _

As a minimum, the proposed verbiage of prerecorded messages shall be in the official spoken language acceptable to the authority having jurisdiction.

24.3.6.

~~2~~

1 .4 _

Additional prerecorded message(s) shall be permitted as approved by the authority having jurisdiction.

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Submitter Information Verification

Committee: SIG-ECS
Submittal Date: Tue Aug 06 13:21:38 EDT 2019

Committee Statement

Committee Statement: The Technical Committee editorially revises the text. Revised numbering and deleted an unneeded paragraph reference.

Response Message: FR-5339-NFPA 72-2019

First Revision No. 5208-NFPA 72-2019 [Section No. 24.3.10]

24.3.10* Control Unit Listing for Mass Notification Systems.

Control units installed as part of a mass notification system shall be in compliance with this Code and ~~at least one of the following applicable standards:~~

- ~~ANSI/UL 864, *Standard for Control Units and Accessories for Fire Alarm Systems*~~
  ~~ANSI/UL 2572,~~ UL 2572, *Mass Notification Systems , or equivalent* .

Supplemental Information

File Name	Description	Approved
A.24.3.10_Revised_Annex_Language.docx	See attached document for revisions to A.24.3.10. For staff use	

Submitter Information Verification

Committee: SIG-ECS
Submittal Date: Thu Jul 25 10:03:32 EDT 2019

Committee Statement

Committee Statement: UL 2572 has specific requirements on how mass notification systems need to function. UL 864 does not have these requirements. The industry has matured and many manufacturers have equipment listed to UL 2572 and therefore NFPA 72 needs to remove all other listings other than 2572. In addition, modifications have been made to the annex language as well.

Response Message: FR-5208-NFPA 72-2019

Public Input No. 616-NFPA 72-2019 [Global Input]

Public Input No. 373-NFPA 72-2019 [Section No. A.24.3.10]

Public Input No. 244-NFPA 72-2019 [Section No. 24.3.10]

Public Input No. 372-NFPA 72-2019 [Section No. 24.3.10]

SUBJECT TO REVISION - FOR COMMITTEE USE ONLY - NOT FOR PUBLICATION

First Revision No. 5213-NFPA 72-2019 [Section No. 24.3.12.1]

24.3.12.1*

Each application of a mass notification system shall be specific to the nature and anticipated risks of each facility for which it is designed.

A.24.3.12.1

Although this chapter outlines some specific criteria and/or limitations, each application should be based on recognized performance-based design practices and the emergency response plan developed for the specific facility.

The risk analysis should identify which threats are significant enough that a mass notification system is required for an effective response. Significance of threats should be based on the likelihood of occurrence and the negative consequences if the threat does occur.

Here are the general categories of questions that might be presented to the senior manager responsible for mass notification decisions. The actual questions for each project must be tailored to the area, the building, the campus, and the culture of the user organization. Following is a brief description of potential content within the mass notification event questions:

(1) What is the type of emergency event — that is, is it fire, security, safety, health, environmental, geological, meteorological, utility service disruption, or another type of event?

(2) What is the urgency of the emergency event — that is, does it represent immediate danger, has it already occurred, is it expected to occur soon, is it expected to occur in the future, or is its occurrence unknown?

(3) What is the anticipated or expected severity of the emergency event that is, how will it impact our facility and its functions, is it expected to be extreme, severe, etc.?

(4) What is the certainty of the emergency event that is, is it happening now, is it very likely to occur, is it likely to occur, is it possible that it will occur in the future, is it unlikely to occur, or is its occurrence unknown?

(5) What is the location of the event, or from what direction is the emergency event approaching — that is, has it or will it be approaching from the north, south, east, or west?

(6) What zone or areas should receive the emergency message(s) — that is, is it a floor of a building, multiple floors of a building, the entire building, multiple buildings, a campus of buildings, an entire town or city, an entire state, an entire region of states, or an entire country?

(7) What is the validity of the emergency event — that is, has the emergency event been investigated and/or confirmed?

(8) What instructions should we send to our personnel — that is, should they evacuate the facility, should they shelter-in-place, should they shelter-in-place at a special location, should they proceed to a safe haven area, and other action oriented items?

(9) Are there any special instructions, procedures, or special tasks that we need to remind personnel about or to accomplish — that is, close your office door, open your office door, stay away from windows, do not use elevators, and other information relating to personnel actions?

The questions suggested in items (1) through (9) are offered for consideration, and not all of them might be appropriate for every mass notification system installation. It is important to remember that when an emergency event occurs, the response must be immediate and deliberate. Therefore, there is no time for indecision. So the questions selected to reside in the emergency messaging decision tree illustrated in items (1) through (9) must be straightforward and as simple as possible. They must also be tailored to the specific organization, culture, site, and unique requirements of each local environment.

24.3.12.1.1

When an owner has developed a risk analysis in accordance with 24.3.12, such risk analysis shall be permitted to be used as a baseline in preparing the risk analysis for new or renovated facilities that are similar in nature.

SUBJECT TO REVISION - NOT FOR PUBLICATION

Submitter Information Verification

Committee: SIG-ECS
Submittal Date: Thu Jul 25 10:26:29 EDT 2019

Committee Statement

Committee Statement: The guidance requested by the submitter has been provided in the annex rather than in the body.
Response Message: FR-5213-NFPA 72-2019

Public Input No. 642-NFPA 72-2019 [Section No. 24.3.12.1 [Excluding any Sub-Sections]]

SUBJECT TO REVISION - NOT FOR PUBLICATION
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First Revision No. 5216-NFPA 72-2019 [New Section after 24.3.12.10]

24.3.12.11*

Where identified by the risk analysis or required by federal, state, or local regulation or the AHJ, systems shall be designed, installed and maintained in accordance with cyber security standards.

A.24.3.12.11

Cyber security standards include the following:

(1) ANSI/ISA-62443 Series

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

(3) UL 2900 Series

(4) Performance standards accepted by the stakeholders

Submitter Information Verification

Committee: SIG-ECS

Submittal Date: Thu Jul 25 10:33:08 EDT 2019

Committee Statement

Committee Statement: Interfacing integrated systems [as outlined in NFPA 4] into the fire alarm system can increase the vulnerability of security breaches against unauthorised access or attack by individuals, groups, companies, and governments onto or from any of these integrated systems, including the fire alarm system. By evaluating these systems through the standards proposed, there is a level of confidence in the securing of these systems to prevent these attacks.

As an example, Target was breached through the HVAC system. The danger lies in the fact that everything can be hacked in these types of buildings. Outsiders can take control of all connected systems to turn off lights, trigger a fire alarm and cause panic, add external users to access controls, interfere with the HVAC system to knock staff off their guard and even disrupt machines, or to deactivate the CCTV (video surveillance) system to allow an intruder to enter, and the list goes on. For these reasons, the Technical Committee includes Cyber Security Design into the risk analysis to avoid potential security breaches to the system.

Response Message: FR-5216-NFPA 72-2019

Public Input No. 600-NFPA 72-2019 [New Section after 24.3.12.10]

SUBJECT TO REVISION - NOT FOR PUBLICATION - FOR COMMITTEE USE ONLY

First Revision No. 5217-NFPA 72-2019 [Section No. 24.3.12.10]

24.3.12.10*

The risk analysis shall be used as the basis for development of the ~~ECS~~ MNS provisions of the facility emergency response plan.

A.24.3.12.10 _

When a code requires a Risk Analysis for Mass Notification Systems to determine the need for an MNS, the stakeholders can determine the extent and types of coverage and systems needed. It can be found that the minimum code requirements already include what is needed for the risk of a project, and that nothing additional is needed. An example could be a small school that has an EVAC system, that system might be sufficient for emergency communications based on the risk analysis prepared by the stakeholders and approved by the AHJ.

Submitter Information Verification

Committee: SIG-ECS

Submittal Date: Thu Jul 25 11:02:03 EDT 2019

Committee Statement

Committee Statement: NFPA 1, NFPA 101, and building codes are requiring a Risk Analysis to determine the need for a mass notification system and the codes reference NFPA 72 for the criteria of the risk analysis. There is no “option” for the stakeholders, design professional, owner, or AHJ to determine that an MNS system is not required based upon the risk analysis. This language is intended to accomplish this mission. The Technical Committee could not find within 72 where a risk analysis for the MNS system overall is required.

Response Message: FR-5217-NFPA 72-2019

Public Input No. 486-NFPA 72-2019 [Section No. 24.3.12.10]

SUBJECT TO REVISION - NOT FOR PUBLICATION - FOR COMMITTEE USE ONLY

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

First Revision No. 5221-NFPA 72-2019 [Section No. 24.3.14.4.1 [Excluding any Sub-Sections]]

For systems employing relocation or partial evacuation, a Level ~~2~~ 1 or Level ~~3~~ 2 pathway survivability shall be required, unless otherwise permitted in 24.3.14.4.1.1 ~~or~~ through 24.3.14.4.1.~~2~~ 3 .

Submitter Information Verification

Committee: SIG-ECS
Submittal Date: Thu Jul 25 11:32:36 EDT 2019

Committee Statement

Committee Statement: New buildings with fire sprinklers and passive fire protection have a very good fire safety record with very few high rise/commercial building fire deaths. The confusion with enforcement and the extreme costs/lack of materials to cost effectively provide 2 hour ratings, justify that we look hard that new buildings with fire sprinklers and all pathways in conduit provide a reasonable level of life safety. For existing buildings without fire sprinklers then 2 hour rated pathways could be justifiable. Another area that should be looked into is the evacuation time planned for the building, one may find that most can be evacuated within one hour.

Response Message: FR-5221-NFPA 72-2019

Public Input No. 545-NFPA 72-2019 [Section No. 24.3.14.4.1 [Excluding any Sub-Sections]]

SUBJECT - FOR COMMITTEE USE ONLY - NOT FOR PUBLICATION

First Revision No. 5270-NFPA 72-2019 [New Section after 24.3.14.4.1.2]

24.3.14.4.1.3

Pathway survivability Level 4 shall consist of pathways in buildings that are fully protected by an automatic sprinkler system in accordance with NFPA 13, and automatic smoke detection in areas where the vertical or horizontal backbone is installed and one or more of the following:

(1) 1-hour fire-rated fire-resistive cable

(2) 1-hour fire-rated cable system [electrical circuit protective system(s)]

(3) 1-hour fire-rated enclosure or protected area

(4) Performance alternatives approved by the authority having jurisdiction

Submitter Information Verification

Committee: SIG-ECS

Submittal Date: Thu Jul 25 16:37:38 EDT 2019

Committee Statement

Committee Statement: Level 4 provides an alternate cost effective application that provides life safety and sets the path for fire life safety to advance in modern buildings. A Task Group has been formed to review the current survivability requirements and suggest revisions.

Response Message: FR-5270-NFPA 72-2019

FOR COMMITTEE USE ONLY
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First Revision No. 5240-NFPA 72-2019 [Section No. 24.3.14.10]

~~**24.3.14.10** –~~

~~Elevator emergency communications systems shall have a pathway survivability of Level 0, Level 1, Level 2, or Level 3.~~

Submitter Information Verification

Committee: SIG-ECS

Submittal Date: Thu Jul 25 14:50:33 EDT 2019

Committee Statement

Committee Statement: This section should be deleted since the "Elevator emergency communications system" was removed from Section 24.3.7.2 and was placed in the annex. This ELEVATOR communication system is the 2-way communications system installed inside elevator cars and is specified by the ASME A17.1 code. It is installed inside elevator cars and serviced by elevator personnel and could be monitored by elevator call centers. It has nothing to do with the other building 2-way ECS specified in Section 24.3.7.2. (This is why this system was removed from the body of the Code in the 2019 edition).

NFPA 72 should not specify requirements for a system which is defined and specified by the ASME A17.1 code and therefore, the Technical Committee deletes this paragraph.

Response Message: FR-5240-NFPA 72-2019

Public Input No. 189-NFPA 72-2019 [Section No. 24.3.14.10]

SUBJECT TO REVISION - FOR COMMITTEE USE ONLY - NOT FOR PUBLICATION

First Revision No. 5242-NFPA 72-2019 [Section No. 24.4.2.1]

24.4.2.1 – * .

Unless otherwise permitted by 24.4.8, evacuation messages shall be preceded and followed by a minimum of two cycles of the ~~emergency evacuation~~ emergency signal specified in 18.4.2 or 18.4.3 .

A.24.4.2.1 .

Where an evacuation message is being provided, the Temporal 3 signal specified in 18.4.2 should be provided unless otherwise dictated by the emergency response plan or AHJ . This is regardless as to whether the cause of the evacuation is fire, carbon monoxide (CO), gas leak, bomb threat, or any other emergency situation requiring evacuation of a building.

Submitter Information Verification

Committee: SIG-ECS
Submittal Date: Thu Jul 25 14:57:27 EDT 2019

Committee Statement

Committee Statement: The reference is needed for instances where carbon monoxide detectors are included in the system. The Technical Committee adds Annex text for further clarification.
Response Message: FR-5242-NFPA 72-2019

Public Input No. 78-NFPA 72-2019 [Section No. 24.4.2.1]

Public Input No. 333-NFPA 72-2019 [New Section after A.24.4]

SUBJECT TO FOR COMMITTEE USE ONLY REVISION - NOT FOR PUBLICATION

First Revision No. 5253-NFPA 72-2019 [New Section after 24.4.8.3.1]

24.4.8.3.2*

When the message is recorded, it shall be periodically repeated, until silenced or reset by emergency personnel.

A.24.4.8.3.2

Only first responders or other trained authorized emergency personnel should be able to intentionally and manually silence or reset the automatic pre-recorded message sequence. This is required to ensure the safe evacuation or relocation of all occupants regardless of the time it takes to complete this task. It should not be permitted to allow for an automatic termination of the alarm since the actual time for relocation and evacuation during real fire emergencies is never known due to potential unpredicted scenarios. The alert status of visual appliances should be maintained. However, since the duration of the alarm is indeterminate, audible alerts and messaging that are periodically suspended can contribute to an improved response by the occupants. Suspending the audible portion of the alarm can support a better community response to the instructions, especially in the case where the abled bodied are attempting to aid the infirmed or emotionally challenged.

Approved alternative fire alarm notification schemes, such as a sequence that contains only a fixed number of repetitions of the pre-recorded messages and associated alert tones, or as indicated in 24.4.8.3.2, should be permitted as long as the occupants are effectively notified and are provided instructions in a timely and safe manner in accordance with the emergency response plan.

Research from the National Research Council of Canada: Occupant Behaviour and Evacuation found "In public buildings, such as airport terminals or sport centres, occupant training is not practical; for these, much of the responsibility for safety will rest with staff. Consequently, staff training is paramount. Occupants are very likely to look for staff members to obtain information; they are regarded as knowledgeable, they are expected to know the situation, the best course of action and the closest exit. Whether heard on a loudspeaker or seen in uniform or wearing a name tag, staff are likely to be listened to."

The National Council on Disability published Effective Emergency Management: Making Improvements for Communities and People with Disabilities Aug.12, 2009, which finds: "People with disabilities should not be viewed as one more special interest group that drains resources from the common pool. Accommodating this large group often translates into being better equipped to serve all people. Anyone, at any moment, can incur a disability, particularly during emergencies. (Kailes and Enders 2006, p. 13)".

Further, Shields, Boyce, and Silcock (1997) note that "staff trained in emergency evacuation should provide guidance to people who are evacuating public facilities. Familiar and trusted staff can alert a significant portion of the public in such instances and ensure an efficient evacuation". On the basis of census results, Morrow (1999, p. 5) argues that a “sizable segment” of any community’s population will need additional assistance during evacuation.

24.4.8.3.3*

The periodic interval between the subsequent message sequences shall be a minimum of three minutes.

