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NEW CODES AND STANDARDS
AHCA VIRTUAL DESIGN & CONSTRUCTION SEMINAR
NOVEMBER 16 -18, 2020

NFPA 72[®] National Fire Alarm and Signaling Code[®] – 2016 Edition Update

Course Number: AHCA2020_17

Credit Designation: 1 LU| HSW

AIA CES Provider Number: E240

November 17, 2020



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OBJECTIVE

Learn how the new revisions NFPA 72 affect the fire/life safety of patients, residents, and staff inside of health care facilities.

2

OBJECTIVE

Understand how these requirements are directly related to the health and safety of patients such as private mode fire alarm signaling.

3

OBJECTIVE

Be able to apply the information from NFPA 72 to the next health care design such as special locking arrangements and be code compliant.

4

OBJECTIVE

Identify areas in NFPA 72 that have a direct impact on patient health and safety such as signaling requirements in open courts, inside of operating rooms, and inside critical care areas.

3

NFPA 72® – 2016 CHANGES

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NFPA 72® – 2016 CHANGES

AGENDA

NFPA 72 – 2016 Change/Update Review

NFPA 720 – What's the Future?



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Chapter 3 – Definitions

3.3.11 Alarm. An indication of the existence of a condition that requires immediate action response. (SIG-FUN)

- The definition was revised to better correlate with the new condition – response – concept and terminology.

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Chapter 3 – Definitions

3.3.67* Device (Class N). A supervised component of a life safety system that communicates with other components of life safety systems and that collects environmental data or performs specific input or output functions necessary to the operation of the life safety system. (SIG-PRO)

○ Added due to the addition of a new device and wiring type within the Code.

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Chapter 3 – Definitions

3.3.121.1 Mechanically Powered, Single-Station Heat Alarm. A single-station heat alarm employing a mechanical power source. (SIG-HOU)

○ This term was added as it is used within the Code, but has never been defined.



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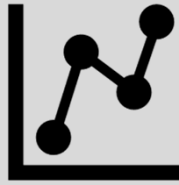


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Chapter 3 – Definitions

3.3.241 Response Time Index (RTI). A numerical value that represents the thermal response sensitivity of the sensing element in a heat detector, sprinkler, or other heat-sensing fire detection device to the fire environment in terms of gas temperature and velocity versus time. (See B.3.3.3.7) (SIG-IDS)

○ This definition has been placed back into the Code.



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Chapter 7 – Documentation

7.2.1*

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

(a) Point of compass (north arrow),

(b) A graphic representation of the scale used,

(c) Room use identification, and

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



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Chapter 7 – Documentation

(7) Battery calculations capacity and de-rating calculations (where batteries are provided)

LOCATION CRIME/PAUL			BATTERY CALCULATION		24 HOURS		
PANEL NOTIFICATION WBS 305			HOURS OF SUPERVISION MINUTES OF ALARM		5 MINUTES		
ITEM	QTY	S&C NUMBER	DESCRIPTION	Device Supervisory Current	Device Alarm Current	Total Supervisory Current	Total Alarm Current
1	1	001305	CONTROL PANEL	8.2500A	0.2500A	0.12500A	0.25000A
2	1	NONE	NOTIFICATION CARD	8.1000A	0.1000A	0.11000A	0.11000A
3	1	NONE	NOTIFICATION GATEWAY CARD	8.0000A	0.0000A	0.00000A	0.00000A
4	11	F1P4B1	SMOKE DETECTOR	8.0000A	0.0000A	0.00000A	0.07000A
5	3	F1P4B1	HEAT DETECTOR	8.0000A	0.0000A	0.00000A	0.11000A
6	0	NONE	PULL STATION	8.0000A	0.0000A	0.00000A	0.00000A
7	4	F1P4B1	RELAY MODULE	8.0000A	0.0000A	0.00000A	0.02400A
8	2	F1P4B1	RELAY MODULE	8.0000A	0.0000A	0.00000A	0.01200A
9	0	001	24H FIBRE	8.0000A	0.0000A	0.00000A	0.00000A
10	10	001	24H FIBRE	8.0000A	0.0000A	0.00000A	0.00000A
11	0	P2B1	24H FIBRE	8.0000A	0.0000A	0.00000A	0.11000A
12	1	P2B1	24H FIBRE	8.0000A	0.0000A	0.00000A	0.00000A
13	1	P2B1	24H FIBRE	8.0000A	0.0000A	0.00000A	0.00000A
14	0	P2B1	24H FIBRE	8.0000A	0.0000A	0.00000A	0.00000A
15	4	P2B1	24H FIBRE	8.0000A	0.0000A	0.00000A	0.00000A
16	1	P2B1	24H FIBRE	8.0000A	0.0000A	0.00000A	0.00000A
TOTAL				8.2500A	0.2500A	0.12500A	0.25000A
SUPERVISORY				8.2500A	0.2500A	0.12500A	0.25000A
24 HOURS OF SUPERVISORY				2.5000A	0.2500A	0.00000A	0.00000A
SUB TOTAL				1.0000A	0.0000A	0.00000A	0.00000A
ALARM				1.0000A	0.0000A	0.00000A	0.00000A
5 MINUTES OF ALARM				0.0000A	0.0000A	0.00000A	0.00000A
SUB TOTAL				0.0000A	0.0000A	0.00000A	0.00000A
TOTAL				1.0000A	0.0000A	0.00000A	0.00000A
TOTAL SUPERVISORY				1.0000A	0.0000A	0.00000A	0.00000A
TOTAL ALARM				1.0000A	0.0000A	0.00000A	0.00000A
TOTAL				1.0000A	0.0000A	0.00000A	0.00000A
GRADE OF 20% (GRADE)				0.8000A	0.0000A	0.00000A	0.00000A
MINIMUM BATTERY LIFE REQUIRED				1.0000A	0.0000A	0.00000A	0.00000A
BATTERY SUPPLY				1.0000A	0.0000A	0.00000A	0.00000A

