



MEMORANDUM

TO: NFPA Technical Committee on Electronic Computer Systems

FROM: Joanne Goyette, Technical Projects Administrator

DATE: August 5, 2010

SUBJECT: NFPA 75 ROP TC Letter Ballot (F11)

The ROP letter ballot for NFPA 75 is attached. The ballot is for formally voting on whether or not you concur with the committee's actions on the proposals. Reasons must accompany all negative and abstention ballots.

Please do not vote negatively because of editorial errors. However, please bring such errors to my attention for action.

Please complete and return your ballot as soon as possible but no later than **Thursday, August 19, 2010**. As noted on the ballot form, please return the ballot to Joanne Goyette either via e-mail to jgoyette@nfpa.org or via fax to 617-984-7110. You may also mail your ballot to the attention of Joanne Goyette at NFPA, 1 Batterymarch Park, Quincy, MA 02169.

The return of ballots is required by the Regulations Governing Committee Projects.

Attachment: Proposals

75-1 Log #82
(Title)

Final Action: Accept

Submitter: Stephen McCluer, APC by Schneider Electric

Recommendation: Request Technical Correlating Committee to revise the name of the document as follows:
Standard for the Fire Protection of Information Technology Equipment.

Substantiation: Per paragraph 1.2 (Purpose), "The purpose of this standard is to set forth the minimum requirements for the protection of information technology equipment... from damage by fire or its associated effects...".

The existing title would lead one to think that NFPA 75 is a design guide for how to design an ITE space to protect it against such things as natural events (storms, earthquakes, etc.), civil events (wars, riots) security breaches, (arson or sabotage), or other non-fire-related events. Although some of these are touched upon in Annex commentary, none of these issues are within the scope of the document. This document does not include design for efficiency, design for environment, or design for reliability and availability. The title should reflect its scope and be clear that this is a standard strictly for FIRE protection.

Committee Meeting Action: Accept

75-2 Log #CP9
(1.3)

Final Action: Accept

Submitter: Technical Committee on Electronic Computer Systems,

Recommendation: Revise text to read as follows:

~~1.3 Application. The application of this standard is based on the risk considerations outlined in Chapter 4. The mere presence of the information technology equipment shall not constitute the need to invoke the requirements of this standard.~~

1.3 Application. The application of this standard is based on the risk considerations outlined in Chapter 4.

1.3.1 A documented risk assessment shall be the basis for implementation of this Standard or portions thereof.

1.3.2 The mere presence of the information technology equipment shall not constitute the need to invoke the requirements of this standard.

Substantiation: The proposed changes reinforce the risk-based nature of the document as articulated in the Application of the document. The text in the previous edition infers that the risk-analysis serves as an on/off switch for whether NFPA 75 applies. The proposed text allows the user of the Standard to determine the level of protection of ITE areas based on the risk assessment as outlined in Chapter 4.

Committee Meeting Action: Accept

75-3 Log #1
(2.2)

Final Action: Accept

Submitter: Stanley Kaufman, CableSafe, Inc. / Rep. The Society of the Plastics Industry

Recommendation: Delete text to read as follows:

~~NFPA 255, *Standard Method of Test of Surface Burning Characteristics of Building Materials*, 2006 edition.~~

Substantiation: NFPA 255 has been withdrawn.

Committee Meeting Action: Accept

75-4 Log #75
(2.3.2)

Final Action: Accept

Submitter: Bob Eugene, Underwriters Laboratories Inc.

Recommendation: Revise text to read as follows:

2.3.2 UL Publications.

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

ANSI/UL 72, Standard for Tests for Fire Resistance of Record Protection Equipment, 2001, including revisions through August 18, 2005 November 6, 2009.

~~UL 478, Standard for Electronic Data-Processing Units and Systems, 1980:~~

ANSI/UL 723, Standard for Test for Surface Burning Characteristics of Building Materials, 2003-2008.

ANSI/UL 900, Standard for Air Filter Units, 2004, including revisions through November 6, 2009.

~~UL 1950, Standard for Safety of Information Technology Equipment, 1995:~~

UL 60950, Safety of Information Technology Equipment, 2000, including revisions through October 30, 2007.

ANSI/UL 60950-1, Information Technology Equipment — Safety — Part 1: General Requirements, 2003-2007.

Substantiation: ANSI/UL 72 was reaffirmed in November 2009. UL 478 has been withdrawn in 1990 and replaced by UL 60950-1. A new edition of ANSI/UL 723 was published in September 2008. UL 60950-1 replaced UL 1950 in 2005.

UL 60950-1 replaced UL 60950. A new edition of ANSI/UL 60950-1 was published in 2007. ANSI approval designations have been added as applicable. Edition and revision dates are updated.

Committee Meeting Action: Accept

75-5 Log #83

(3.2.4, 10.4.4(1), and 10.4.4(6))

Final Action: Reject

Submitter: Stephen McCluer, APC by Schneider Electric

Recommendation: Global editorial comment - Request Technical Committee to find alternative language to be used in place of the word “suitable”

Substantiation: The word “suitable” is identified as possibly not enforceable and should not be used, per the NFPA style manual Table 2.2.2.3.

Committee Meeting Action: Reject

Committee Statement: Alternative language was not provided by the submitter.