A.24.4.8.3.3

Fire related emergency relocation instructions and non-evacuation messages are repeated a minimum of three times. For pre-recorded messages, the actual number of times the message sequence plays is indeterminate, and the interval between each sequence playing is not defined by code, but rather intended to be defined in the emergency response plan. Research shows (see Annex G: Guidelines for Emergency Communication Strategies for Buildings and Campuses) that messages should be repeated at intervals, not consecutively. In determining the interval, consider the following:

(1) Too long between message sequences could be misunderstood by occupants that the emergency has been resolved.

(2) Too long between message sequences could not sufficiently communicate the sense of urgency that is intended.

(3) Too little time between message sequences could impair the ability of occupants to comply with instructions particularly for occupants that need assistance.

(4) Too little time between message sequences could make it difficult for occupants to mark a change in the message contents if partial evacuation or relocation instructions are changed and re-issued.

SUBJECT TO CHANGE UNTIL LOCKED FOR PUBLICATION

(5) Upon the loss of primary power, secondary power is required to support continuous notification for only 15 minutes. This time may be extended based on the period of repetition of automatic messages. Too little time between message sequences could exhaust power reserves before emergency first responder personnel arrive, compromising their ability to manually transmit additional live evacuation or relocation messages.

Submitter Information Verification

Committee: SIG-ECS

Submittal Date: Thu Jul 25 15:33:06 EDT 2019

Committee Statement

Committee Statement: There was significant debate during the 2019 code cycle regarding the merits of continuous repetition of audible messaging during fire related partial evacuation and/or relocation. Continuous verbal messaging, repeating the same instructions over and over without a break, is considered by some to be the safest approach. Not letting up for even an instant, until a fire response official can attend the site, evaluate the risks, and then manually silence the audible messaging has been positioned as what should be the default procedure across the nation. However, there is too much that can go wrong with this approach to be considered the default position taken by this Code. Some of the reasons are spelled out in related annex public inputs. But the fundamental problem with a barrage of continuous messaging is the impairment created for effective interpersonal communications between the occupants (including staff) that may be assisting a confused, impaired, or disabled individual in following the instructions being provided. It has been argued on the floor of the NFPA conference that emergency procedure cannot cater to the minority. This attitude is specifically disallowed by the ADA where, by law one must provide emergency response plans that are inclusive of people with disabilities.

Additionally, Effective Emergency Management: Making Improvements for Communities and People with Disabilities, published by the National Council on Disability in Aug.12, 2009, concludes: "People with disabilities are often forgotten during the response phase of a disaster. Historically, our society has approached people with disabilities by implying they need to take on “extra” personal responsibility to avoid the consequences of disaster rather than by addressing the built environment and social responsibility in an effort to create a safer setting for everyone. When people with disabilities are remembered, they are often grouped into one homogeneous population and provided with instructions that are not appropriately communicated or that are impossible for everyone to follow. "

It is our responsibility to respect the rights of all people, whether young children, or people physically, sensory, cognitively, or emotionally impaired, and to expect that emergency response plans are being created to consider the existence of all people of all abilities.

Yet in the argument for continuous notification some suggest convincingly that the existing code, in only requiring the message sequence to be repeated three times, does not go far enough. They argue that the scope of this requirement is small, and this section only applies to fire related emergencies. Where in reality, a fire alarm activation is not exclusively used only in instances of fire. This series of public inputs addresses those concerns in a balance way with the support of research referenced in the Annex to establish an informed basis for the creation of inclusive emergency response plans.

Response Message: FR-5253-NFPA 72-2019

Public Input No. 391-NFPA 72-2019 [New Section after A.24.4.8]

Public Input No. 390-NFPA 72-2019 [New Section after 24.4.8.3.1]

SUBJECT TO REVISION BY COMMITTEE ACTION ONLY
NOT FOR PUBLICATION

First Revision No. 5257-NFPA 72-2019 [Section No. 24.4.8.3.1]

24.4.8.3.1– *

The sequence [the alert tone followed by the message(s)] shall be repeated at least three times to inform and direct occupants in the signaling zone where the alarm initiation originated, as well as other signaling zones in accordance with the building fire safety plan.

A.24.4.8.3.1

Section 5.2.4.2 of NIST Technical Note 1779, *General Guidance on Emergency Communication Strategies for Buildings* (Kuligowski, 2013), recommends emergency messaging repetition. It also recommends that emergency messaging be repeated at intervals, rather then consecutively. "The second (or third message), provided some interval of time later, may catch a different population who were either busy or distracted during the time period when the first warning message was issued." See also G.2.2.1(11) of this code. Section 24.4.8.3.1 requires that EVAC messages used for fire emergency relocation or partial evacuation be repeated at least three times. Therefore, EVAC systems that transmit digitally stored audio messages are to be configured to meet these requirements. First responders and other individuals required to make live fire–related relocation or partial evacuation messages must also be trained to repeat the entire message sequence, including the alert tone, at least three times. The interval for repeating the messages should be established in the emergency response plan.

Submitter Information Verification

Committee: SIG-ECS
Submittal Date: Thu Jul 25 15:50:02 EDT 2019

Committee Statement

Committee Statement: The Technical Committee adds annex text for clarification.
Response Message: FR-5257-NFPA 72-2019

Public Input No. 300-NFPA 72-2019 [New Section after A.24.8]
Public Input No. 299-NFPA 72-2019 [Section No. 24.4.8.3.1]

SUBMITTED TO COMMITTEE USE ONLY
SUBJECT TO REVISION - NOT FOR PUBLICATION

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

First Revision No. 5320-NFPA 72-2019 [Section No. 24.4.8.4]

24.4.8.4 *

Where the system is used to transmit partial evacuation instructions, the alert tone specified in 24.4.2.1 followed by a message (or messages where multi-channel capability is used) shall be provided.

A.24.4.8.4

Where a partial evacuation message is being provided, the Temporal 3 signal specified in 18.4.2 should be provided unless otherwise dictated by the emergency response plan or AHJ. This is regardless as to whether the cause of the evacuation is fire, carbon monoxide (CO), gas leak, bomb threat, or any other emergency situation requiring partial evacuation of a building.

SUBJECT TO REVISION - NOT FOR PUBLICATION - FOR COMMITTEE USE ONLY

Submitter Information Verification

Committee: SIG-ECS
Submittal Date: Fri Jul 26 10:21:54 EDT 2019

Committee Statement

Committee Statement: At the request of a Correlating Committee Task Group, this change seeks to clarify that the evacuation signal shall be the national standard Temporal 3 signal described in 18.4.2. This is regardless of the nature of the emergency requiring the partial evacuation of the building. The Temporal 3 tone will get the attention of the majority of occupants (with the rest alerted by visual notification appliances) and the voice message used will indicate the need to evacuate. The general public does not recognize the difference between Temporal 3 and Temporal 4 tones and would not differ their response to the evacuation signal based on the tone used. The intent of 24.4.8.4 is to use the national standard evacuation tone, followed by the appropriate voice message, regardless of the nature of the emergency situation. Partial evacuation means full evacuation of a selected portion of the building (i.e., NOT relocation) and while the voice message used can vary, the evacuation tone does not have to. The language used in the new Annex material would still allow an individual emergency response plan or AHJ to dictate a special or unique pre- or post-tone if required for some other specific reason.

This change is to eliminate the confusion where partial evacuation due to a CO alarm should require a Temporal 4 pre- and post-tone. The use of this tone in a building ECS provides little to no benefit when the requirement is to evacuate a portion the building.

Response Message: FR-5320-NFPA 72-2019

Public Input No. 334-NFPA 72-2019 [New Section after A.24.4.8]

First Revision No. 5259-NFPA 72-2019 [Section No. 24.4.8.5.2]

24.4.8.5.2

~~Manually activated loudspeakers shall be permitted in exit stair enclosures, exit passageways, and elevators in buildings that have emergency voice/alarm communications systems in accordance with Section~~ Where required by other governing laws, codes, or standards; loudspeakers shall be provided in locations specified in 24.4.8.5 and shall conform to Section 24.4.

Submitter Information Verification

Committee: SIG-ECS

Submittal Date: Thu Jul 25 15:59:54 EDT 2019

Committee Statement

Committee Statement: There is no need to indicate: "Manually activated loudspeakers" in this section since Section 24.4.8.5 already indicates these loudspeakers are "for manual paging only".

Also, these manual paging speakers are required by the IFC and IBC (EVACS section 907.5.2.1 - OEE and 907.5.2.2.) and therefore NFPA 72 should not have permissive language.

Response Message: FR-5259-NFPA 72-2019

Public Input No. 327-NFPA 72-2019 [Section No. 24.4.8.5.2]

SUBJECT TO FOR COMMITTEE USE ONLY REVISION - NOT FOR PUBLICATION

First Revision No. 5260-NFPA 72-2019 [Section No. 24.5.9.3]

24.5.9.3

Where no listed device exists for the detection required by the emergency response plan, ~~nonlisted~~ non-listed devices shall be permitted to be used if their failure will not impair the operation of the mass notification system.

Submitter Information Verification

Committee: SIG-ECS
Submittal Date: Thu Jul 25 16:04:45 EDT 2019

Committee Statement

Committee Statement: The word nonlisted is a typo. The Technical Committee changes it to non-listed.
Response Message: FR-5260-NFPA 72-2019

Public Input No. 163-NFPA 72-2019 [Section No. 24.5.9.3]

SUBJECT TO REVISION - NOT FOR PUBLICATION - FOR COMMITTEE USE ONLY

First Revision No. 5261-NFPA 72-2019 [Section No. 24.5.11.5]

24.5.11.5

When the ACU is integrated with the building fire alarm control unit to form one combined system that performs both functions, the system shall meet the secondary (standby) power requirements of this chapter.

Submitter Information Verification

Committee: SIG-ECS

Submittal Date: Thu Jul 25 16:05:19 EDT 2019

Committee Statement

Committee Statement: "Standby power" is not a defined term, and while used extensively in the form proposed here "secondary (standby) power" in tables, for Chapter 14 Inspection, Testing, and Maintenance, and elsewhere, the term "standby power" is not used in Chapter 10. It is only used in reference to locations (i.e., standby power rooms in 24.8.12), and standby power status indicators (24.11.1.2), and several places in Annex A, and in reference to NFPA 110 & 111.

Response Message: FR-5261-NFPA 72-2019

Public Input No. 375-NFPA 72-2019 [Section No. 24.5.11.5]

SUBJECT TO REVISION - FOR COMMITTEE USE ONLY - NOT FOR PUBLICATION

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

First Revision No. 5314-NFPA 72-2019 [Section No. 24.5.16.1]

24.5.16.1

Where audible notification is provided, mass notification systems shall also provide visual notification information to serve the deaf or hard of hearing ~~impaired~~ and for high-noise areas.

Submitter Information Verification

Committee: SIG-ECS
Submittal Date: Fri Jul 26 09:50:29 EDT 2019

Committee Statement

Committee Statement: The Technical Committee editorially revises the text.
Response Message: FR-5314-NFPA 72-2019

SUBJECT TO REVISION - NOT FOR PUBLICATION FOR COMMITTEE USE ONLY

First Revision No. 5315-NFPA 72-2019 [Section No. 24.5.17.3]

24.5.17.3

Visual notification appliances used in combination systems where the same visual notification appliance is used for both mass notification and fire notification shall comply with the following:

(1) Be clear or nominal white, meeting the listing requirements of ~~ANSI/UL 1971~~ UL 1638 , *Standard for Visible Signaling Devices for ~~the Hearing Impaired~~ Fire Alarm and Signaling Systems, including accessories, or equivalent*

(2) Have no marking or be marked with the word “ALERT” stamped or imprinted on the appliance

(3) Be visible to the public

Submitter Information Verification

Committee: SIG-ECS
Submittal Date: Fri Jul 26 09:52:26 EDT 2019

Committee Statement

Committee Statement: The Technical Committee updates the reference and title.
Response Message: FR-5315-NFPA 72-2019

SUBJECT TO REVISION - NOT FOR PUBLICATION
FOR COMMITTEE USE ONLY

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

First Revision No. 5318-NFPA 72-2019 [Section No. 24.5.17.8]

24.5.17.8

Where ~~colored~~ visual notification appliances are used solely for mass notification, they shall be listed to an applicable standard such as ANSI/UL 1638, *Visible Signaling Devices for Fire Alarm and Signaling Systems, Including Accessories*.

Submitter Information Verification

Committee: SIG-ECS
Submittal Date: Fri Jul 26 10:01:30 EDT 2019

Committee Statement

Committee Statement: The Technical Committee editorially revises the text.
Response Message: FR-5318-NFPA 72-2019

SUBJECT TO REVISION - NOT FOR PUBLICATION FOR COMMITTEE USE ONLY

First Revision No. 5317-NFPA 72-2019 [Section No. 24.5.17.9]

~~**24.5.17.9** –~~

~~Visual notification appliances with nominal white light output that are listed to ANSI/UL 1971, *Standard for Signaling Devices for the Hearing Impaired* , and visual notification appliances with other than nominal white light output that are listed to ANSI/UL 1638, *Visible Signaling Devices for Fire Alarm and Signaling Systems, Including Accessories* , shall be considered as meeting the intent of this Code.~~

Submitter Information Verification

Committee: SIG-ECS
Submittal Date: Fri Jul 26 09:56:02 EDT 2019

Committee Statement

Committee Statement: The Technical Committee deletes the text as this is already covered in previous sections.
Response Message: FR-5317-NFPA 72-2019

SUBJECT TO FOR COMMITTEE USE ONLY REVISION - NOT FOR PUBLICATION

First Revision No. 5273-NFPA 72-2019 [Section No. 24.6.11 [Excluding any Sub-Sections]]

Interfaces between wide-area mass notification systems and in-building mass notification systems, other alert and notification systems, regional mass notification systems, and off-~~site~~ premises interfaces shall have a standard interface method (such as an audio line–level output and multiple relay contacts) or supply the necessary communications protocols to provide interoperability and a secure communications link.

Submitter Information Verification

Committee: SIG-ECS
Submittal Date: Thu Jul 25 16:50:21 EDT 2019

Committee Statement

Committee Statement: Off-site is not the correct term. The term used throughout NFPA 72 is "off-premises."
Response Message: FR-5273-NFPA 72-2019

Public Input No. 232-NFPA 72-2019 [Section No. 24.6.11 [Excluding any Sub-Sections]]

SUBJECT FOR COMMITTEE USE ONLY
SUBJECT TO REVISION - NOT FOR PUBLICATION

First Revision No. 5275-NFPA 72-2019 [Section No. 24.9.1]

~~**24.9.1** – Non-interference.~~

~~**24.9.1.1** –~~

~~No amplification system capable of operating on frequencies or causing interference on frequencies assigned to the jurisdiction by the FCC shall be installed without prior coordination and approval of the authority having jurisdiction.~~

~~**24.9.1.2** –~~

~~The building manager/owner shall suspend and correct other equipment installations that degrade the performance of the public safety radio system or public safety radio enhancement system.~~

Submitter Information Verification

Committee: SIG-ECS

Submittal Date: Thu Jul 25 16:53:01 EDT 2019

Committee Statement

Committee Statement: The Technical Committee deletes the balance of code language to avoid confusion and to have the designers, stakeholders and authority having jurisdiction go to NFPA 1221 for all requirements for Emergency Radio Enhancement Systems. These systems are not a part of the Building Fire Alarm System, monitoring is as outlined in NFPA 1221.

Response Message: FR-5275-NFPA 72-2019

Public Input No. 305-NFPA 72-2019 [Section No. 24.9.1]

SUBJECT TO REVISION - FOR COMMITTEE USE ONLY - NOT FOR PUBLICATION

First Revision No. 5276-NFPA 72-2019 [New Section after 24.9.2]

24.10.1
Systems used for Area of Refuge (Area of Rescue Assistance) Emergency Communications Systems, Stairway Communications Systems, Elevator Landing Communications Systems, and Occupant Evacuation Elevator Lobby Communications Systems shall be listed to UL 2525, *Standard for Rescue Assistance Two-Way Emergency Communication Systems for Stairwell and Elevator Landing/Lobby Areas of Refug* e, or equivalent.