BATTERY CALCULATIONS CONTROL PANEL

BATTERY CALCULATIONS CONTROL PANEL

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Chapter 7 – Documentation

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

Building Sound Pressure Levels		
Location / Space	Ambient Sound Pressure Levels (dB)	Audible Design Sound Pressure Levels (dB)
Business Occupancy Spaces (Offices, etc)	55	70
Corridors / Hallways / Lobby	50	65
Restrooms / Toilet Rooms	45	60
Mechanical Rooms	85	100
Boiler Rooms	80	95
Electrical / Communication Rooms	60	75
Elevator Cabs	55	70
Stairwells	50	65
Storage Rooms	40	55
Theater Spaces (Unoccupied)	55	70
Theater Spaces (Active Performance)	90	105
Musical Practice Rooms	85	100

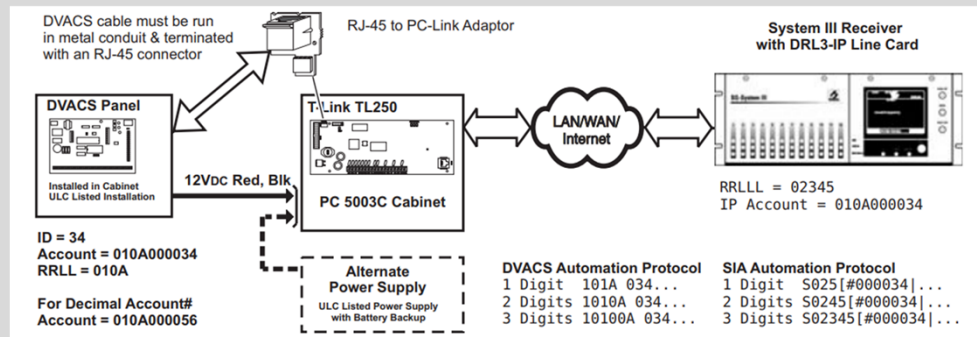
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Chart Courtesy of Jensen Hughes © 2020

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Chapter 7 – Documentation

(11) Pathway diagrams between the control unit, supervising station equipment and shared communications equipment.



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Chapter 7 – Documentation

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

- Added to the minimum of requirements for Shop Drawings so as to correlate with requirements listed elsewhere within the Code.



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Chapter 7 – Documentation

7.5.7.1.2 The passwords provided shall enable currently certified qualified programming personnel to access, edit, modify, and add to the existing system site-specific software.

- This text was added so as to assure that the system owner is able to obtain the required access credentials, which allow the system owner to determine who conducts future system programming for the installed systems.



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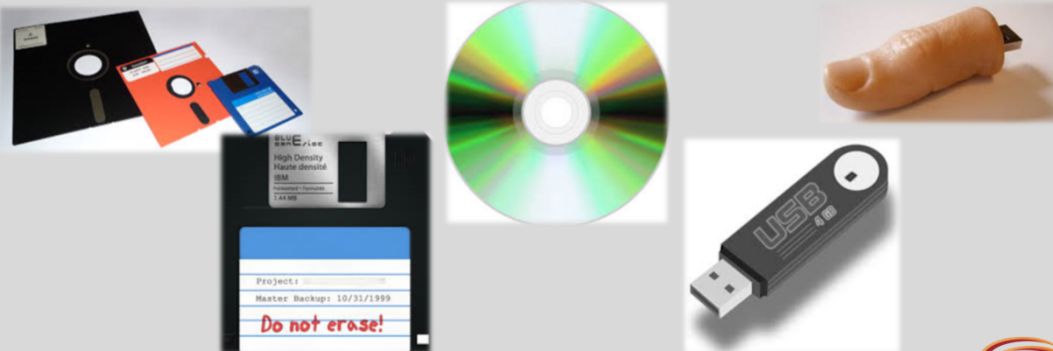


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Chapter 7 – Documentation

7.7.2.6* The building owner or the building owner's representative shall, on an annual basis, review any electronic documentation media formats and associated interfacing hardware for compatibility and update, if necessary.

- Technology changes. The electronic documentation must remain on a viable format.



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Chapter 10 – Fundamentals

10.5.1.5 System design trainees shall be under the supervision of a qualified system designer.

10.5.2.4 System installation trainees shall be under the supervision of a qualified system installer.

- These paragraphs were added so as to provide provisions for trainees to develop competence.



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Chapter 10 – Fundamentals

10.5.4 Plans Examiners and Inspectors.

10.5.4.1 Fire alarm system and emergency communications system plans and specifications submitted for review and approval shall be reviewed by personnel who are qualified to review such plans and specifications.

NFPA 1031, *Standard for Professional Qualifications for Fire Inspector and Plan Examiner* added to Chapter 2 References.



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Chapter 10 – Fundamentals

10.5.4.2 Fire alarm system and emergency communications system installations shall be inspected by personnel who are qualified to perform such inspections.

10.5.4.3 State or local licensure regulations shall be followed to determine qualified personnel.



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Chapter 10 – Fundamentals

10.5.4.4 Personnel shall provide documentation of their qualifications by one or more of the following:

(1) Personnel who are registered, licensed, or certified by a state or local authority

(2) Personnel who meet the requirements of NFPA 1031, *Standard for Professional Qualifications for Fire Inspector and Plan Examiner*

(3) Personnel who are assigned to perform plan reviews and inspections by the authority having jurisdiction

- This new section was added to the Code to recognize the need for qualifications for those that review plans and perform field acceptance inspections. The Correlating Committee is of the opinion that these requirements do fall under the scope of NFPA 72.

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Chapter 10 – Fundamentals

10.6.5.4 Circuit Breaker Lock. Where a circuit breaker is the disconnecting means, ~~a listed~~ an approved breaker locking device shall be installed.

- There is no listing for a breaker locking device.



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Chapter 10 – Fundamentals

10.11.3 Visible alarm strobe notification appliances shall not be activated when speaker notification appliances are used as permitted by 24.3.5 for non-emergency paging. (SIG-ECS)

- This new paragraph was added to the Code to clarify the intent for the operation of visible notification appliances.



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Chapter 12 – Circuits and Pathways

12.3.6 Class N. A pathway shall be designated as Class N when it performs as follows:

(1)* It includes two or more pathways where operational capability of the primary pathway and a redundant pathway to each device shall be verified through end-to-end communication.

Exception: When only one device is served, only one pathway shall be required.

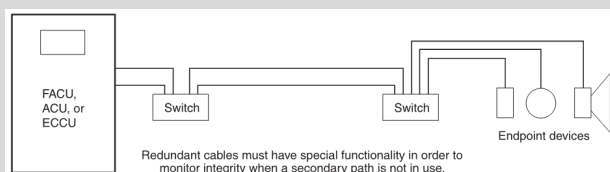


FIGURE A.12.3.6(1)(a) Class N Pathway Block Diagram – Example 1.

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Ethernet network devices are addressable but with an important distinction from device addresses on a traditional SLC multi-drop loop. A device with an Ethernet address is, in most cases, a physical endpoint connected to a dedicated cable. Traditional SLC devices are all wired on the same communication line (in parallel), similar to an old party-line telephone system. By comparison, Ethernet's network switches direct each data packet to its intended recipient device like our modern phone systems.

Class N uses redundant paths as a means to compensate for Ethernet wiring that does not report a single connection to ground, a basic requirement of Class B. Thus, the physical separation of Class A and Class X, and equipment redundancy described in 12.3.7, is not inherently required of Class N. In other words, failure of a single switch is permitted take down a class N segment and is only required to report the loss of communication. Where redundant path segments are intended to have survivability similar to Class A or Class X, the physical separation requirements and overall equipment redundancy must be specified in addition to the Class N designation.

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Chapter 12 – Circuits and Pathways

(2) A loss of intended communications between endpoints shall be annunciated as a trouble signal.

(3) A single open, ground, short or a combination of faults on one pathway shall not impact any other pathway.

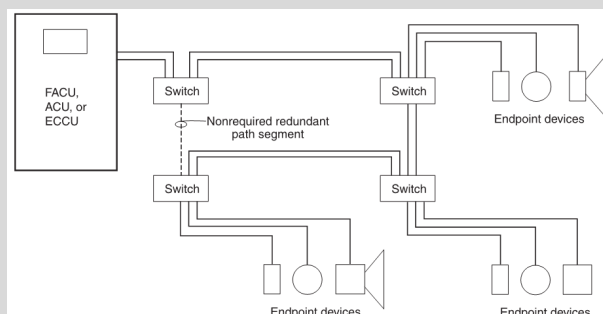


FIGURE A.12.3.6(1)(b) Class N Pathway Block Diagram – Example 2.

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Chapter 12 – Circuits and Pathways

(4)* Conditions that affect the operation of the primary pathway(s) and redundant pathway(s) shall be annunciated as a trouble signal when the system's minimal operational requirements cannot be met.

A.12.3.6(4) Operational conditions of the pathway include factors such as latency, throughput, response time, arrival rate, utilization, bandwidth, and loss. Life safety equipment connected to a Class N network actively monitors some or all of the pathway's operational conditions so that an improperly installed or configured pathway or a subsequently degraded pathway or segment is detected by the life safety equipment and reported as a trouble. The trouble condition is reported when operational conditions of the pathway(s) have deteriorated to the point where the equipment is no longer capable of meeting its minimum performance

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Chapter 12 – Circuits and Pathways

(5)* Primary and redundant pathways shall not be permitted to share traffic over the same physical segment

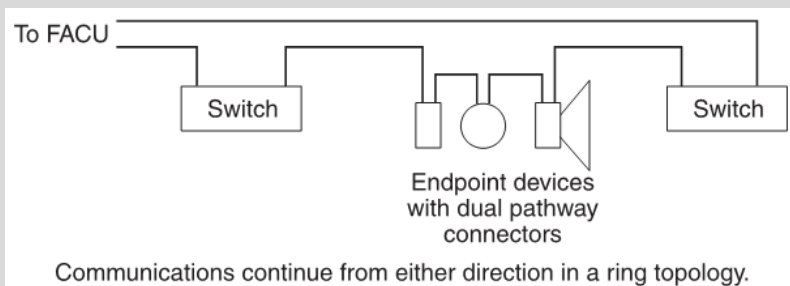


FIGURE A.12.3.6(5) Class N Pathway Block Diagram with Daisy-Chained Devices with Dual Pathway Connection.