Submitter Information Verification

Committee: SIG-ECS
Submittal Date: Thu Jul 25 16:56:11 EDT 2019

Committee Statement

Committee Statement: NFPA 72 required these systems to monitor for integrity (supervision) and UL created a new Standard to allow products to be listed. This same process was used for MNS and UL 2572. This language directs the user to ensure that these systems conform to the new UL Standard (or equivalent) and are now aware that the new Standard exists.

Response Message: FR-5276-NFPA 72-2019

Public Input No. 582-NFPA 72-2019 [Section No. 24.10.1]

Public Input No. 152-NFPA 72-2019 [New Section after 24.9.2]

Public Input No. 229-NFPA 72-2019 [Section No. 24.10.1]

SUBJECT TO REVISION - NOT FOR PUBLICATION - FOR COMMITTEE USE ONLY

First Revision No. 5277-NFPA 72-2019 [Section No. 24.9.2]

24.9.2 ~~Installation and Design.~~ *

All in-building two-way radio communications enhancement systems shall be designed, installed, and maintained in accordance with NFPA 1221.

A 24.9.2

The intent of these systems is to provide reliable radio communications for first responders within all buildings in their jurisdiction. The building codes now require these systems in lieu of fire fighter telephones.

NFPA 1221 is followed by 911 centers, dispatchers and municipal radio operations centers. It is the best standard to follow for these systems.

Dedicated fire fighter telephone (FFT) systems were required in high-rise buildings to assist first responder's ability to communicate within the building and to communicate primarily to the fire ground commander located at the fire command center. Although Two-Way Radio Communications Enhancement Systems were allowed during these early years, the radio systems were not as reliable as they are today. In addition, because the FFTs were generally supplied by the manufacturers of the fire alarm systems, designers, AHJs and installers wrongly assumed the FFTs were a part of the life safety system and were required (they were, only in lieu of not installing an emergency responder radio communications system (ERRCS). Today the opposite is true. Since 2009, the building and fire codes require the ERRCS, allowing the FFT only by permission of the AHJ.

Submitter Information Verification

Committee: SIG-ECS

Submittal Date: Thu Jul 25 17:04:26 EDT 2019

Committee Statement

Committee Statement: This new annex material is intended to provide additional guidance to the designers, installers, stakeholders and authority having jurisdiction that these systems fall under the scope of NFPA 1221. They are an important tool for first responders.

Response Message: FR-5277-NFPA 72-2019

Public Input No. 306-NFPA 72-2019 [New Section after 24.9.2]

SUBMITTED TO COMMITTEE USE ONLY
SUBJECT TO REVISION - NOT FOR PUBLICATION

First Revision No. 5289-NFPA 72-2019 [New Section after 24.10.2.1]

24.10.2.2

Area of refuge systems shall be classifired as one of three types of systems.

1. Type 1 - Stand alone area of refuge that is constantly attended.
2. Type 2 - System premises area of refuge this is monitoered off-premises.
3. Type 3 - Networked area of refuge systems on a premises that are managed locally.

Submitter Information Verification

Committee: SIG-ECS

Submittal Date: Fri Jul 26 08:27:38 EDT 2019

Committee Statement

Committee Statement: When working through how these systems will be used and listed the need for multiple types of systems or classifying systems differently is needed. The functionality required in a local system will be different than that of a networked or a system that connects off-premises. NFPA 72 needs to define these various types of systems as it does for MNS. Not all mass notification systems function the same, ie., DRMNS, In-building, Outdoor, etc. The same concept is true with area of refuge.

The Technical Committee has developed a Task Group to review these requirements and make ITM recommendations.

Response Message: FR-5289-NFPA 72-2019

Public Input No. 301-NFPA 72-2019 [New Section after 24.10.2.2]

Public Input No. 302-NFPA 72-2019 [New Section after 24.10.2.1]

SUBJECT TO REVISION - NOT FOR PUBLICATION FOR COMMITTEE USE ONLY

First Revision No. 5290-NFPA 72-2019 [Section No. 24.10.2.3]

24.10.2.3*

The constantly attended location shall be located either within the building or at an off-~~site~~ premises monitoring location and shall be approved by the authority having jurisdiction.

Supplemental Information

File Name	Description	Approved
A.24.10.2.3_Revised_Annex_Language.docx	See attached document for revisions to A.24.10.2.3. For staff use	

Submitter Information Verification

Committee: SIG-ECS

Submittal Date: Fri Jul 26 08:35:29 EDT 2019

Committee Statement

Committee Statement: Off-site is not the correct term. The term used throughout NFPA 72 is "off-premises." In addition, modifications have been made to the annex language as well.

Response Message: FR-5290-NFPA 72-2019

Public Input No. 230-NFPA 72-2019 [Section No. 24.10.2.3]

Public Input No. 237-NFPA 72-2019 [Section No. A.24.10.2.3]

SUBJECT TO REVISION - NOT FOR PUBLICATION FOR COMMITTEE USE ONLY

First Revision No. 5292-NFPA 72-2019 [Section No. 24.10.5]

24.10.5*

If the central control point is not constantly attended, the master control unit shall have a timed automatic communications capability to connect with an off-~~site~~ premises constantly attended monitoring location approved by the authority having jurisdiction, where trained personnel can initiate the appropriate response.

Supplemental Information

File Name	Description	Approved
A.24.10.5_Revised_Annex_Language.docx	See attached document for revisions to A.24.10.5. For staff use	

Submitter Information Verification

Committee: SIG-ECS
Submittal Date: Fri Jul 26 08:35:50 EDT 2019

Committee Statement

Committee Statement: Off-site is not the correct term. The term used throughout NFPA 72 is "off-premises." In addition, modifications have been made to the annex language as well.

Response Message: FR-5292-NFPA 72-2019

Public Input No. 238-NFPA 72-2019 [Section No. A.24.10.5]

Public Input No. 233-NFPA 72-2019 [Section No. 24.10.5]

SUBJECT TO REVISION - FOR COMMITTEE USE ONLY - NOT FOR PUBLICATION

First Revision No. 5293-NFPA 72-2019 [Section No. 24.10.6]

24.10.6*

In the event of an off-~~site~~ premise connection, a signal shall be transmitted to the off-~~site~~ premises monitoring location, identifying the specific building prior to initiating the live voice two-way communication.

Supplemental Information

File Name	Description	Approved
A.24.10.6_Revised_Annex_Language.docx	See attached document for revisions to A.24.10.6. For staff use	

Submitter Information Verification

Committee: SIG-ECS

Submittal Date: Fri Jul 26 08:36:24 EDT 2019

Committee Statement

Committee Statement: Off-site is not the correct term. The term used throughout NFPA 72 is "off-premises." In addition, modifications have been made to the annex language as well.

Response Message: FR-5293-NFPA 72-2019

Public Input No. 239-NFPA 72-2019 [Section No. A.24.10.6]

Public Input No. 231-NFPA 72-2019 [Section No. 24.10.6]

SUBJECT TO REVISION - NOT FOR PUBLICATION FOR COMMITTEE USE ONLY

First Revision No. 5294-NFPA 72-2019 [New Section after 24.10.10]

24.10.11 Signage.

24.10.11.1

Directions for the use of the two-way communications system, instructions for summoning assistance via the two-way communications system, and written identification of the location shall be posted adjacent to the two-way communications system.

24.10.11.2

Signage shall comply with the ICC A117.1 requirements for visual characters.

Submitter Information Verification

Committee: SIG-ECS

Submittal Date: Fri Jul 26 08:37:50 EDT 2019

Committee Statement

Committee Statement: The language is pulled from IBC section 1009.8.2. These are the requirements the field is being asked to comply with. The Technical Committee adds requirements to provide guidance to the installers on what AHJs are enforcing.

Response Message: FR-5294-NFPA 72-2019

Public Input No. 243-NFPA 72-2019 [New Section after 24.10.10]

SUBJECT TO REVISION - NOT FOR PUBLICATION - FOR COMMITTEE USE ONLY

First Revision No. 5297-NFPA 72-2019 [New Section after 24.10.11]

24.11* Training for Two-Way Communcations Systems.

Operators of Two-way Communcations Systems shall be properly trained and qualified per 10.5.5 in the operation, handling and disatching of calls.

A.24.11 Training for Two-Way Communications Systems.

If the microphone is to be used by authorized personnel there should be backup personnel who are assigned and trained on the proper usage.

Submitter Information Verification

Committee: SIG-ECS
Submittal Date: Fri Jul 26 08:43:21 EDT 2019

Committee Statement

Committee Statement: The operation of these systems is unique and will require a person that is properly educated on how to receive, dispatch and process these calls. The issue of training becomes even more important when multiple calls are coming into the master unit and how those calls will be handled, priority, stacking etc.

Response Message: FR-5297-NFPA 72-2019

Public Input No. 431-NFPA 72-2019 [New Section after A.24.11]

Public Input No. 428-NFPA 72-2019 [New Section after 24.11]

SUBJECT TO REVISION - FOR COMMITTEE USE ONLY - NOT FOR PUBLICATION

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

First Revision No. 5301-NFPA 72-2019 [Section No. 24.11.1.2]

[See Attached Word Doc 72-2019_Chapter_ 24 _24-11-1-2]

24 .11.1.2

The emergency command center shall contain the following:

(1) The in-building fire emergency voice/alarm communications system equipment including:

(2) Fire alarm system controls

(3) Fire alarm system annunciator

(4) In-building fire emergency voice/alarm communications system controls

(5) Area of refuge (area of rescue assistance) emergency communications systems equipment

(6) Elevator emergency communications systems equipment

(7) Distributed recipient MNS control stations where provided

(8) Tables and chairs to accommodate emergency management staff

(9) Other equipment/information deemed necessary by the facility emergency response plan such as:

(10) Displays indicating the location of the elevators and whether they are operational

(11) Status indicators and controls for air-handling systems

(12) Fire fighter's control panel for smoke control systems

(13) Fire department communications unit

(14) Controls for unlocking stairway doors simultaneously

(15) Security systems

(16) Emergency and standby power status indicators

(17) Telephone for emergency use with controlled access to the public telephone system

(18) Schematic building plans indicating the typical floor plan and detailing the building core, means of egress, fire protection systems, security systems, fire-fighting equipment, and fire department access

(19) Generator supervision devices, manual start, and transfer features

(20) Other monitoring, control, information display, and management systems associated with operation of the ECC

SUBJECT TO REVISION FOR COMMITTEE USE ONLY NOT FOR PUBLICATION

Supplemental Information

File Name	Description	Approved
72-2019_Chapter_24_24-11-1-2.docx	Word Document Clarifies Action on 24.11.1.2--for staff use	

Submitter Information Verification

Committee: SIG-ECS
Submittal Date: Fri Jul 26 09:12:00 EDT 2019

Committee Statement

Committee Statement: Emergency Command Center for Emergency Communications Systems omits a class of ECS: MNS as defined distinctly from in-building fire emergency voice/alarm communications systems (EVACS) in 24.3.7.1 (2): In-building mass notification system (see 24.5). This corrects that

omission.

Response Message: FR-5301-NFPA 72-2019

Public Input No. 374-NFPA 72-2019 [Section No. 24.11.1.2]

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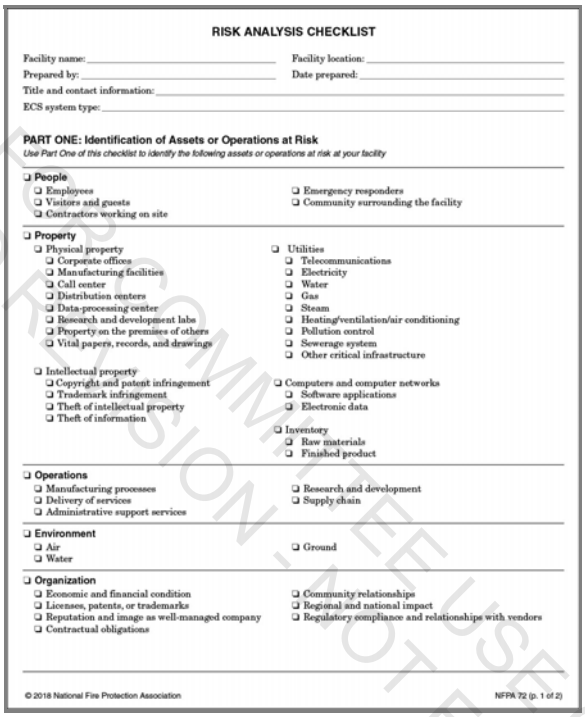
First Revision No. 5300-NFPA 72-2019 [Section No. A.7.3.6]

A.7.3.6

The Risk Analysis Checklist in Figure A.~~7~~ 7 .3.6 is not mandatory, but it can be used to initiate the thought process for identifying hazards in a facility.

In sentence below PART TWO, remove the word "may".

Figure A.7.3.6 Risk Analysis Checklist.



RISK ANALYSIS CHECKLIST

Facility name: _____ Facility location: _____
Prepared by: _____ Date prepared: _____
Title and contact information: _____
ECS system type: _____

PART ONE: Identification of Assets or Operations at Risk
Use Part One of this checklist to identify the following assets or operations at risk at your facility

❑ **People**
- ❑ Employees
- ❑ Visitors and guests
- ❑ Contractors working on site
- ❑ Emergency responders
- ❑ Community surrounding the facility

❑ **Property**
- ❑ Physical property
  - ❑ Corporate offices
  - ❑ Manufacturing facilities
  - ❑ Call center
  - ❑ Distribution centers
  - ❑ Data-processing center
  - ❑ Research and development labs
  - ❑ Property on the premises of others
  - ❑ Vital papers, records, and drawings
- ❑ Utilities
  - ❑ Telecommunications
  - ❑ Electricity
  - ❑ Water
  - ❑ Gas
  - ❑ Steam
  - ❑ Heating/ventilation/air conditioning
  - ❑ Pollution control
  - ❑ Sewerage system
  - ❑ Other critical infrastructure
- ❑ Intellectual property
  - ❑ Copyright and patent infringement
  - ❑ Trademark infringement
  - ❑ Theft of intellectual property
  - ❑ Theft of information
- ❑ Computers and computer networks
  - ❑ Software applications
  - ❑ Electronic data
- ❑ Inventory
  - ❑ Raw materials
  - ❑ Finished product

❑ **Operations**
- ❑ Manufacturing processes
- ❑ Delivery of services
- ❑ Administrative support services
- ❑ Research and development
- ❑ Supply chain

❑ **Environment**
- ❑ Air
- ❑ Water
- ❑ Ground

❑ **Organization**
- ❑ Economic and financial condition
- ❑ Licenses, patents, or trademarks
- ❑ Reputation and image as well-managed company
- ❑ Contractual obligations
- ❑ Community relationships
- ❑ Regional and national impact
- ❑ Regulatory compliance and relationships with vendors

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RISK ANALYSIS CHECKLIST ***(continued)***

PART TWO: Determination of Facility Hazards
Use Part Two of this checklist to determine the potential hazards that may impact your facility.