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Chapter 14 – Inspection, Testing and Maintenance

14.2.2.2.4 In the event that any equipment is observed to be part of a recall program, the system owner or the system owner's designated representative shall be notified in writing.

- Equipment that is subject to a recall is a maintenance issue. This provision was added to the Code to provide direction.



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Chapter 14 – Inspection, Testing and Maintenance

Table 14.4.3.2 Line 4(f)

Where shared communications equipment is used as permitted by 26.6.3.1.14, provided secondary (standby) power sources shall be tested in accordance with Table 14.4.3.2, Sections 7, 8 or 9 as applicable.

- This new language is to remind the users of the Code that the shared communication equipment is required to be provided the same number of hours of secondary power as the fire alarm control equipment



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Chapter 17 – Initiating Devices

17.4.7 Where ~~smoke~~ fire detectors are installed in concealed locations more than 10 ft (3.0 m) above the finished floor or in arrangements where the detector's alarm or supervisory indicator is not visible to responding personnel, the detectors shall be provided with remote alarm or supervisory indication in a location acceptable to the authority having jurisdiction.



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Chapter 18 – Notification Appliances

18.4.1.4 Audible ~~notification appliances~~ for alert and evacuation signal tones shall meet the requirements of 18.4.3 (Public Mode Audible Requirements).....as applicable.

- This requirement shall include audible tones that precede or follow voice messages.



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Chapter 18 – Notification Appliances

18.4.5.3* ~~Effective January 1, 2014, audible~~ Audible appliances provided for the sleeping areas to awaken occupants shall produce a low frequency alarm signal that complies with the following:

- *The notification equipment shall be listed for producing the low frequency waveform



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Chapter 18 – Notification Appliances

18.5.3.2* The maximum light pulse duration shall be 20 milliseconds (0.02 seconds) with a maximum duty cycle of 40 percent.

Exception: Lights used to meet the requirements of 18.5.5.5 shall be permitted to be listed and labeled to have pulse durations up to 100 milliseconds.
(Corridors)



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Chapter 21 – Emergency Control Function Interfaces

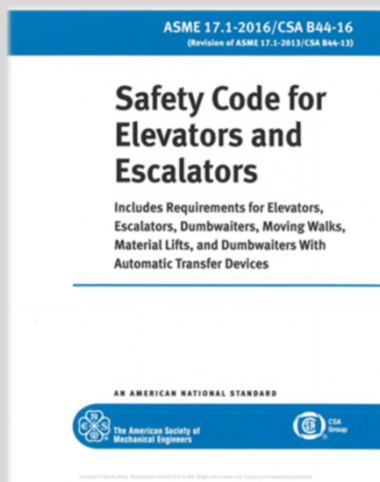
21.2.6 The installation wiring between the fire alarm control unit and the emergency control function interface device shall be Class A, Class B, Class D, Class N, or Class X in accordance with Chapter 12.

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Chapter 21 – Emergency Control Function Interfaces



Terms and usage modified throughout to correlate with ASME A17.1, Safety Code for Elevators and Escalators.

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Chapter 21 – Emergency Control Function Interfaces

21.3.2* In facilities without a required building fire alarm system, fire alarm initiating devices used to initiate elevator Phase 1 Emergency Recall Operation shall be connected to either a nonrequired building fire alarm system or a dedicated function fire alarm control unit that shall be designated as “elevator recall control and supervisory control unit,” permanently identified on the dedicated function fire alarm control unit and on the record drawings.

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Chapter 21 – Emergency Control Function Interfaces

21.3.7* When sprinklers are ~~installed~~ required in elevator hoistways by other codes or standards, fire alarm initiating devices shall be installed to initiate elevator recall in accordance with 2.27.3.2.1(c) of ANSI/ASME A.17.1/CSA B44, Safety Code for Elevators and Escalators



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Chapter 23 – Protected Premises Fire Alarm Systems

23.2.2.1 A record of installed software and firmware version numbers shall be prepared and maintained in accordance with Sections 7.5 and 7.7.

- 7.5 Completion Documentation.
- 7.7 Records, Records Retention, and Records Maintenance.

4. DESCRIPTION OF SYSTEM OR SERVICE

This is a: ☒ New system ☐ Modification to existing system Permit number: 11-907645
 NFPA 72 edition: 2013

4.1 Control Unit

Manufacturer: Halter Cabinet Model number: 1019-7647

4.2 Software and Firmware

Firmware revision number: 7.0 B Executive Rev 9.11

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Chapter 23 – Protected Premises Fire Alarm Systems

23.6 Performance of Signaling Line Circuits (SLCs).

The assignment of class designations to signaling line circuits shall be based on their performance capabilities under abnormal (fault) conditions in accordance with the requirements for Class A, Class B, Class N, or Class X pathways specified in Chapter 12.

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Chapter 23 – Protected Premises Fire Alarm Systems

23.6.1* SLC Zones.

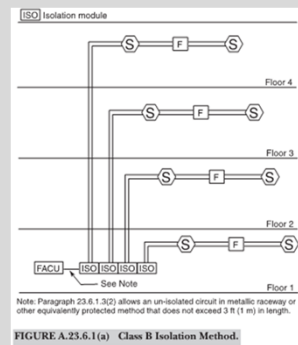
A single fault on a pathway connected to the addressable devices shall not cause the loss of the devices in more than one zone.

- Removed 50 device maximum loss during one fault condition.

What's a zone?

Zone = Each Floor (23.6.1.1)

Zone = Each Smoke Zone if Relocation is used (23.6.1.2)



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Chapter 23 – Protected Premises Fire Alarm Systems

A.23.6.1* SLC Zones.

A single zone **could** be designated in the following ways:

- By floor where an SLC would not span multiple floors
- By floor area, where a large floor would be split into multiple zones based on a maximum floor area size (e.g., 22,500 ft²)
- By fire barrier or smoke barrier compartment boundaries, which an SLC would not cross
- By maximum length or circuit, where an SLC would not be longer than a predetermined length (e.g., 300 ft.)

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Chapter 23 – Protected Premises Fire Alarm Systems

23.6.1.3* The requirements in 23.6.1 shall not apply to the following:

Circuits between enclosures containing transponders and control units regardless of the number of initiating devices, notification appliances, or control relays that might be connected to those control units.

Circuits connecting short-circuit fault isolation modules to enclosures containing transponders and control units where the conductors are installed in metallic raceway or equivalently protected against mechanical injury and where the circuit does not exceed 3 ft. (1 m) in length.

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Chapter 23 – Protected Premises Fire Alarm Systems

23.6.1.4 The loss of more than one zone shall be permitted on a documented performance-based design.

23.6.1.5* Performance-based designs submitted to the authority having jurisdiction for review and approval shall include documentation, in an approved format, of each performance objective and applicable scenario, together with technical substantiation used in establishing the proposed zone performance.

- Added to provide better clarity as to what is required for designers in order to exercise the performance-based alternative.

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Chapter 23 – Protected Premises Fire Alarm Systems

23.6.2 Class N Devices.

No area or zone shall be serviced solely by a single device where Class N pathways are deployed, such that a single device failure would render an area or zone incapable of initiating input signals or receiving output signals.

Exception: When a risk analysis is performed to determine areas where a single device is sufficient and acceptable to the authority having jurisdiction.

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Chapter 23 – Protected Premises Fire Alarm Systems

23.6.3 **Class N Shared Pathways.**

Class N pathways shall be required to use shared pathway Level 3 as specified in 12.5.4 except as permitted by 23.6.3.1 through 23.6.3.8.

23.6.3.1 Level 1 and Level 2.

Shared pathways Levels 1 and 2 shall be permitted subject to a thorough written analysis of the risks, the maintenance plans, roles and responsibilities, and a deployment plan as identified in 23.6.3.3 and when approved by an AHJ in consideration of the analysis, maintenance, and deployment plans

12.5.1* Shared Pathway Level 0. Level 0 pathways shall not be required to segregate or prioritize life safety data from non-life safety data.

12.5.2* Shared Pathway Level 1. Level 1 pathways shall not be required to segregate life safety data from non-life safety data, but shall prioritize all life safety data over non-life safety data.

12.5.3* Shared Pathway Level 2. Level 2 pathways shall segregate all life safety data from non-life safety data.

12.5.4* Shared Pathway Level 3. Level 3 pathways shall use equipment that is dedicated to the life safety system.

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Chapter 23 – Protected Premises Fire Alarm Systems

23.6.3.3 Deployment Plan.



23.6.3.3.1 All equipment connected to shared pathways be documented in the deployment plan.

23.6.3.3.1.1 The documentation shall include manufacturer, model, listings, and intended purpose and reason for inclusion on the shared network.

23.6.3.3.1.2 The deployment plan shall identify how and where each piece of equipment is connected.

23.6.3.3.2 All connection ports, used or spare, where any unauthorized or unintended equipment may be added to the shared network, shall be identified as for use only by equipment consistent with the deployment plan.

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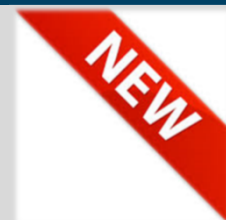


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Chapter 23 – Protected Premises Fire Alarm Systems

23.6.3.4 Change Control Plan.

Configuration upgrades and updates shall be governed by a change control plan, which determines the policy and procedure of the change and ensures that all documentation is correspondingly updated.



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Chapter 23 – Protected Premises Fire Alarm Systems

23.6.3.5 Management Organization.

23.6.3.5.1 An organization shall be established and maintained to manage the life safety network and shall perform the following tasks:

- (1) Contain members appropriately certified by each manufacturer of the equipment and devices deployed on shared pathways to maintain such a network
- (2) Service and maintain all shared Class N pathways
- (3) Maintain the deployment and shared pathways plan for the lifetime of the shared pathways

23.6.3.6 Analysis.

23.6.3.6.1 The analysis shall be performed to determine and document communications capability as follows:

- (1) Calculation of minimum required bandwidth such that all life safety systems can be guaranteed to operate simultaneously and within required time limits
- (2) Total bandwidth provided by the network
- (3) Future bandwidth requirements
- (4) Method of providing and maintaining the prioritization of life safety traffic over non-life safety traffic

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Chapter 23 – Protected Premises Fire Alarm Systems

23.6.3.7 Maintenance Plan.

23.6.3.7.1 The maintenance plan shall identify policy and procedures to monitor, maintain, test, and control change of the shared pathways.