❑ **Natural Hazards—Geological**
- ❑ Earthquake
- ❑ Tsunami
- ❑ Volcano
- ❑ Landslide, mudslide, subsidence
- ❑ Glacier, iceberg

❑ **Natural Hazards—Meteorological**
- ❑ Flood, flash flood, tidal surge
- ❑ Drought
- ❑ Windstorm, tropical cyclone, hurricane, tornado, water spout, dust/sand storm
- ❑ Extreme temperatures (heat, cold)
- ❑ Lightning strikes
- ❑ Famine
- ❑ Geomagnetic storm
- ❑ Snow, ice, hail, sleet, avalanche

❑ **Natural Hazards—Biological**
- ❑ Diseases (pandemic)
- ❑ Animal or insect infestation or damage

❑ **Human-Caused Accidental Events**
- ❑ Hazardous material (explosive, flammable liquid, flammable gas, flammable solid, oxidizer, poison, radiological, corrosive) spill or release
- ❑ Natural gas leak
- ❑ Nuclear power plant incident
- ❑ Hazmat incident off site
- ❑ Explosion/fire
- ❑ Wildfire (forest, range, urban, wildland, urban interface)
- ❑ Transportation accident (motor vehicle, railroad, watercraft, aircraft pipeline)
- ❑ Building/structure failure or collapse
- ❑ Entrapment
- ❑ Mechanical breakdown
- ❑ Energy/power/utility failure
- ❑ Fuel/resource shortage
- ❑ Air/water pollution, contamination
- ❑ Water control structure/dam/levee failure
- ❑ Communications systems interruptions
- ❑ Financial issues, economic depression, inflation, financial system collapse
- ❑ Misinformation

❑ **Human-Caused Intentional Events**
- ❑ Terrorism (explosive, chemical, biological, radiological, nuclear, cyber)
- ❑ Sabotage or vandalism
- ❑ Civil disturbance, public unrest, mass hysteria, riot
- ❑ Enemy attack, war
- ❑ Insurrection
- ❑ Strike or labor dispute
- ❑ Demonstration
- ❑ Disinformation
- ❑ Criminal activity (vandalism, arson, theft, fraud, embezzlement, data theft)
- ❑ Electromagnetic pulse
- ❑ Physical or information security breach
- ❑ Sniper incident
- ❑ Crime, theft, or robbery
- ❑ Product defect or contamination
- ❑ Harassment
- ❑ Arson
- ❑ Bomb threat
- ❑ Lost person
- ❑ Child abduction
- ❑ Kidnap
- ❑ Extortion
- ❑ Hostage incident
- ❑ Workplace violence

❑ **Technological-Caused Events**
- ❑ Telecommunications
- ❑ Central computer, mainframe, software, or application (internal/external)
- ❑ Energy/power/utility
- ❑ Ancillary support equipment

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SUBJECT TO REVISION - NOT FOR PUBLICATION - COMMITTEE USE ONLY

Submitter Information Verification

Committee: SIG-ECS
Submittal Date: Fri Jul 26 09:10:17 EDT 2019

Committee Statement

Committee Statement: The use of "may" does not comply with the MOS.
Response Message: FR-5300-NFPA 72-2019

Public Input No. 362-NFPA 72-2019 [Section No. A.7.3.6]

SUBJECT TO REVISION - NOT FOR PUBLICATION
FOR COMMITTEE USE ONLY

First Revision No. 5304-NFPA 72-2019 [Section No. A.24.3.12]

A.24.3.12

There are many credible risk assessment methodologies that can be utilized and/or referenced in conducting the risk assessment required in 24.3.12, some of which are listed as follows:

(1) *CARVER — Target Analysis and Vulnerability Assessment Methodology*, Washington, DC: U.S. Department of Defense (see Field Manual 34-36, Special Operation Forces Intelligence and Electronics Warfare Operation, Sept. 30, 1991), www.defense.gov

(2) *General Security Risk Assessment Guidelines*. Alexandria, VA: American Society for Industrial Security International, www.asisonline.org

(3) *NFPA 1600* Quincy, MA: National Fire Protection Association, www.nfpa.org

(4) NFPA 730 Quincy, MA: National Fire Protection Association, www.nfpa.org

(5) *Responsible Care Code*, Washington, DC: American Chemistry Council, www.americanchemistry.com

(6) *Risk and Resilience Management of Water & Wastewater Systems*, Denver, CO: American Water Works Association, www.awwa.org

(7) *VAMCAP® Vulnerability Assessment Methodology for Critical Asset Protection*, Wilmington, DE: SafePlace Corporation, www.safeplace.com

(8) *Vulnerability Assessment Methodologies*, Albuquerque, NM: Sandia National Laboratories, www.sandia.gov

(9) SFPE Engineering Guide to Fire Risk Assessment, www.sfpe.org.

Refer to A.~~7~~ 7 .8.2(1) and Figure A.~~7~~ 7 .3.6 for a risk analysis checklist.

Submitter Information Verification

Committee: SIG-ECS

Submittal Date: Fri Jul 26 09:27:59 EDT 2019

Committee Statement

Committee Statement: The SFPE Engineering Guide to Fire Risk Assessment is another credible resource that can provide guidance for the required risk assessment. Specifically, the SFPE Guide provides information that is focused on fire safety design.

Response Message: FR-5304-NFPA 72-2019

Public Input No. 293-NFPA 72-2019 [Section No. A.24.3.12]

SUPERSEDED FOR COMMITTEE USE ONLY - NOT FOR PUBLICATION

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

First Revision No. 5312-NFPA 72-2019 [Section No. A.24.4.2.2.2]

A.24.4.2.2.2

Generally speaking, in a standard building configuration with normal ceiling height [8 ft to 12 ft (2.4 m to 3.7 m)], normal ceiling construction (e.g., drop acoustical ceiling tiles), standard wall configurations, and finishes and carpeted floors, ceiling-mounted loudspeakers should be installed in all normally occupiable spaces and in corridors spaced at a maximum of twice the ceiling height or as determined by a commercially available computer acoustical/loudspeaker modeling program. Where wall-mounted loudspeakers are used, manufacturer recommendations should be reviewed and/or computer modeling should be employed. One of the goals of loudspeaker placement is to provide the shortest practical distance from the source (loudspeaker) to the recipient (person hearing the signal). In many applications, a combination of wall- and ceiling-mounted loudspeakers might be required. The audibility and intelligibility of the loudspeakers can be impacted by the tap/setting at which the loudspeaker is connected and should meet the audibility requirements of the Code while still having the message intelligible. Connecting to a high setting to meet the audibility requirements of the Code could distort the intelligibility of the signal.

In an ADS that is a non-acoustically challenging area, designing for audibility will typically result in an intelligible system provided minimum loudspeaker guidelines are followed. Areas typically considered to be non-acoustically challenging include traditional office environments, hotel guest rooms, dwelling units, and spaces with carpeting and furnishings.

Special attention must be given to acoustically challenging ADSs. Such areas might incorporate appreciable hard surfaces (e.g., glass, marble, tile, metal, etc) or appreciably high ceilings (e.g., atriums, multiple ceiling heights). These conditions will require more stringent design guidelines to ensure intelligibility (e.g., a closer than normal loudspeaker spacing with lower taps). This can help reduce the effect of excessive reverberation and result in better intelligibility. In extreme cases there could be areas where intelligibility is not attainable, but this can be acceptable if there is an ADS within 30 ft (9.1 m) where the intelligibility of the system is deemed adequate.

In an ADS where the ambient noise level exceeds 85 dB it is acknowledged that intelligibility might not be attainable and, in such a case, an alternate means of notification ~~is~~ will likely be required.

Design guidance is provided in the NEMA Standards Publication SB 50-2008, *Emergency Communications Audio Intelligibility Applications Guide*.

Submitter Information Verification

Committee: SIG-ECS
Submittal Date: Fri Jul 26 09:46:17 EDT 2019

Committee Statement

Committee Statement: This is a grammatical change to improve clarity and intent and in keeping with parameters for Annex language. Only in those instances where intelligibility is not attainable due to the ambient level would additional appliances "likely" be required.

Response Message: FR-5312-NFPA 72-2019

Public Input No. 7-NFPA 72-2018 [Section No. A.24.4.2.2.2]

SUBMITTED FOR COMMITTEE USE ONLY
NOT FOR PUBLICATION

First Revision No. 5305-NFPA 72-2019 [Section No. A.24.7.6]

A.24.7.6

A distributed recipient mass notification system could support multiple server and multiple site configurations to achieve a “hot standby” failover configuration (i.e., no down time in case of failure in a single server), as well as to support higher load scenarios (e.g., more users). This could be accomplished with premises-based systems or hosted configurations.

Backup configuration can either be a net-centric system architecture located behind internet firewalls or hosted off-~~site~~ premises , outside the owner’s internet firewall utilizing a hosted software and hardware configuration operated and maintained by DRMNS provider(s), or incorporate features of both configurations.

Submitter Information Verification

Committee: SIG-ECS
Submittal Date: Fri Jul 26 09:34:41 EDT 2019

Committee Statement

Committee Statement: Off-site is not the correct term. Throughout 72, the term used is "off-premises."
Response Message: FR-5305-NFPA 72-2019

Public Input No. 235-NFPA 72-2019 [Section No. A.24.7.6]

SUBJECT TO REVISION - NOT FOR PUBLICATION - FOR COMMITTEE USE ONLY

First Revision No. 5307-NFPA 72-2019 [Section No. A.24.10]

A.24.10

Generally, an area of refuge (area of rescue assistance) two-way emergency communications system, a stairway communications system, an elevator landing communications system, and an occupant evacuation elevator lobby communications system are all members of the same system type fulfilling the same functions in different locations. These systems are required to be installed in different buildings by applicable building codes, and they are considered as life-safety emergency communication systems to be used by building occupants during fire and non-fire emergencies. Because they are similar and all are two-way emergency communications systems, it is appropriate that they are mandated by a common set of requirements. These systems are different in nature from the two emergency communications systems specified in 24.3.7.2(1) and 24.3.7.2(2) that are meant to be used by fire fighters or other first responders or emergency personnel.

“Areas of refuge” or “areas of rescue assistance” are areas that have direct access to an exit, where people who are unable to use stairs can remain temporarily in safety to await further instructions or assistance during emergency evacuation or other emergency situations. It is, therefore, important that a method to communicate exists between that remote location and a constantly attended location either within the building or at an off-~~site~~ premise remote location where appropriate action for assistance can be initiated by trained personnel.

Stairway communications systems are typically provided in high-rise buildings between the fire command center and remote points located at not less than every fifth floor in stairways where the stairway doors are locked from the stair side to prevent building re-entry. It is important that a method to communicate exists between that remote location in the stairs and a constantly attended location either within the building or at an off-~~site~~ premises remote location so that appropriate action for assistance can be initiated.

Elevator car communications systems should not be confused with an elevator landing communications system, or an occupant evacuation elevator lobby communications system. The elevator car two-way communications system is installed in accordance with the requirements of ASME A17.1/CSA B44, *Safety Code for Elevators and Escalators*. Inspection and testing of elevator car two-way communications systems is performed in accordance with ASME A17.2, *Guide for Inspection of Elevators, Escalators and Moving Walks*.

Submitter Information Verification

Committee: SIG-ECS
Submittal Date: Fri Jul 26 09:35:51 EDT 2019

Committee Statement

Committee Statement: Off-site is not the correct term. Throughout 72, the term used is "off-premises."
Response Message: FR-5307-NFPA 72-2019

Public Input No. 236-NFPA 72-2019 [Section No. A.24.10]

SUBMITTED FOR COMMITTEE USE ONLY
NOT FOR PUBLICATION

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

First Revision No. 5325-NFPA 72-2019 [Detail]

24.10* ~~Area of Refuge (Area of Rescue Assistance)~~ Rescue Assistance Two-Way Emergency Communications Systems~~,~~ for ~~Stairway Communications Systems,~~ Stairwell and Elevator Landing/Lobby Areas of Refuge ~~Communications Systems, and Occupant Evacuation Elevator Lobby Communications Systems~~ .

Submitter Information Verification

Committee: SIG-ECS
Submittal Date: Fri Jul 26 10:58:54 EDT 2019

Committee Statement

Committee Statement: These systems are being used for more than just area of refuge. The section should address and does address all of these systems and therefore the title of the section should be changed. The Technical Committee changes the title to Rescue Assistance Two-Way Emergency Communications Systems for Stairwell and Elevator Landing/Lobby Areas of Refuge.

Response Message: FR-5325-NFPA 72-2019

Public Input No. 227-NFPA 72-2019 [Section No. 24.10]

SUBJECT TO REVISION - NOT FOR PUBLICATION
FOR COMMITTEE USE ONLY

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

First Revision No. 5299-NFPA 72-2019 [Section No. 3.3.90]

3.3.90– * _ Emergency Communications System.

A system for the protection of life by indicating the existence of an emergency situation and communicating information necessary to facilitate an appropriate response and action. (SIG-ECS)

A. 3.3.90

The definition is not intended to include the Emergency Services Communications Systems as addressed in NFPA 1221, nor to address the Public Switched Telephone Network . _

3.3.90. 1 One-Way Emergency Communications System.

One-way emergency communications systems are intended to broadcast information, in an emergency, to people in one or more specified indoor or outdoor areas. It is intended that emergency messages be conveyed either by audible, visual, or textual means, or any combination thereof. (SIG-ECS)

3.3.90.1.1 Distributed Recipient Mass Notification System (DRMNS).

A distributed recipient mass notification system is a system meant to communicate directly to targeted individuals and groups that might not be in a contiguous area. (SIG-ECS)

3.3.90.1.2 In-Building Fire Emergency Voice/Alarm Communications System.

Dedicated manual or automatic equipment for originating and distributing voice instructions, as well as alert and evacuation signals pertaining to a fire emergency, to the occupants of a building. (SIG-ECS)

3.3.90.1.3 In-Building Mass Notification System.

A system used to provide information and instructions to people in a building(s) or other space using intelligible voice communications and including visual signals, text, graphics, tactile, or other communication methods. (SIG-ECS)

3.3.90.1.4 Wide-Area Mass Notification System.

Wide-area mass notification systems are generally installed to provide real-time information to outdoor areas and could have the capability to communicate with other notification systems provided for a campus, military base, municipality, or similar single or multiple contiguous areas. (SIG-ECS)

3.3.90.2 Two-Way Emergency Communications System.

Two-way emergency communications systems are divided into two categories, those systems that are anticipated to be used by building occupants and those systems that are to be used by fire fighters, police, and other emergency services personnel. Two-way emergency communications systems are used to both exchange information and to communicate information such as, but not limited to, instructions, acknowledgement of receipt of messages, condition of local environment, and condition of persons, and to give assurance that help is on the way. (SIG-ECS)

SUBJECT TO COMMITTEE ACTION - NOT FOR PUBLICATION

Submitter Information Verification

Committee: SIG-ECS
Submittal Date: Fri Jul 26 09:03:22 EDT 2019

Committee Statement

Committee Statement: It is important when defining such terms as "Emergency Communications Systems." The term "communications" has very broad meaning and is used in many NFPA documents, including NFPA 110, 101, 72 and 1221 in several differing contexts. For example, "communications" in differing documents might reference any of the following:

Emergency communications system – Like an in-building fire phone system

Occupant notification – like fire alarm or voice notification system which advises to evacuate or take cover

Public safety communications system – Like 911

Fire fighter radio communications system

Communications between alarm devices or between alarms and fire panels and monitoring stations

Communications between the protected premise and monitoring stations

Communications between monitoring stations and emergency facilities

This causes some confusion, specifically when AHJs attempt to determine how requirements might be applied to telecommunications as a whole.

While NFPA 72 is one of the best documents with respect to how it clearly references Emergency Communications Systems, there is still room for improvement with the general definition. To make information clear and consistently applied, it would best to add specificity wherever the term "communications" is used.

Response Message: FR-5299-NFPA 72-2019

Public Input No. 42-NFPA 72-2019 [New Section after A.3.3.87]

SUBJECT TO REVISION - NOT FOR PUBLICATION - FOR COMMITTEE USE ONLY

First Revision No. 5189-NFPA 72-2019 [Section No. 3.3.198]

3.3.198 Pathway Survivability.

The ability of any conductor, ~~optic~~ optical fiber, radio carrier, or other means for transmitting system information to remain operational during fire conditions. (SIG-ECS)

Submitter Information Verification

Committee: SIG-ECS
Submittal Date: Thu Jul 25 08:29:50 EDT 2019

Committee Statement

Committee Statement: The Technical Committee standardize the term "fiber-optic" as an adjective or "optical fiber" as a noun based on Merriam-Webster.com. Merriam-Webster, 2019. Web. 25 June 2019
Response Message: FR-5189-NFPA 72-2019

Public Input No. 470-NFPA 72-2019 [Section No. 3.3.198]

SUBJECT TO REVISION - NOT FOR PUBLICATION
FOR COMMITTEE USE ONLY

First Revision No. 5313-NFPA 72-2019 [Section No. 24.3.1.2]

24.3.1.2*

Where listed loudspeakers do not achieve the intelligibility requirements of the Code for a notification zone, ~~nonlisted~~ non-listed loudspeakers shall be permitted to be installed to achieve the intelligibility for that notification zone.