23.6.3.7.2 Written procedures shall be presented in maintenance plans to govern the following:

- (1) Physical access to all parts of the Class N network equipment (i.e., switches, ports, server, controllers, devices, or components)
- (2) Electronic access to all parts of the Class N network (i.e., passwords, addresses)
- (3)*Service outage impairment process with notices of impairment and contingency plans for affected systems
- (4) Upgrade procedures
- (5) Change control procedures, with consideration given to require an updated risk analysis if necessary
- (6) Prioritization and/or segregation configuration information for life safety traffic
- (7) Maintenance and testing plans to ensure the minimum operational capacity with respect to secondary power is maintained
- (8) Other service, maintenance, or reconfiguration plans for any connected equipment



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Chapter 24 – Emergency Communications Systems

24.3.1 Intelligible Voice Messages.

NEW

24.3.1.2 * Where no listed loudspeaker exists to achieve the intelligibility requirements of the Code for a notification zone, nonlisted loudspeakers shall be permitted to be installed to achieve the intelligibility for that notification zone.



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Chapter 24 – Emergency Communications Systems

24.3.5.4 Where emergency communications systems utilize Class N pathways that are also shared Level 1 or Level 2 pathways as a means to support ancillary functions, devices, or interconnected systems, the shared pathways shall meet the requirements of 23.6.3.

24.3.5.4.1 In addition to the requirements of 23.6.3, a risk analysis shall be performed and approved by the AHJ.

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Chapter 24 – Emergency Communications Systems

24.3.6 Messages for One-Way Emergency Communications Systems.

24.3.6.2* 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

Annex G Guidelines for Emergency Communication Strategies for Buildings and Campuses

24.3.6 Messages for One-Way Emergency Communications Systems.

24.3.6.1* Messages shall be developed for each scenario developed in the emergency response plan.

24.3.6.2* 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.

24.3.6.3* A message template shall be developed for each message required in 24.3.6.1.

24.3.6.4 For an evacuation message, a tone in accordance with 18.4.2 shall be used with a minimum of two cycles preceding and following the voice message.

24.3.6.5 Test messages shall clearly state the phrase "This is a test."

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Chapter 24 – Emergency Communications Systems

24.3.17* System Classification.

24.3.7* System Classification. Emergency communications systems (ECS) shall be designated as one-way or two-way.

24.3.7.1 One-way emergency communications systems shall consist of one or more of the following:

- (1) In-building fire emergency voice/alarm communications systems (EVACS) (*see Section 24.4*)
- (2) In-building mass notification systems (*see Section 24.5*)
- (3) Wide-area mass notification systems (*see Section 24.6*)
- (4) Distributed recipient mass notification systems (DRMNS) (*see Section 24.7*)

24.3.7.2 Two-way emergency communications systems shall consist of one or more of the following:

- (1) Two-way, in-building wired emergency services communications systems (*see Section 24.8*)
- (2) Two-way radio communications enhancement systems (*see Section 24.9*)
- (3) Area of refuge (area of rescue assistance) emergency communications systems (*see Section 24.10*)
- (4) Elevator emergency communications systems (*see Section 24.11*)
- (5) Stairway communications systems (*see Section 24.12*)

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Chapter 24 – Emergency Communications Systems

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:

1. ANSI/UL 864, Standard for Control Units and Accessories for Fire Alarm Systems
2. ANSI/UL 2017, Standard for General-Purpose Signaling Devices and Systems
3. ANSI/UL 2572, Mass Notification Systems

24.3.10 Listing. Control units installed as part of a mass notification system shall be in compliance with this Code and applicable standards such as ANSI/UL 864, *Standard for Control Units and Accessories for Fire Alarm Systems*, or ANSI/UL 2017, *Standard for General-Purpose Signaling Devices and Systems*, or ANSI/UL 2572, *Mass Notification Systems*.

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Chapter 24 – Emergency Communications Systems

24.3.13.4.1 For systems employing relocation or partial evacuation, a Level 2 or Level 3 pathway survivability shall be required.

Exception No. 1: Level 1 shall be permitted where notification or evacuation zones are separated by less than 2-hour fire-rated construction.

Exception No. 2: Level 1 shall be permitted where there are at least two pathways provided that are separated by at least one-third the maximum diagonal of the notification or evacuation signaling zones that the pathways are passing through and the pathway is Class X or Class N.

- Address situations where the cabling rating would need to exceed the building construction and provide options for robustness through redundancy and performance.

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Chapter 24 – Emergency Communications Systems

24.3.13.7 Two-way in-building wired emergency communications systems shall have a pathway survivability of Level 2 or Level 3.

Exception: Level 1 shall be permitted where the building is less than 2-hour fire-rated construction.

24.3.13.9.1 Area of refuge emergency communications systems shall have a pathway survivability of Level 2 or Level 3.

Exception: Level 1 shall be permitted where the building is less than 2-hour fire-rated construction.

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Chapter 24 – Emergency Communications Systems

24.5.14* **Mounting of LOC Controls**

24.5.14* Mounting of LOC Controls

24.5.14.1 Controls that are intended to be accessed by authorized users shall be mounted in accordance with 24.5.14.

24.5.14.2 LOC controls, including switches, microphone, latches, and so forth, shall be located above the finished floor a minimum of 36 in. (91 cm) and a maximum of 48 in. (122 cm) where the horizontal reach is less than 10 in. (25 cm).

24.5.14.3 If a horizontal reach of 10 in. (25 cm) to 24 in. (61 cm) is required, the maximum elevation shall be limited to 42 in. (107 cm) above the finished floor and the minimum elevation shall be limited to 28 in. (71 cm).

24.5.14.4 Text and visual indicators, including lamps, screens, displays, instructions, or labels, associated with control or operation shall be visible within all points of elevation between 40 in. (102 cm) and 60 in. (152 cm) above the finished floor.

24.5.14.5 Where controls and information are provided in accordance with 24.5.14.2 through 24.5.14.4, provision of additional or redundant controls shall be permitted within the same vicinity at an elevation or reach other than those indicated.

24.5.14.6 Dimensions other than those identified in 24.5.14.2 through 24.5.14.4 shall be permitted when documented within the emergency response plan that ADA guidelines are not applicable, or when otherwise required by the AHJ.



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Chapter 24 – Emergency Communications Systems

24.5.18.8 Addressable primary textual and graphical visible appliances using signaling line circuits shall meet the performance requirements of Section 23.6.

→ **SLC**

24.5.18.9 Non-addressable primary textual and graphical visible appliance circuits shall meet the performance requirements of Section 23.7.

→ **NAC**



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Chapter 24 – Emergency Communications Systems

Two-Way Radio Communications Enhancement Systems

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.

- All requirements previously in chapter 24 have been deleted.



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Chapter 24 – Emergency Communications Systems

24.10* Area of Refuge (Area of Rescue Assistance) Emergency Communications Systems.

24.10.3 The remote area of refuge stations and the central control point shall communicate with each other via pathways based on their performance capabilities under abnormal (fault) conditions in accordance with the requirements for **Class A, Class B, Class N, or Class X** pathways specified in Chapter 12.

24.10.4 All pathways between a remote area of refuge station and the central control point ***shall be monitored for integrity.***



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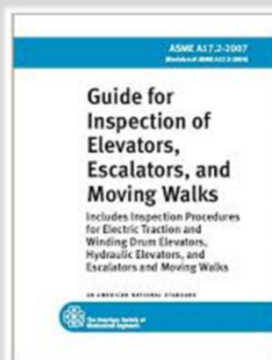


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Chapter 24 – Emergency Communications Systems

24.11 Elevator Emergency Communications Systems:

- *Installed per ANSI/ASME A17.1*
- *Inspection and Testing per ANSI/ASME A17.2*



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Chapter 24 – Emergency Communications Systems



24.12* Stairway Communications Systems.

24.12.1 Where required by the building code in force and not included as part of another emergency communications system, a stairway communications system shall be installed in accordance with 24.12.

24.12.2 The stairway communications system shall be permitted to be integrated with another two-way emergency communications system providing it is installed in accordance with 24.12.

24.12.3 The stairway communications system shall comprise remotely located communications points and a central control point.

24.12.4 Each remote point shall have the capability to communicate with the central control point.

24.12.5* Quantity and locations of the remote communications points shall be as required by the building code in force and engineer specifications.

24.12.6* If the central control point is not constantly attended, it shall have a timed automatic communications capability to connect with a constantly attended monitoring location acceptable to the authority having jurisdiction where responsible personnel can initiate the appropriate response.

24.12.7 The physical location of the central control point shall be as designated by the building code in force or the authority having jurisdiction.

24.12.8 The remote communications points shall provide for two-way communications, provide an audible and visible signal to indicate communication has occurred, and indicate to the receiver the location sending the signal.

24.12.9 Instructions for the use of the stairway communications system, instructions for summoning assistance via the system, and written identification, including in braille, of the location shall be posted adjacent to each remote communications point.

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Chapter 26 – Supervising Station Alarm Systems

26.2.1.3 Fire alarm signals received at the supervising station by a **zone or zones** shall be **retransmitted by zone** to the communications center.

26.2.1.4 Fire alarm signals received at the supervising station that are identified as an **individual point or points** shall be **retransmitted by point** identifier to the communications center.

- If the supervising station receives signals from a protected premises with a specific description such as “Sprinkler Riser 1 – First Floor” or “3rd Floor Elevator Lobby Smoke Detector,” this information is required to be retransmitted to the communications center.

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Chapter 26 – Supervising Station Alarm Systems

26.2.6* **Change of Service.**

26.2.6.1* Supervising station customers or clients and the authority having jurisdiction shall be notified in writing by the new supervising station within 30 calendar days of any change of service provider that results in signals from the client's property being handled by a new supervising station.

26.2.6.2 (who is responsible to complete required testing and time frame)

26.2.6.3 (who is responsible for notifications)

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Chapter 26 – Supervising Station Alarm Systems

26.6.3.4 **Multiple Communications Paths.** If multiple transmission paths are used, the following requirements shall be met:

1. Each path shall be supervised within not more than 6 hours.
2. The failure of any path of a multipath system shall be annunciated at the supervising station within not more than 6 hours.
3. Multiple communications paths shall be arranged so that a single point of failure shall not cause more than a single path to fail.
4. The failure to complete a signal transmission shall be annunciated at the protected premises in accordance with Section 10.15.