Submitter Information Verification

Committee: SIG-ECS
Submittal Date: Fri Jul 26 09:48:43 EDT 2019

Committee Statement

Committee Statement: The word nonlisted is a typo. The Technical Committee changes it to non-listed.
Response Message: FR-5313-NFPA 72-2019

SUBJECT TO REVISION - NOT FOR PUBLICATION
FOR COMMITTEE USE ONLY

First Revision No. 5226-NFPA 72-2019 [New Section after 24.3.5.4.1]

24.3.6 Surface Protection Device.

Where components or systems are not listed to UL 864 or UL 2572 and are connected to any UL 864 or UL 2572 equipment, the following shall apply:

24.3.6.1

Control equipment used as part of the mass notification system shall incorporate a listed Surge Protective Device(s) (SPD).

24.3.6.2

Ancillary equipment/devices used as part of the mass notification system shall incorporate a listed Surge Protective Device (SPD).

24.3.6.3

Any metallic connection on an UL 864 and UL 2572 system intended for connection to external/ancillary systems or devices shall be required to include transient protection that has been evaluated to ensure performance.

24.3.6.4

All interconnected low voltage metallic conductors shall be provided with a listed Surge Protection Device(s) (SPD).

24.3.6.5

All interconnected line-voltage conductors shall be provided with listed Surge Protection Device(s) (SPD).

24.3.6.6

All ac mains circuit(s) that are providing power shall be provided with a listed Surge Protection Device(s) (SPD).

24.3.6.7

Connection to the life safety system shall be isolated so that it is not impaired due to failure of the ancillary equipment.

SUBJECT TO REVISION - FOR COMMITTEE USE ONLY - NOT FOR PUBLICATION

Submitter Information Verification

Committee: SIG-ECS
Submittal Date: Thu Jul 25 13:19:44 EDT 2019

Committee Statement

Committee Statement: Emergency communication systems (ECS) include many systems/devices (i.e. LED signs, TV's, etc.) that are not listed to these standards. It is important to make sure these devices critical to the overall ECS system are fully protected during a power surge. For instance, in airports when there is a power surge and the television/monitors are not surge protected, those in harm's way are vulnerable. Rather than getting the time sensitive information, the devices need to reboot; thus, they are not available when absolutely necessary. In an effort to avoid situations like this one, it is vitally important to have the emergency communications system designer attest to the fact that the device(s) has been evaluated with an appropriate listed surge protection device.

Response Message: FR-5226-NFPA 72-2019

First Revision No. 5339-NFPA 72-2019 [Sections 24.3.6.1, 24.3.6.2]

Sections 24.3.6.1, 24.3.6.2

24.3.6.1*

Messages shall be developed for each scenario ~~developed~~ identified in the emergency response plan.

A.24.3.6.1

See Annex G.

~~**24.3.6.2** *~~ –

~~A.~~

-

SUBJECT TO REVISION - NOT FOR PUBLICATION
FOR COMMITTEE USE ONLY

~~24.3.6.2.~~

24.3.6.

2

~~See Annex G .~~

1. 1 _

Based on the emergency response plan, emergency messages shall have content that provides information and instructions to people in the building, area, site, or installation.

24.3.6.

2

1 .2 _

The proposed verbiage of prerecorded automatic emergency messages shall be identified on the permit plans and be approved by the authority having jurisdiction prior to their programming into the emergency voice communications system.

24.3.6.

2

1 .3 _

As a minimum, the proposed verbiage of prerecorded messages shall be in the official spoken language acceptable to the authority having jurisdiction.

24.3.6.

2

1 .4 _

Additional prerecorded message(s) shall be permitted as approved by the authority having jurisdiction.

SUBJECT TO REVISION - NOT FOR PUBLICATION
FOR COMMITTEE USE ONLY

Submitter Information Verification

Committee: SIG-ECS
Submittal Date: Tue Aug 06 13:21:38 EDT 2019

Committee Statement

Committee Statement: The Technical Committee editorially revises the text. Revised numbering and deleted an unneeded paragraph reference.

Response Message: FR-5339-NFPA 72-2019

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

First Revision No. 5208-NFPA 72-2019 [Section No. 24.3.10]

24.3.10* Control Unit Listing for Mass Notification Systems.

Control units installed as part of a mass notification system shall be in compliance with this Code and ~~at least one of the following applicable standards:~~

- ~~ANSI/UL 864, *Standard for Control Units and Accessories for Fire Alarm Systems*~~
  ~~ANSI/UL 2572,~~ UL 2572, *Mass Notification Systems , or equivalent* .

Supplemental Information

File Name	Description	Approved
A.24.3.10_Revised_Annex_Language.docx	See attached document for revisions to A.24.3.10. For staff use	

Submitter Information Verification

Committee: SIG-ECS
Submittal Date: Thu Jul 25 10:03:32 EDT 2019

Committee Statement

Committee Statement: UL 2572 has specific requirements on how mass notification systems need to function. UL 864 does not have these requirements. The industry has matured and many manufacturers have equipment listed to UL 2572 and therefore NFPA 72 needs to remove all other listings other than 2572. In addition, modifications have been made to the annex language as well.

Response Message: FR-5208-NFPA 72-2019

Public Input No. 616-NFPA 72-2019 [Global Input]

Public Input No. 373-NFPA 72-2019 [Section No. A.24.3.10]

Public Input No. 244-NFPA 72-2019 [Section No. 24.3.10]

Public Input No. 372-NFPA 72-2019 [Section No. 24.3.10]

SUBJECT TO REVISION - FOR COMMITTEE USE ONLY - NOT FOR PUBLICATION

First Revision No. 5213-NFPA 72-2019 [Section No. 24.3.12.1]

24.3.12.1*

Each application of a mass notification system shall be specific to the nature and anticipated risks of each facility for which it is designed.

A.24.3.12.1

Although this chapter outlines some specific criteria and/or limitations, each application should be based on recognized performance-based design practices and the emergency response plan developed for the specific facility.

The risk analysis should identify which threats are significant enough that a mass notification system is required for an effective response. Significance of threats should be based on the likelihood of occurrence and the negative consequences if the threat does occur.

Here are the general categories of questions that might be presented to the senior manager responsible for mass notification decisions. The actual questions for each project must be tailored to the area, the building, the campus, and the culture of the user organization. Following is a brief description of potential content within the mass notification event questions:

(1) What is the type of emergency event — that is, is it fire, security, safety, health, environmental, geological, meteorological, utility service disruption, or another type of event?

(2) What is the urgency of the emergency event — that is, does it represent immediate danger, has it already occurred, is it expected to occur soon, is it expected to occur in the future, or is its occurrence unknown?

(3) What is the anticipated or expected severity of the emergency event that is, how will it impact our facility and its functions, is it expected to be extreme, severe, etc.?

(4) What is the certainty of the emergency event that is, is it happening now, is it very likely to occur, is it likely to occur, is it possible that it will occur in the future, is it unlikely to occur, or is its occurrence unknown?

(5) What is the location of the event, or from what direction is the emergency event approaching — that is, has it or will it be approaching from the north, south, east, or west?

(6) What zone or areas should receive the emergency message(s) — that is, is it a floor of a building, multiple floors of a building, the entire building, multiple buildings, a campus of buildings, an entire town or city, an entire state, an entire region of states, or an entire country?

(7) What is the validity of the emergency event — that is, has the emergency event been investigated and/or confirmed?

(8) What instructions should we send to our personnel — that is, should they evacuate the facility, should they shelter-in-place, should they shelter-in-place at a special location, should they proceed to a safe haven area, and other action oriented items?

(9) Are there any special instructions, procedures, or special tasks that we need to remind personnel about or to accomplish — that is, close your office door, open your office door, stay away from windows, do not use elevators, and other information relating to personnel actions?

The questions suggested in items (1) through (9) are offered for consideration, and not all of them might be appropriate for every mass notification system installation. It is important to remember that when an emergency event occurs, the response must be immediate and deliberate. Therefore, there is no time for indecision. So the questions selected to reside in the emergency messaging decision tree illustrated in items (1) through (9) must be straightforward and as simple as possible. They must also be tailored to the specific organization, culture, site, and unique requirements of each local environment.

24.3.12.1.1

When an owner has developed a risk analysis in accordance with 24.3.12, such risk analysis shall be permitted to be used as a baseline in preparing the risk analysis for new or renovated facilities that are similar in nature.

SUBJECT TO REVISION - NOT FOR PUBLICATION

Submitter Information Verification

Committee: SIG-ECS
Submittal Date: Thu Jul 25 10:26:29 EDT 2019

Committee Statement

Committee Statement: The guidance requested by the submitter has been provided in the annex rather than in the body.
Response Message: FR-5213-NFPA 72-2019

Public Input No. 642-NFPA 72-2019 [Section No. 24.3.12.1 [Excluding any Sub-Sections]]

SUBJECT TO REVISION - NOT FOR PUBLICATION
FOR COMMITTEE USE ONLY

First Revision No. 5216-NFPA 72-2019 [New Section after 24.3.12.10]

24.3.12.11*

Where identified by the risk analysis or required by federal, state, or local regulation or the AHJ, systems shall be designed, installed and maintained in accordance with cyber security standards.

A.24.3.12.11

Cyber security standards include the following:

(1) ANSI/ISA-62443 Series

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

(3) UL 2900 Series

(4) Performance standards accepted by the stakeholders

Submitter Information Verification

Committee: SIG-ECS

Submittal Date: Thu Jul 25 10:33:08 EDT 2019

Committee Statement

Committee Statement: Interfacing integrated systems [as outlined in NFPA 4] into the fire alarm system can increase the vulnerability of security breaches against unauthorised access or attack by individuals, groups, companies, and governments onto or from any of these integrated systems, including the fire alarm system. By evaluating these systems through the standards proposed, there is a level of confidence in the securing of these systems to prevent these attacks.

As an example, Target was breached through the HVAC system. The danger lies in the fact that everything can be hacked in these types of buildings. Outsiders can take control of all connected systems to turn off lights, trigger a fire alarm and cause panic, add external users to access controls, interfere with the HVAC system to knock staff off their guard and even disrupt machines, or to deactivate the CCTV (video surveillance) system to allow an intruder to enter, and the list goes on. For these reasons, the Technical Committee includes Cyber Security Design into the risk analysis to avoid potential security breaches to the system.

Response Message: FR-5216-NFPA 72-2019

Public Input No. 600-NFPA 72-2019 [New Section after 24.3.12.10]

SUBJECT TO REVISION - NOT FOR PUBLICATION - FOR COMMITTEE USE ONLY

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

First Revision No. 5217-NFPA 72-2019 [Section No. 24.3.12.10]

24.3.12.10*

The risk analysis shall be used as the basis for development of the ~~ECS~~ MNS provisions of the facility emergency response plan.

A.24.3.12.10 _

When a code requires a Risk Analysis for Mass Notification Systems to determine the need for an MNS, the stakeholders can determine the extent and types of coverage and systems needed. It can be found that the minimum code requirements already include what is needed for the risk of a project, and that nothing additional is needed. An example could be a small school that has an EVAC system, that system might be sufficient for emergency communications based on the risk analysis prepared by the stakeholders and approved by the AHJ.

Submitter Information Verification

Committee: SIG-ECS

Submittal Date: Thu Jul 25 11:02:03 EDT 2019

Committee Statement

Committee Statement: NFPA 1, NFPA 101, and building codes are requiring a Risk Analysis to determine the need for a mass notification system and the codes reference NFPA 72 for the criteria of the risk analysis. There is no “option” for the stakeholders, design professional, owner, or AHJ to determine that an MNS system is not required based upon the risk analysis. This language is intended to accomplish this mission. The Technical Committee could not find within 72 where a risk analysis for the MNS system overall is required.

Response Message: FR-5217-NFPA 72-2019

Public Input No. 486-NFPA 72-2019 [Section No. 24.3.12.10]

SUBJECT TO REVISION - FOR COMMITTEE USE ONLY - NOT FOR PUBLICATION

First Revision No. 5221-NFPA 72-2019 [Section No. 24.3.14.4.1 [Excluding any Sub-Sections]]

For systems employing relocation or partial evacuation, a Level ~~2~~ 1 or Level ~~3~~ 2 pathway survivability shall be required, unless otherwise permitted in 24.3.14.4.1.1 ~~or~~ through 24.3.14.4.1.~~2~~ 3 .

Submitter Information Verification

Committee: SIG-ECS

Submittal Date: Thu Jul 25 11:32:36 EDT 2019

Committee Statement

Committee Statement: New buildings with fire sprinklers and passive fire protection have a very good fire safety record with very few high rise/commercial building fire deaths. The confusion with enforcement and the extreme costs/lack of materials to cost effectively provide 2 hour ratings, justify that we look hard that new buildings with fire sprinklers and all pathways in conduit provide a reasonable level of life safety. For existing buildings without fire sprinklers then 2 hour rated pathways could be justifiable. Another area that should be looked into is the evacuation time planned for the building, one may find that most can be evacuated within one hour.

Response Message: FR-5221-NFPA 72-2019

Public Input No. 545-NFPA 72-2019 [Section No. 24.3.14.4.1 [Excluding any Sub-Sections]]

SUBJECT - FOR COMMITTEE USE ONLY - NOT FOR PUBLICATION

First Revision No. 5270-NFPA 72-2019 [New Section after 24.3.14.4.1.2]

24.3.14.4.1.3

Pathway survivability Level 4 shall consist of pathways in buildings that are fully protected by an automatic sprinkler system in accordance with NFPA 13, and automatic smoke detection in areas where the vertical or horizontal backbone is installed and one or more of the following:

(1) 1-hour fire-rated fire-resistive cable

(2) 1-hour fire-rated cable system [electrical circuit protective system(s)]

(3) 1-hour fire-rated enclosure or protected area

(4) Performance alternatives approved by the authority having jurisdiction

Submitter Information Verification

Committee: SIG-ECS

Submittal Date: Thu Jul 25 16:37:38 EDT 2019

Committee Statement

Committee Statement: Level 4 provides an alternate cost effective application that provides life safety and sets the path for fire life safety to advance in modern buildings. A Task Group has been formed to review the current survivability requirements and suggest revisions.

Response Message: FR-5270-NFPA 72-2019

FOR COMMITTEE USE ONLY
SUBJECT TO REVISION - NOT FOR PUBLICATION

First Revision No. 5240-NFPA 72-2019 [Section No. 24.3.14.10]

~~**24.3.14.10** –~~

~~Elevator emergency communications systems shall have a pathway survivability of Level 0, Level 1, Level 2, or Level 3.~~

Submitter Information Verification

Committee: SIG-ECS

Submittal Date: Thu Jul 25 14:50:33 EDT 2019

Committee Statement

Committee Statement: This section should be deleted since the "Elevator emergency communications system" was removed from Section 24.3.7.2 and was placed in the annex. This ELEVATOR communication system is the 2-way communications system installed inside elevator cars and is specified by the ASME A17.1 code. It is installed inside elevator cars and serviced by elevator personnel and could be monitored by elevator call centers. It has nothing to do with the other building 2-way ECS specified in Section 24.3.7.2. (This is why this system was removed from the body of the Code in the 2019 edition).

NFPA 72 should not specify requirements for a system which is defined and specified by the ASME A17.1 code and therefore, the Technical Committee deletes this paragraph.

Response Message: FR-5240-NFPA 72-2019

Public Input No. 189-NFPA 72-2019 [Section No. 24.3.14.10]

SUBJECT TO REVISION - FOR COMMITTEE USE ONLY - NOT FOR PUBLICATION

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

First Revision No. 5242-NFPA 72-2019 [Section No. 24.4.2.1]

24.4.2.1 – * .

Unless otherwise permitted by 24.4.8, evacuation messages shall be preceded and followed by a minimum of two cycles of the ~~emergency evacuation~~ emergency signal specified in 18.4.2 or 18.4.3 .

A.24.4.2.1 .

Where an evacuation message is being provided, the Temporal 3 signal specified in 18.4.2 should be provided unless otherwise dictated by the emergency response plan or AHJ . This is regardless as to whether the cause of the evacuation is fire, carbon monoxide (CO), gas leak, bomb threat, or any other emergency situation requiring evacuation of a building.

Submitter Information Verification

Committee: SIG-ECS
Submittal Date: Thu Jul 25 14:57:27 EDT 2019

Committee Statement

Committee Statement: The reference is needed for instances where carbon monoxide detectors are included in the system. The Technical Committee adds Annex text for further clarification.
Response Message: FR-5242-NFPA 72-2019

Public Input No. 78-NFPA 72-2019 [Section No. 24.4.2.1]

Public Input No. 333-NFPA 72-2019 [New Section after A.24.4]

SUBJECT TO FOR COMMITTEE USE ONLY REVISION - NOT FOR PUBLICATION

First Revision No. 5253-NFPA 72-2019 [New Section after 24.4.8.3.1]

24.4.8.3.2*

When the message is recorded, it shall be periodically repeated, until silenced or reset by emergency personnel.

A.24.4.8.3.2

Only first responders or other trained authorized emergency personnel should be able to intentionally and manually silence or reset the automatic pre-recorded message sequence. This is required to ensure the safe evacuation or relocation of all occupants regardless of the time it takes to complete this task. It should not be permitted to allow for an automatic termination of the alarm since the actual time for relocation and evacuation during real fire emergencies is never known due to potential unpredicted scenarios. The alert status of visual appliances should be maintained. However, since the duration of the alarm is indeterminate, audible alerts and messaging that are periodically suspended can contribute to an improved response by the occupants. Suspending the audible portion of the alarm can support a better community response to the instructions, especially in the case where the abled bodied are attempting to aid the infirmed or emotionally challenged.

Approved alternative fire alarm notification schemes, such as a sequence that contains only a fixed number of repetitions of the pre-recorded messages and associated alert tones, or as indicated in 24.4.8.3.2, should be permitted as long as the occupants are effectively notified and are provided instructions in a timely and safe manner in accordance with the emergency response plan.

Research from the National Research Council of Canada: Occupant Behaviour and Evacuation found "In public buildings, such as airport terminals or sport centres, occupant training is not practical; for these, much of the responsibility for safety will rest with staff. Consequently, staff training is paramount. Occupants are very likely to look for staff members to obtain information; they are regarded as knowledgeable, they are expected to know the situation, the best course of action and the closest exit. Whether heard on a loudspeaker or seen in uniform or wearing a name tag, staff are likely to be listened to."

The National Council on Disability published Effective Emergency Management: Making Improvements for Communities and People with Disabilities Aug.12, 2009, which finds: "People with disabilities should not be viewed as one more special interest group that drains resources from the common pool. Accommodating this large group often translates into being better equipped to serve all people. Anyone, at any moment, can incur a disability, particularly during emergencies. (Kailes and Enders 2006, p. 13)".

Further, Shields, Boyce, and Silcock (1997) note that "staff trained in emergency evacuation should provide guidance to people who are evacuating public facilities. Familiar and trusted staff can alert a significant portion of the public in such instances and ensure an efficient evacuation". On the basis of census results, Morrow (1999, p. 5) argues that a “sizable segment” of any community’s population will need additional assistance during evacuation.

24.4.8.3.3*

The periodic interval between the subsequent message sequences shall be a minimum of three minutes.

A.24.4.8.3.3

Fire related emergency relocation instructions and non-evacuation messages are repeated a minimum of three times. For pre-recorded messages, the actual number of times the message sequence plays is indeterminate, and the interval between each sequence playing is not defined by code, but rather intended to be defined in the emergency response plan. Research shows (see Annex G: Guidelines for Emergency Communication Strategies for Buildings and Campuses) that messages should be repeated at intervals, not consecutively. In determining the interval, consider the following:

(1) Too long between message sequences could be misunderstood by occupants that the emergency has been resolved.

(2) Too long between message sequences could not sufficiently communicate the sense of urgency that is intended.

(3) Too little time between message sequences could impair the ability of occupants to comply with instructions particularly for occupants that need assistance.

(4) Too little time between message sequences could make it difficult for occupants to mark a change in the message contents if partial evacuation or relocation instructions are changed and re-issued.

SUBJECT TO CHANGE UNTIL LOCKED FOR PUBLICATION

(5) Upon the loss of primary power, secondary power is required to support continuous notification for only 15 minutes. This time may be extended based on the period of repetition of automatic messages. Too little time between message sequences could exhaust power reserves before emergency first responder personnel arrive, compromising their ability to manually transmit additional live evacuation or relocation messages.

Submitter Information Verification

Committee: SIG-ECS

Submittal Date: Thu Jul 25 15:33:06 EDT 2019

Committee Statement

Committee Statement: There was significant debate during the 2019 code cycle regarding the merits of continuous repetition of audible messaging during fire related partial evacuation and/or relocation. Continuous verbal messaging, repeating the same instructions over and over without a break, is considered by some to be the safest approach. Not letting up for even an instant, until a fire response official can attend the site, evaluate the risks, and then manually silence the audible messaging has been positioned as what should be the default procedure across the nation. However, there is too much that can go wrong with this approach to be considered the default position taken by this Code. Some of the reasons are spelled out in related annex public inputs. But the fundamental problem with a barrage of continuous messaging is the impairment created for effective interpersonal communications between the occupants (including staff) that may be assisting a confused, impaired, or disabled individual in following the instructions being provided. It has been argued on the floor of the NFPA conference that emergency procedure cannot cater to the minority. This attitude is specifically disallowed by the ADA where, by law one must provide emergency response plans that are inclusive of people with disabilities.

Additionally, Effective Emergency Management: Making Improvements for Communities and People with Disabilities, published by the National Council on Disability in Aug.12, 2009, concludes: "People with disabilities are often forgotten during the response phase of a disaster. Historically, our society has approached people with disabilities by implying they need to take on “extra” personal responsibility to avoid the consequences of disaster rather than by addressing the built environment and social responsibility in an effort to create a safer setting for everyone. When people with disabilities are remembered, they are often grouped into one homogeneous population and provided with instructions that are not appropriately communicated or that are impossible for everyone to follow. "

It is our responsibility to respect the rights of all people, whether young children, or people physically, sensory, cognitively, or emotionally impaired, and to expect that emergency response plans are being created to consider the existence of all people of all abilities.

Yet in the argument for continuous notification some suggest convincingly that the existing code, in only requiring the message sequence to be repeated three times, does not go far enough. They argue that the scope of this requirement is small, and this section only applies to fire related emergencies. Where in reality, a fire alarm activation is not exclusively used only in instances of fire. This series of public inputs addresses those concerns in a balance way with the support of research referenced in the Annex to establish an informed basis for the creation of inclusive emergency response plans.

Response Message: FR-5253-NFPA 72-2019

Public Input No. 391-NFPA 72-2019 [New Section after A.24.4.8]

Public Input No. 390-NFPA 72-2019 [New Section after 24.4.8.3.1]

SUBJECT TO REVISION BY COMMITTEE ACTION ONLY
NOT FOR PUBLICATION

First Revision No. 5257-NFPA 72-2019 [Section No. 24.4.8.3.1]

24.4.8.3.1– *

The sequence [the alert tone followed by the message(s)] shall be repeated at least three times to inform and direct occupants in the signaling zone where the alarm initiation originated, as well as other signaling zones in accordance with the building fire safety plan.

A.24.4.8.3.1

Section 5.2.4.2 of NIST Technical Note 1779, *General Guidance on Emergency Communication Strategies for Buildings* (Kuligowski, 2013), recommends emergency messaging repetition. It also recommends that emergency messaging be repeated at intervals, rather then consecutively. "The second (or third message), provided some interval of time later, may catch a different population who were either busy or distracted during the time period when the first warning message was issued." See also G.2.2.1(11) of this code. Section 24.4.8.3.1 requires that EVAC messages used for fire emergency relocation or partial evacuation be repeated at least three times. Therefore, EVAC systems that transmit digitally stored audio messages are to be configured to meet these requirements. First responders and other individuals required to make live fire–related relocation or partial evacuation messages must also be trained to repeat the entire message sequence, including the alert tone, at least three times. The interval for repeating the messages should be established in the emergency response plan.

Submitter Information Verification

Committee: SIG-ECS
Submittal Date: Thu Jul 25 15:50:02 EDT 2019

Committee Statement

Committee Statement: The Technical Committee adds annex text for clarification.
Response Message: FR-5257-NFPA 72-2019

Public Input No. 300-NFPA 72-2019 [New Section after A.24.8]
Public Input No. 299-NFPA 72-2019 [Section No. 24.4.8.3.1]

SUBMITTED TO COMMITTEE USE ONLY
SUBJECT TO REVISION - NOT FOR PUBLICATION

First Revision No. 5320-NFPA 72-2019 [Section No. 24.4.8.4]

24.4.8.4 *

Where the system is used to transmit partial evacuation instructions, the alert tone specified in 24.4.2.1 followed by a message (or messages where multi-channel capability is used) shall be provided.

A.24.4.8.4

Where a partial evacuation message is being provided, the Temporal 3 signal specified in 18.4.2 should be provided unless otherwise dictated by the emergency response plan or AHJ. This is regardless as to whether the cause of the evacuation is fire, carbon monoxide (CO), gas leak, bomb threat, or any other emergency situation requiring partial evacuation of a building.

SUBJECT TO REVISION - NOT FOR PUBLICATION - FOR COMMITTEE USE ONLY

Submitter Information Verification

Committee: SIG-ECS
Submittal Date: Fri Jul 26 10:21:54 EDT 2019

Committee Statement

Committee Statement: At the request of a Correlating Committee Task Group, this change seeks to clarify that the evacuation signal shall be the national standard Temporal 3 signal described in 18.4.2. This is regardless of the nature of the emergency requiring the partial evacuation of the building. The Temporal 3 tone will get the attention of the majority of occupants (with the rest alerted by visual notification appliances) and the voice message used will indicate the need to evacuate. The general public does not recognize the difference between Temporal 3 and Temporal 4 tones and would not differ their response to the evacuation signal based on the tone used. The intent of 24.4.8.4 is to use the national standard evacuation tone, followed by the appropriate voice message, regardless of the nature of the emergency situation. Partial evacuation means full evacuation of a selected portion of the building (i.e., NOT relocation) and while the voice message used can vary, the evacuation tone does not have to. The language used in the new Annex material would still allow an individual emergency response plan or AHJ to dictate a special or unique pre- or post-tone if required for some other specific reason.

This change is to eliminate the confusion where partial evacuation due to a CO alarm should require a Temporal 4 pre- and post-tone. The use of this tone in a building ECS provides little to no benefit when the requirement is to evacuate a portion the building.

Response Message: FR-5320-NFPA 72-2019

Public Input No. 334-NFPA 72-2019 [New Section after A.24.4.8]

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

First Revision No. 5259-NFPA 72-2019 [Section No. 24.4.8.5.2]

24.4.8.5.2

~~Manually activated loudspeakers shall be permitted in exit stair enclosures, exit passageways, and elevators in buildings that have emergency voice/alarm communications systems in accordance with Section~~ Where required by other governing laws, codes, or standards; loudspeakers shall be provided in locations specified in 24.4.8.5 and shall conform to Section 24.4.

Submitter Information Verification

Committee: SIG-ECS

Submittal Date: Thu Jul 25 15:59:54 EDT 2019

Committee Statement

Committee Statement: There is no need to indicate: "Manually activated loudspeakers" in this section since Section 24.4.8.5 already indicates these loudspeakers are "for manual paging only".

Also, these manual paging speakers are required by the IFC and IBC (EVACS section 907.5.2.1 - OEE and 907.5.2.2.) and therefore NFPA 72 should not have permissive language.

Response Message: FR-5259-NFPA 72-2019

Public Input No. 327-NFPA 72-2019 [Section No. 24.4.8.5.2]

SUBJECT TO FOR COMMITTEE USE ONLY REVISION - NOT FOR PUBLICATION

First Revision No. 5260-NFPA 72-2019 [Section No. 24.5.9.3]

24.5.9.3

Where no listed device exists for the detection required by the emergency response plan, ~~nonlisted~~ non-listed devices shall be permitted to be used if their failure will not impair the operation of the mass notification system.

Submitter Information Verification

Committee: SIG-ECS
Submittal Date: Thu Jul 25 16:04:45 EDT 2019

Committee Statement

Committee Statement: The word nonlisted is a typo. The Technical Committee changes it to non-listed.
Response Message: FR-5260-NFPA 72-2019

Public Input No. 163-NFPA 72-2019 [Section No. 24.5.9.3]

SUBJECT TO REVISION - NOT FOR PUBLICATION - FOR COMMITTEE USE ONLY

First Revision No. 5261-NFPA 72-2019 [Section No. 24.5.11.5]

24.5.11.5

When the ACU is integrated with the building fire alarm control unit to form one combined system that performs both functions, the system shall meet the secondary (standby) power requirements of this chapter.

Submitter Information Verification

Committee: SIG-ECS

Submittal Date: Thu Jul 25 16:05:19 EDT 2019

Committee Statement

Committee Statement: "Standby power" is not a defined term, and while used extensively in the form proposed here "secondary (standby) power" in tables, for Chapter 14 Inspection, Testing, and Maintenance, and elsewhere, the term "standby power" is not used in Chapter 10. It is only used in reference to locations (i.e., standby power rooms in 24.8.12), and standby power status indicators (24.11.1.2), and several places in Annex A, and in reference to NFPA 110 & 111.

Response Message: FR-5261-NFPA 72-2019

Public Input No. 375-NFPA 72-2019 [Section No. 24.5.11.5]

SUBJECT TO REVISION - FOR COMMITTEE USE ONLY - NOT FOR PUBLICATION

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

First Revision No. 5314-NFPA 72-2019 [Section No. 24.5.16.1]

24.5.16.1

Where audible notification is provided, mass notification systems shall also provide visual notification information to serve the deaf or hard of hearing ~~impaired~~ and for high-noise areas.

Submitter Information Verification

Committee: SIG-ECS
Submittal Date: Fri Jul 26 09:50:29 EDT 2019

Committee Statement

Committee Statement: The Technical Committee editorially revises the text.
Response Message: FR-5314-NFPA 72-2019

SUBJECT TO REVISION - NOT FOR PUBLICATION FOR COMMITTEE USE ONLY

First Revision No. 5315-NFPA 72-2019 [Section No. 24.5.17.3]

24.5.17.3

Visual notification appliances used in combination systems where the same visual notification appliance is used for both mass notification and fire notification shall comply with the following:

(1) Be clear or nominal white, meeting the listing requirements of ~~ANSI/UL 1971~~ UL 1638 , *Standard for Visible Signaling Devices for ~~the Hearing Impaired~~ Fire Alarm and Signaling Systems, including accessories, or equivalent*

(2) Have no marking or be marked with the word “ALERT” stamped or imprinted on the appliance

(3) Be visible to the public

Submitter Information Verification

Committee: SIG-ECS
Submittal Date: Fri Jul 26 09:52:26 EDT 2019

Committee Statement

Committee Statement: The Technical Committee updates the reference and title.
Response Message: FR-5315-NFPA 72-2019

SUBJECT TO REVISION - NOT FOR PUBLICATION
FOR COMMITTEE USE ONLY

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

First Revision No. 5318-NFPA 72-2019 [Section No. 24.5.17.8]

24.5.17.8

Where ~~colored~~ visual notification appliances are used solely for mass notification, they shall be listed to an applicable standard such as ANSI/UL 1638, *Visible Signaling Devices for Fire Alarm and Signaling Systems, Including Accessories*.