26.6.3.5* **Single Technology.** A single technology shall be permitted to be used to create the multiple paths provided that the requirements of 26.6.3.4(1) through 26.6.3.4(4) are met.

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Chapter 26 – Supervising Station Alarm Systems

26.6.3.13* **Secondary Power.**

26.6.3.13.1 Premises Equipment. The secondary power capacity for all transmitters and shared equipment necessary for the transmission of alarm, supervisory, trouble, and other signals located at the protected premises shall be a minimum of 24 hours or as permitted by 10.6.7.3.1 (2).

Exception: Secondary power capacity for shared equipment shall be permitted to have a capacity of 8 hours where acceptable to the authority having jurisdiction and where a risk analysis is performed to ensure acceptable availability is provided.

- The 2013 edition did not allow for installations with an automatic-starting generator to permit the reduction of secondary power to 4 hours. Now, any equipment included in the transmission of signals must either meet the 24 hour requirement or the permitted 4 hour requirement with a generator, just as the FACU is permitted to do.

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Chapter 27 – Public Emergency Alarm Reporting Systems

27.8 Emergency Communications Systems (ECS).

27.8 Emergency Communications Systems (ECS).

27.8.1* ECS shall be permitted to be connected to public emergency alarm reporting systems.

27.8.2 ECS equipment and interface methods connecting to or utilizing public emergency alarm reporting systems shall be electrically and operationally compatible so as not to interfere with the public emergency alarm reporting systems.

27.8.1* Public emergency alarm reporting systems that are capable of two-way wired or wireless communications with command and control capabilities and/or voice communications capabilities shall be permitted to be used as part of the communications infrastructure of an emergency communications system (ECS), provided that it does not interfere with the public emergency alarm reporting system.

27.8.2 The method of interfacing and monitoring for integrity between the public emergency alarm reporting system and the ECS shall be in accordance with 27.6.3.2.3 and treated as an auxiliary alarm system connected to a protected premises.

27.8.3 Wired or wireless alarm boxes shall be permitted for shared use with an emergency communications system and shall meet all the requirements of Chapter 27.

27.8.4 Trouble and alarm indications in the emergency communications system shall be visually and audibly annunciated at the communications center, except under fault conditions that prevent such a notification process.

27.8.5 When a fault condition prevents communications between the ECS and the communications center, an audible and visual trouble indication shall be activated at the fire command center in the protected premises.

27.8.6 Communications between the public emergency alarm reporting system and the emergency communications system shall be monitored for integrity, and faults shall be annunciated at the communications center, as well as at the fire command center or the emergency command center or both, in the protected premises.

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Chapter 29 – Single- and Multi-Station Alarms and Household Fire Alarm Systems

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

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

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Chapter 29 – Single- and Multi-Station Alarms and Household Fire Alarm Systems

29.7.9.1.3.2 Where a communication or transmission means other than DACT is used, all equipment necessary to transmit an alarm signal shall be provided with a minimum of 24 hours of secondary power capacity and shall report a trouble condition indicating loss of primary power.



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Chapter 29 – Single- and Multi-Station Alarms and Household Fire Alarm Systems

29.8.3.4 Specific Location Requirements.

The installation of smoke alarms and smoke detectors shall comply with the following requirements:

(5) Effective January 1, ~~2016~~ 2019, smoke alarms and smoke detectors used in household fire alarm systems installed between 6 ft. (1.8 m) and 20 ft. (6.1 m) along a horizontal floor path from a stationary or fixed cooking appliance shall be listed for resistance to common nuisance sources from cooking.

2019 Edition changes this to January 1, 2022

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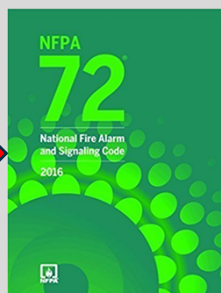
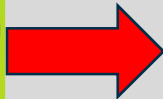
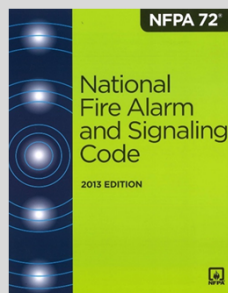
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NFPA 72® – 2016 CHANGES

AGENDA

NFPA 72 – 2016 Change/Update Review

NFPA 720 – What's the Future?



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NFPA 720

During the 2016 Cycle of NFPA 72, preliminary discussions were held at the Correlating Committee about merging the CO standard into NFPA 72.

Permission was granted from the Standards Council to merge the documents.

Working group assignments were made to move all relevant information from NFPA 720 to NFPA 72 (2019).

NFPA 720 went through the 2018 cycle since it was already started; the 2018 edition was never published and it has now been merged into NFPA 72 (2019).



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NFPA 720

Merger Matrix

NFPA 720-2015	NFPA 72-2019
Chapter 1 – Administration	Chapter 1 – Administration
Chapter 2 – Referenced Publications	Chapter 2 – Referenced Publications
Chapter 3 – Definitions	Chapter 3 – Definitions
Chapter 4 – Fundamentals	Chapter 10 – Fundamentals
Chapter 5 – Protected Premises	Chapter 23 – Protected Premises
Chapter 6 – Notification Appliances	Chapter 18 – Notification Appliances
Chapter 7 – Off-Premises	Chapter 26 – Supervising Station
Chapter 8 – ITM	Chapter 14 – ITM
Chapter 9 – Household	Chapter 29 – Household

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QUESTIONS?

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