Submitter Information Verification

Committee: SIG-ECS
Submittal Date: Fri Jul 26 10:01:30 EDT 2019

Committee Statement

Committee Statement: The Technical Committee editorially revises the text.
Response Message: FR-5318-NFPA 72-2019

SUBJECT TO REVISION - NOT FOR PUBLICATION
FOR COMMITTEE USE ONLY

First Revision No. 5317-NFPA 72-2019 [Section No. 24.5.17.9]

~~**24.5.17.9** –~~

~~Visual notification appliances with nominal white light output that are listed to ANSI/UL 1971, *Standard for Signaling Devices for the Hearing Impaired* , and visual notification appliances with other than nominal white light output that are listed to ANSI/UL 1638, *Visible Signaling Devices for Fire Alarm and Signaling Systems, Including Accessories* , shall be considered as meeting the intent of this Code.~~

Submitter Information Verification

Committee: SIG-ECS
Submittal Date: Fri Jul 26 09:56:02 EDT 2019

Committee Statement

Committee Statement: The Technical Committee deletes the text as this is already covered in previous sections.
Response Message: FR-5317-NFPA 72-2019

SUBJECT TO FOR COMMITTEE USE ONLY REVISION - NOT FOR PUBLICATION

First Revision No. 5273-NFPA 72-2019 [Section No. 24.6.11 [Excluding any Sub-Sections]]

Interfaces between wide-area mass notification systems and in-building mass notification systems, other alert and notification systems, regional mass notification systems, and off-~~site~~ premises interfaces shall have a standard interface method (such as an audio line–level output and multiple relay contacts) or supply the necessary communications protocols to provide interoperability and a secure communications link.

Submitter Information Verification

Committee: SIG-ECS
Submittal Date: Thu Jul 25 16:50:21 EDT 2019

Committee Statement

Committee Statement: Off-site is not the correct term. The term used throughout NFPA 72 is "off-premises."
Response Message: FR-5273-NFPA 72-2019

Public Input No. 232-NFPA 72-2019 [Section No. 24.6.11 [Excluding any Sub-Sections]]

SUBJECT FOR COMMITTEE USE ONLY
SUBJECT TO REVISION - NOT FOR PUBLICATION

First Revision No. 5275-NFPA 72-2019 [Section No. 24.9.1]

~~**24.9.1** – Non-interference.~~

~~**24.9.1.1** –~~

~~No amplification system capable of operating on frequencies or causing interference on frequencies assigned to the jurisdiction by the FCC shall be installed without prior coordination and approval of the authority having jurisdiction.~~

~~**24.9.1.2** –~~

~~The building manager/owner shall suspend and correct other equipment installations that degrade the performance of the public safety radio system or public safety radio enhancement system.~~

Submitter Information Verification

Committee: SIG-ECS

Submittal Date: Thu Jul 25 16:53:01 EDT 2019

Committee Statement

Committee Statement: The Technical Committee deletes the balance of code language to avoid confusion and to have the designers, stakeholders and authority having jurisdiction go to NFPA 1221 for all requirements for Emergency Radio Enhancement Systems. These systems are not a part of the Building Fire Alarm System, monitoring is as outlined in NFPA 1221.

Response Message: FR-5275-NFPA 72-2019

Public Input No. 305-NFPA 72-2019 [Section No. 24.9.1]

SUBJECT TO REVISION - FOR COMMITTEE USE ONLY - NOT FOR PUBLICATION

First Revision No. 5276-NFPA 72-2019 [New Section after 24.9.2]

24.10.1
Systems used for Area of Refuge (Area of Rescue Assistance) Emergency Communications Systems, Stairway Communications Systems, Elevator Landing Communications Systems, and Occupant Evacuation Elevator Lobby Communications Systems shall be listed to UL 2525, *Standard for Rescue Assistance Two-Way Emergency Communication Systems for Stairwell and Elevator Landing/Lobby Areas of Refug* e, or equivalent.

Submitter Information Verification

Committee: SIG-ECS
Submittal Date: Thu Jul 25 16:56:11 EDT 2019

Committee Statement

Committee Statement: NFPA 72 required these systems to monitor for integrity (supervision) and UL created a new Standard to allow products to be listed. This same process was used for MNS and UL 2572. This language directs the user to ensure that these systems conform to the new UL Standard (or equivalent) and are now aware that the new Standard exists.

Response Message: FR-5276-NFPA 72-2019

Public Input No. 582-NFPA 72-2019 [Section No. 24.10.1]

Public Input No. 152-NFPA 72-2019 [New Section after 24.9.2]

Public Input No. 229-NFPA 72-2019 [Section No. 24.10.1]

SUBJECT TO REVISION - NOT FOR PUBLICATION FOR COMMITTEE USE ONLY

First Revision No. 5277-NFPA 72-2019 [Section No. 24.9.2]

24.9.2 ~~Installation and Design.~~ *

All in-building two-way radio communications enhancement systems shall be designed, installed, and maintained in accordance with NFPA 1221.

A 24.9.2

The intent of these systems is to provide reliable radio communications for first responders within all buildings in their jurisdiction. The building codes now require these systems in lieu of fire fighter telephones.

NFPA 1221 is followed by 911 centers, dispatchers and municipal radio operations centers. It is the best standard to follow for these systems.

Dedicated fire fighter telephone (FFT) systems were required in high-rise buildings to assist first responder's ability to communicate within the building and to communicate primarily to the fire ground commander located at the fire command center. Although Two-Way Radio Communications Enhancement Systems were allowed during these early years, the radio systems were not as reliable as they are today. In addition, because the FFTs were generally supplied by the manufacturers of the fire alarm systems, designers, AHJs and installers wrongly assumed the FFTs were a part of the life safety system and were required (they were, only in lieu of not installing an emergency responder radio communications system (ERRCS). Today the opposite is true. Since 2009, the building and fire codes require the ERRCS, allowing the FFT only by permission of the AHJ.

Submitter Information Verification

Committee: SIG-ECS

Submittal Date: Thu Jul 25 17:04:26 EDT 2019

Committee Statement

Committee Statement: This new annex material is intended to provide additional guidance to the designers, installers, stakeholders and authority having jurisdiction that these systems fall under the scope of NFPA 1221. They are an important tool for first responders.

Response Message: FR-5277-NFPA 72-2019

Public Input No. 306-NFPA 72-2019 [New Section after 24.9.2]

SUBMITTED TO COMMITTEE USE ONLY
SUBJECT TO REVISION - NOT FOR PUBLICATION

First Revision No. 5289-NFPA 72-2019 [New Section after 24.10.2.1]

24.10.2.2

Area of refuge systems shall be classifired as one of three types of systems.

1. Type 1 - Stand alone area of refuge that is constantly attended.
2. Type 2 - System premises area of refuge this is monitoered off-premises.
3. Type 3 - Networked area of refuge systems on a premises that are managed locally.

Submitter Information Verification

Committee: SIG-ECS

Submittal Date: Fri Jul 26 08:27:38 EDT 2019

Committee Statement

Committee Statement: When working through how these systems will be used and listed the need for multiple types of systems or classifying systems differently is needed. The functionality required in a local system will be different than that of a networked or a system that connects off-premises. NFPA 72 needs to define these various types of systems as it does for MNS. Not all mass notification systems function the same, ie., DRMNS, In-building, Outdoor, etc. The same concept is true with area of refuge.

The Technical Committee has developed a Task Group to review these requirements and make ITM recommendations.

Response Message: FR-5289-NFPA 72-2019

Public Input No. 301-NFPA 72-2019 [New Section after 24.10.2.2]

Public Input No. 302-NFPA 72-2019 [New Section after 24.10.2.1]

SUBJECT TO REVISION - NOT FOR PUBLICATION FOR COMMITTEE USE ONLY

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

First Revision No. 5290-NFPA 72-2019 [Section No. 24.10.2.3]

24.10.2.3*

The constantly attended location shall be located either within the building or at an off-~~site~~ premises monitoring location and shall be approved by the authority having jurisdiction.

Supplemental Information

File Name	Description	Approved
A.24.10.2.3_Revised_Annex_Language.docx	See attached document for revisions to A.24.10.2.3. For staff use	

Submitter Information Verification

Committee: SIG-ECS
Submittal Date: Fri Jul 26 08:35:29 EDT 2019

Committee Statement

Committee Statement: Off-site is not the correct term. The term used throughout NFPA 72 is "off-premises." In addition, modifications have been made to the annex language as well.
Response Message: FR-5290-NFPA 72-2019

Public Input No. 230-NFPA 72-2019 [Section No. 24.10.2.3]
Public Input No. 237-NFPA 72-2019 [Section No. A.24.10.2.3]

SUBJECT TO REVISION - NOT FOR PUBLICATION FOR COMMITTEE USE ONLY

First Revision No. 5292-NFPA 72-2019 [Section No. 24.10.5]

24.10.5*

If the central control point is not constantly attended, the master control unit shall have a timed automatic communications capability to connect with an off-~~site~~ premises constantly attended monitoring location approved by the authority having jurisdiction, where trained personnel can initiate the appropriate response.

Supplemental Information

File Name	Description	Approved
A.24.10.5_Revised_Annex_Language.docx	See attached document for revisions to A.24.10.5. For staff use	

Submitter Information Verification

Committee: SIG-ECS
Submittal Date: Fri Jul 26 08:35:50 EDT 2019

Committee Statement

Committee Statement: Off-site is not the correct term. The term used throughout NFPA 72 is "off-premises." In addition, modifications have been made to the annex language as well.

Response Message: FR-5292-NFPA 72-2019

Public Input No. 238-NFPA 72-2019 [Section No. A.24.10.5]

Public Input No. 233-NFPA 72-2019 [Section No. 24.10.5]

SUBJECT TO REVISION - NOT FOR PUBLICATION - FOR COMMITTEE USE ONLY

First Revision No. 5293-NFPA 72-2019 [Section No. 24.10.6]

24.10.6*

In the event of an off-~~site~~ premise connection, a signal shall be transmitted to the off-~~site~~ premises monitoring location, identifying the specific building prior to initiating the live voice two-way communication.

Supplemental Information

File Name	Description	Approved
A.24.10.6_Revised_Annex_Language.docx	See attached document for revisions to A.24.10.6. For staff use	

Submitter Information Verification

Committee: SIG-ECS
Submittal Date: Fri Jul 26 08:36:24 EDT 2019

Committee Statement

Committee Statement: Off-site is not the correct term. The term used throughout NFPA 72 is "off-premises." In addition, modifications have been made to the annex language as well.
Response Message: FR-5293-NFPA 72-2019

Public Input No. 239-NFPA 72-2019 [Section No. A.24.10.6]
Public Input No. 231-NFPA 72-2019 [Section No. 24.10.6]

SUBJECT TO REVISION - NOT FOR PUBLICATION - FOR COMMITTEE USE ONLY

First Revision No. 5294-NFPA 72-2019 [New Section after 24.10.10]

24.10.11 Signage.

24.10.11.1

Directions for the use of the two-way communications system, instructions for summoning assistance via the two-way communications system, and written identification of the location shall be posted adjacent to the two-way communications system.

24.10.11.2

Signage shall comply with the ICC A117.1 requirements for visual characters.

Submitter Information Verification

Committee: SIG-ECS

Submittal Date: Fri Jul 26 08:37:50 EDT 2019

Committee Statement

Committee Statement: The language is pulled from IBC section 1009.8.2. These are the requirements the field is being asked to comply with. The Technical Committee adds requirements to provide guidance to the installers on what AHJs are enforcing.

Response Message: FR-5294-NFPA 72-2019

Public Input No. 243-NFPA 72-2019 [New Section after 24.10.10]

SUBJECT TO REVISION - NOT FOR PUBLICATION - FOR COMMITTEE USE ONLY

First Revision No. 5297-NFPA 72-2019 [New Section after 24.10.11]

24.11* Training for Two-Way Communcations Systems.

Operators of Two-way Communcations Systems shall be properly trained and qualified per 10.5.5 in the operation, handling and disatching of calls.

A.24.11 Training for Two-Way Communications Systems.

If the microphone is to be used by authorized personnel there should be backup personnel who are assigned and trained on the proper usage.

Submitter Information Verification

Committee: SIG-ECS
Submittal Date: Fri Jul 26 08:43:21 EDT 2019

Committee Statement

Committee Statement: The operation of these systems is unique and will require a person that is properly educated on how to receive, dispatch and process these calls. The issue of training becomes even more important when multiple calls are coming into the master unit and how those calls will be handled, priority, stacking etc.

Response Message: FR-5297-NFPA 72-2019

Public Input No. 431-NFPA 72-2019 [New Section after A.24.11]

Public Input No. 428-NFPA 72-2019 [New Section after 24.11]

SUBJECT TO REVISION - FOR COMMITTEE USE ONLY - NOT FOR PUBLICATION

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

First Revision No. 5301-NFPA 72-2019 [Section No. 24.11.1.2]

[See Attached Word Doc 72-2019_Chapter_ 24 _24-11-1-2]

24 .11.1.2

The emergency command center shall contain the following:

(1) The in-building fire emergency voice/alarm communications system equipment including:

(2) Fire alarm system controls

(3) Fire alarm system annunciator

(4) In-building fire emergency voice/alarm communications system controls

(5) Area of refuge (area of rescue assistance) emergency communications systems equipment

(6) Elevator emergency communications systems equipment

(7) Distributed recipient MNS control stations where provided

(8) Tables and chairs to accommodate emergency management staff

(9) Other equipment/information deemed necessary by the facility emergency response plan such as:

(10) Displays indicating the location of the elevators and whether they are operational

(11) Status indicators and controls for air-handling systems

(12) Fire fighter's control panel for smoke control systems

(13) Fire department communications unit

(14) Controls for unlocking stairway doors simultaneously

(15) Security systems

(16) Emergency and standby power status indicators

(17) Telephone for emergency use with controlled access to the public telephone system

(18) Schematic building plans indicating the typical floor plan and detailing the building core, means of egress, fire protection systems, security systems, fire-fighting equipment, and fire department access

(19) Generator supervision devices, manual start, and transfer features

(20) Other monitoring, control, information display, and management systems associated with operation of the ECC

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Supplemental Information

File Name	Description	Approved
72-2019_Chapter_24_24-11-1-2.docx	Word Document Clarifies Action on 24.11.1.2--for staff use	

Submitter Information Verification

Committee: SIG-ECS
Submittal Date: Fri Jul 26 09:12:00 EDT 2019

Committee Statement

Committee Statement: Emergency Command Center for Emergency Communications Systems omits a class of ECS: MNS as defined distinctly from in-building fire emergency voice/alarm communications systems (EVACS) in 24.3.7.1 (2): In-building mass notification system (see 24.5). This corrects that

omission.

Response Message: FR-5301-NFPA 72-2019

Public Input No. 374-NFPA 72-2019 [Section No. 24.11.1.2]

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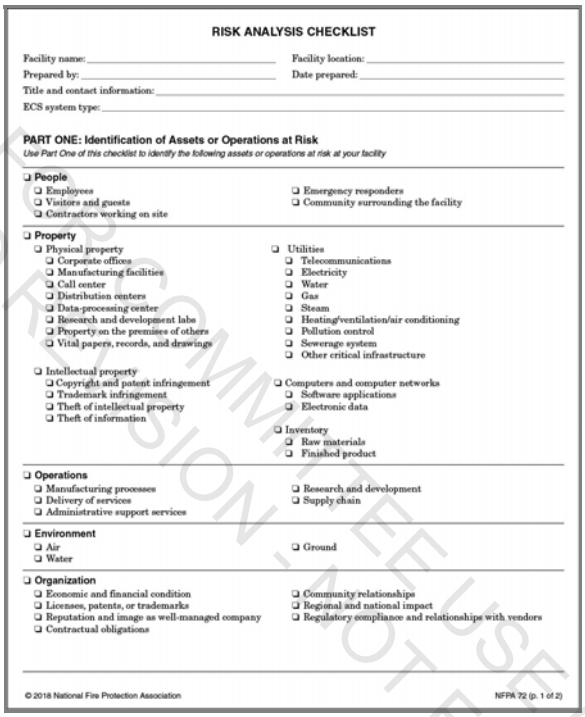
First Revision No. 5300-NFPA 72-2019 [Section No. A.7.3.6]

A.7.3.6

The Risk Analysis Checklist in Figure A.~~7~~ 7 .3.6 is not mandatory, but it can be used to initiate the thought process for identifying hazards in a facility.

In sentence below PART TWO, remove the word "may".

Figure A.7.3.6 Risk Analysis Checklist.



RISK ANALYSIS CHECKLIST

Facility name: _____ Facility location: _____
Prepared by: _____ Date prepared: _____
Title and contact information: _____
ECS system type: _____

PART ONE: Identification of Assets or Operations at Risk
Use Part One of this checklist to identify the following assets or operations at risk at your facility

❑ **People**
- ❑ Employees
- ❑ Visitors and guests
- ❑ Contractors working on site
- ❑ Emergency responders
- ❑ Community surrounding the facility

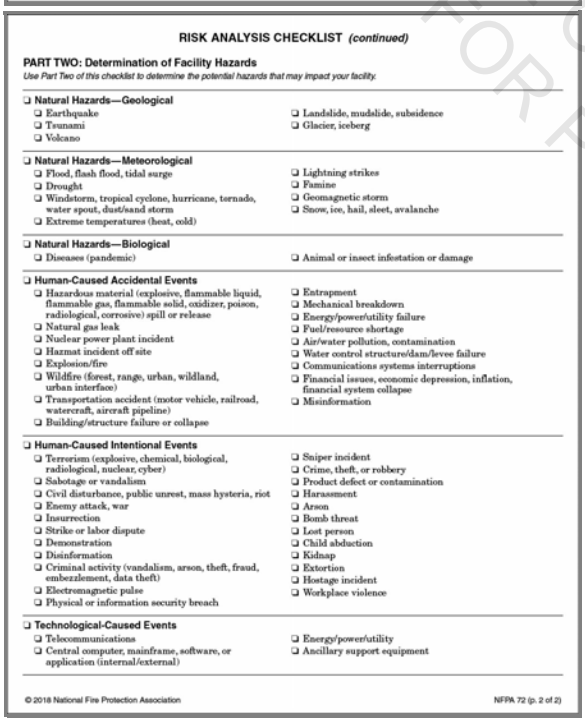
❑ **Property**
- ❑ Physical property
  - ❑ Corporate offices
  - ❑ Manufacturing facilities
  - ❑ Call center
  - ❑ Distribution centers
  - ❑ Data-processing center
  - ❑ Research and development labs
  - ❑ Property on the premises of others
  - ❑ Vital papers, records, and drawings
- ❑ Utilities
  - ❑ Telecommunications
  - ❑ Electricity
  - ❑ Water
  - ❑ Gas
  - ❑ Steam
  - ❑ Heating/ventilation/air conditioning
  - ❑ Pollution control
  - ❑ Sewerage system
  - ❑ Other critical infrastructure
- ❑ Intellectual property
  - ❑ Copyright and patent infringement
  - ❑ Trademark infringement
  - ❑ Theft of intellectual property
  - ❑ Theft of information
- ❑ Computers and computer networks
  - ❑ Software applications
  - ❑ Electronic data
- ❑ Inventory
  - ❑ Raw materials
  - ❑ Finished product

❑ **Operations**
- ❑ Manufacturing processes
- ❑ Delivery of services
- ❑ Administrative support services
- ❑ Research and development
- ❑ Supply chain

❑ **Environment**
- ❑ Air
- ❑ Water
- ❑ Ground

❑ **Organization**
- ❑ Economic and financial condition
- ❑ Licenses, patents, or trademarks
- ❑ Reputation and image as well-managed company
- ❑ Contractual obligations
- ❑ Community relationships
- ❑ Regional and national impact
- ❑ Regulatory compliance and relationships with vendors

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RISK ANALYSIS CHECKLIST *(continued)*

PART TWO: Determination of Facility Hazards
Use Part Two of this checklist to determine the potential hazards that may impact your facility.

❑ **Natural Hazards—Geological**
- ❑ Earthquake
- ❑ Tsunami
- ❑ Volcano
- ❑ Landslide, mudslide, subsidence
- ❑ Glacier, iceberg

❑ **Natural Hazards—Meteorological**
- ❑ Flood, flash flood, tidal surge
- ❑ Drought
- ❑ Windstorm, tropical cyclone, hurricane, tornado, water spout, dust/sand storm
- ❑ Extreme temperatures (heat, cold)
- ❑ Lightning strikes
- ❑ Famine
- ❑ Geomagnetic storm
- ❑ Snow, ice, hail, sleet, avalanche

❑ **Natural Hazards—Biological**
- ❑ Diseases (pandemic)
- ❑ Animal or insect infestation or damage

❑ **Human-Caused Accidental Events**
- ❑ Hazardous material (explosive, flammable liquid, flammable gas, flammable solid, oxidizer, poison, radiological, corrosive) spill or release
- ❑ Natural gas leak
- ❑ Nuclear power plant incident
- ❑ Hazmat incident off site
- ❑ Explosion/fire
- ❑ Wildfire (forest, range, urban, wildland, urban interface)
- ❑ Transportation accident (motor vehicle, railroad, watercraft, aircraft pipeline)
- ❑ Building/structure failure or collapse
- ❑ Entrapment
- ❑ Mechanical breakdown
- ❑ Energy/power/utility failure
- ❑ Fuel/resource shortage
- ❑ Air/water pollution, contamination
- ❑ Water control structure/dam/levee failure
- ❑ Communications systems interruptions
- ❑ Financial issues, economic depression, inflation, financial system collapse
- ❑ Misinformation

❑ **Human-Caused Intentional Events**
- ❑ Terrorism (explosive, chemical, biological, radiological, nuclear, cyber)
- ❑ Sabotage or vandalism
- ❑ Civil disturbance, public unrest, mass hysteria, riot
- ❑ Enemy attack, war
- ❑ Insurrection
- ❑ Strike or labor dispute
- ❑ Demonstration
- ❑ Disinformation
- ❑ Criminal activity (vandalism, arson, theft, fraud, embezzlement, data theft)
- ❑ Electromagnetic pulse
- ❑ Physical or information security breach
- ❑ Sniper incident
- ❑ Crime, theft, or robbery
- ❑ Product defect or contamination
- ❑ Harassment
- ❑ Arson
- ❑ Bomb threat
- ❑ Lost person
- ❑ Child abduction
- ❑ Kidnap
- ❑ Extortion
- ❑ Hostage incident
- ❑ Workplace violence

❑ **Technological-Caused Events**
- ❑ Telecommunications
- ❑ Central computer, mainframe, software, or application (internal/external)
- ❑ Energy/power/utility
- ❑ Ancillary support equipment

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SUBJECT TO REVISION - NOT FOR PUBLICATION FOR COMMITTEE USE ONLY

Submitter Information Verification

Committee: SIG-ECS
Submittal Date: Fri Jul 26 09:10:17 EDT 2019

Committee Statement

Committee Statement: The use of "may" does not comply with the MOS.
Response Message: FR-5300-NFPA 72-2019

Public Input No. 362-NFPA 72-2019 [Section No. A.7.3.6]

SUBJECT TO REVISION - NOT FOR PUBLICATION
FOR COMMITTEE USE ONLY

First Revision No. 5304-NFPA 72-2019 [Section No. A.24.3.12]

A.24.3.12

There are many credible risk assessment methodologies that can be utilized and/or referenced in conducting the risk assessment required in 24.3.12, some of which are listed as follows:

(1) *CARVER — Target Analysis and Vulnerability Assessment Methodology*, Washington, DC: U.S. Department of Defense (see Field Manual 34-36, Special Operation Forces Intelligence and Electronics Warfare Operation, Sept. 30, 1991), www.defense.gov

(2) *General Security Risk Assessment Guidelines*. Alexandria, VA: American Society for Industrial Security International, www.asisonline.org

(3) *NFPA 1600* Quincy, MA: National Fire Protection Association, www.nfpa.org

(4) NFPA 730 Quincy, MA: National Fire Protection Association, www.nfpa.org

(5) *Responsible Care Code*, Washington, DC: American Chemistry Council, www.americanchemistry.com

(6) *Risk and Resilience Management of Water & Wastewater Systems*, Denver, CO: American Water Works Association, www.awwa.org

(7) *VAMCAP® Vulnerability Assessment Methodology for Critical Asset Protection*, Wilmington, DE: SafePlace Corporation, www.safeplace.com

(8) *Vulnerability Assessment Methodologies*, Albuquerque, NM: Sandia National Laboratories, www.sandia.gov

(9) SFPE Engineering Guide to Fire Risk Assessment, www.sfpe.org.

Refer to A.~~7~~ 7 .8.2(1) and Figure A.~~7~~ 7 .3.6 for a risk analysis checklist.

Submitter Information Verification

Committee: SIG-ECS

Submittal Date: Fri Jul 26 09:27:59 EDT 2019

Committee Statement

Committee Statement: The SFPE Engineering Guide to Fire Risk Assessment is another credible resource that can provide guidance for the required risk assessment. Specifically, the SFPE Guide provides information that is focused on fire safety design.

Response Message: FR-5304-NFPA 72-2019

Public Input No. 293-NFPA 72-2019 [Section No. A.24.3.12]

SUBJECT TO REVISION - FOR COMMITTEE USE ONLY - NOT FOR PUBLICATION

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

First Revision No. 5312-NFPA 72-2019 [Section No. A.24.4.2.2.2]

A.24.4.2.2.2

Generally speaking, in a standard building configuration with normal ceiling height [8 ft to 12 ft (2.4 m to 3.7 m)], normal ceiling construction (e.g., drop acoustical ceiling tiles), standard wall configurations, and finishes and carpeted floors, ceiling-mounted loudspeakers should be installed in all normally occupiable spaces and in corridors spaced at a maximum of twice the ceiling height or as determined by a commercially available computer acoustical/loudspeaker modeling program. Where wall-mounted loudspeakers are used, manufacturer recommendations should be reviewed and/or computer modeling should be employed. One of the goals of loudspeaker placement is to provide the shortest practical distance from the source (loudspeaker) to the recipient (person hearing the signal). In many applications, a combination of wall- and ceiling-mounted loudspeakers might be required. The audibility and intelligibility of the loudspeakers can be impacted by the tap/setting at which the loudspeaker is connected and should meet the audibility requirements of the Code while still having the message intelligible. Connecting to a high setting to meet the audibility requirements of the Code could distort the intelligibility of the signal.

In an ADS that is a non-acoustically challenging area, designing for audibility will typically result in an intelligible system provided minimum loudspeaker guidelines are followed. Areas typically considered to be non-acoustically challenging include traditional office environments, hotel guest rooms, dwelling units, and spaces with carpeting and furnishings.

Special attention must be given to acoustically challenging ADSs. Such areas might incorporate appreciable hard surfaces (e.g., glass, marble, tile, metal, etc) or appreciably high ceilings (e.g., atriums, multiple ceiling heights). These conditions will require more stringent design guidelines to ensure intelligibility (e.g., a closer than normal loudspeaker spacing with lower taps). This can help reduce the effect of excessive reverberation and result in better intelligibility. In extreme cases there could be areas where intelligibility is not attainable, but this can be acceptable if there is an ADS within 30 ft (9.1 m) where the intelligibility of the system is deemed adequate.

In an ADS where the ambient noise level exceeds 85 dB it is acknowledged that intelligibility might not be attainable and, in such a case, an alternate means of notification ~~is~~ will likely be required.

Design guidance is provided in the NEMA Standards Publication SB 50-2008, *Emergency Communications Audio Intelligibility Applications Guide*.

Submitter Information Verification

Committee: SIG-ECS
Submittal Date: Fri Jul 26 09:46:17 EDT 2019

Committee Statement

Committee Statement: This is a grammatical change to improve clarity and intent and in keeping with parameters for Annex language. Only in those instances where intelligibility is not attainable due to the ambient level would additional appliances "likely" be required.

Response Message: FR-5312-NFPA 72-2019

Public Input No. 7-NFPA 72-2018 [Section No. A.24.4.2.2.2]

SUBMITTED FOR COMMITTEE USE ONLY
NOT FOR PUBLICATION

First Revision No. 5305-NFPA 72-2019 [Section No. A.24.7.6]

A.24.7.6

A distributed recipient mass notification system could support multiple server and multiple site configurations to achieve a “hot standby” failover configuration (i.e., no down time in case of failure in a single server), as well as to support higher load scenarios (e.g., more users). This could be accomplished with premises-based systems or hosted configurations.

Backup configuration can either be a net-centric system architecture located behind internet firewalls or hosted off-~~site~~ premises , outside the owner’s internet firewall utilizing a hosted software and hardware configuration operated and maintained by DRMNS provider(s), or incorporate features of both configurations.

Submitter Information Verification

Committee: SIG-ECS
Submittal Date: Fri Jul 26 09:34:41 EDT 2019

Committee Statement

Committee Statement: Off-site is not the correct term. Throughout 72, the term used is "off-premises."
Response Message: FR-5305-NFPA 72-2019

Public Input No. 235-NFPA 72-2019 [Section No. A.24.7.6]

SUBJECT TO REVISION - NOT FOR PUBLICATION
FOR COMMITTEE USE ONLY

First Revision No. 5307-NFPA 72-2019 [Section No. A.24.10]

A.24.10

Generally, an area of refuge (area of rescue assistance) two-way emergency communications system, a stairway communications system, an elevator landing communications system, and an occupant evacuation elevator lobby communications system are all members of the same system type fulfilling the same functions in different locations. These systems are required to be installed in different buildings by applicable building codes, and they are considered as life-safety emergency communication systems to be used by building occupants during fire and non-fire emergencies. Because they are similar and all are two-way emergency communications systems, it is appropriate that they are mandated by a common set of requirements. These systems are different in nature from the two emergency communications systems specified in 24.3.7.2(1) and 24.3.7.2(2) that are meant to be used by fire fighters or other first responders or emergency personnel.

“Areas of refuge” or “areas of rescue assistance” are areas that have direct access to an exit, where people who are unable to use stairs can remain temporarily in safety to await further instructions or assistance during emergency evacuation or other emergency situations. It is, therefore, important that a method to communicate exists between that remote location and a constantly attended location either within the building or at an off-~~site~~ premise remote location where appropriate action for assistance can be initiated by trained personnel.

Stairway communications systems are typically provided in high-rise buildings between the fire command center and remote points located at not less than every fifth floor in stairways where the stairway doors are locked from the stair side to prevent building re-entry. It is important that a method to communicate exists between that remote location in the stairs and a constantly attended location either within the building or at an off-~~site~~ premises remote location so that appropriate action for assistance can be initiated.

Elevator car communications systems should not be confused with an elevator landing communications system, or an occupant evacuation elevator lobby communications system. The elevator car two-way communications system is installed in accordance with the requirements of ASME A17.1/CSA B44, *Safety Code for Elevators and Escalators*. Inspection and testing of elevator car two-way communications systems is performed in accordance with ASME A17.2, *Guide for Inspection of Elevators, Escalators and Moving Walks*.

Submitter Information Verification

Committee: SIG-ECS
Submittal Date: Fri Jul 26 09:35:51 EDT 2019

Committee Statement

Committee Statement: Off-site is not the correct term. Throughout 72, the term used is "off-premises."
Response Message: FR-5307-NFPA 72-2019

Public Input No. 236-NFPA 72-2019 [Section No. A.24.10]

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NOT FOR PUBLICATION