75-6 Log #4

(3.3.x.1 Critical Operations Data System (New))

Final Action: Reject

Submitter: Stanley Kaufman, CableSafe, Inc. / Rep. The Society of the Plastics Industry

Recommendation: Add new text to read as follows:

Critical Operations Data System. An information technology equipment system that requires continuous operation for the reasons of public safety, emergency management, national security, or business continuity. [70:645.2]

Substantiation: This proposal is one in a series of proposals to update the extracts from NEC Article 645 in Chapter 10 of NFPA 75. The term is defined in Article 645 of the 2011 edition of the National Electrical Code.

Committee Meeting Action: Reject

Committee Statement: A definition is not necessary as the term is not used in NFPA 75.

75-7 Log #5 Final Action: Accept in Principle
(3.3.x.2 Abandoned Supply Circuits and Interconnecting Cables (New))

Submitter: Stanley Kaufman, CableSafe, Inc. / Rep. The Society of the Plastics Industry

Recommendation: Add new text to read as follows:

Abandoned Supply Circuits and Interconnecting Cables. Installed supply circuits and interconnecting cables that are not terminated at equipment and not identified for future use with a tag. [70:645.2]

Substantiation: This proposal is one in a series of proposals to update the extracts from NEC Article 645 in Chapter 10 of NFPA 75. The term is defined in Article 645 of the 2008 and 2011 editions of the National Electrical Code.

Committee Meeting Action: Accept in Principle

Add new text to read as follows:

Abandoned Cables. Installed cables that are not terminated at equipment and not identified for future use with a tag.

Committee Statement: The definition was changed to correlate with the use in Chapter 10, of the more general term "abandoned cables".

75-8 Log #6 Final Action: Accept
(3.3.x.3 Information Technology Equipment (ITE) (New))

Submitter: Stanley Kaufman, CableSafe, Inc. / Rep. The Society of the Plastics Industry

Recommendation: Add new text to read as follows:

Information Technology Equipment (ITE). Equipment and systems rated 600V or less, normally found in offices or other business establishments and similar environments classified as ordinary locations, which are used for creation, and manipulation of data, voice, video and similar signals that are not communications equipment as defined in Part I of Article 100 and do not process communications circuits as defined in section 800.2 of NFPA 70 *National Electrical Code*. [70:645.2]

Substantiation: This proposal is one in a series of proposals to update the extracts from NEC Article 645 in Chapter 10 of NFPA 75. The term is defined in Article 645 of the 2011 edition of the National Electrical Code.

Committee Meeting Action: Accept

75-9 Log #7 Final Action: Accept
(3.3.x.4 Remote Disconnect Control (New))

Submitter: Stanley Kaufman, CableSafe, Inc. / Rep. The Society of the Plastics Industry

Recommendation: Add new text to read as follows:

Remote Disconnect Control. An electric device and circuit that controls a disconnecting means through a relay or equivalent device. [70:645.2]

Substantiation: This proposal is one in a series of proposals to update the extracts from NEC Article 645 in Chapter 10 of NFPA 75. The term is defined in Article 645 of the 2011 edition of the National Electrical Code.

Committee Meeting Action: Accept

75-10 Log #8
(3.3.x.5 Zone (New))

Final Action: Accept

Submitter: Stanley Kaufman, CableSafe, Inc. / Rep. The Society of the Plastics Industry

Recommendation: Add new text to read as follows:

Zone. A physically identifiable area (such as barriers or separation by distance) within an information technology equipment room with dedicated power and cooling systems for the information technology equipment or systems. [70:645.2]

Substantiation: This proposal is one in a series of proposals to update the extracts from NEC Article 645 in Chapter 10 of NFPA 75. The term is defined in Article 645 of the 2011 edition of the National Electrical Code.

Committee Meeting Action: Accept

75-11 Log #2
(3.3.x.6 Communications Equipment (New))

Final Action: Accept

Submitter: Stanley Kaufman, CableSafe, Inc. / Rep. The Society of the Plastics Industry

Recommendation: Add new text to read as follows:

Communications Equipment. The electronic equipment that performs the telecommunications operations for the transmission of audio, video, and data, and includes power equipment (e.g., dc converters, inverters, and batteries) and technical support equipment (e.g., computers). [70:100]

Substantiation: This proposal is a companion proposal to a series of proposals to update the extracts from NEC Article 645 in Chapter 10 of NFPA 75. The term is defined in Article 100 and used in 645 of the 2011 edition of the National Electrical Code.

Committee Meeting Action: Accept

75-12 Log #3
(3.3.x.7 Raceway (New))

Final Action: Accept

Submitter: Stanley Kaufman, CableSafe, Inc. / Rep. The Society of the Plastics Industry

Recommendation: Add new text to read as follows:

Raceway. An enclosed channel of metal or nonmetallic materials designed expressly for holding wires, cables, or busbars, with additional functions as permitted in NFPA 70, *National Electrical Code*. Raceways include, but are not limited to, rigid metal conduit, rigid nonmetallic conduit, intermediate metal conduit, liquidtight flexible conduit, flexible metallic tubing, flexible metal conduit, electrical nonmetallic tubing, electrical metallic tubing, underfloor raceways, cellular concrete floor raceways, cellular metal floor raceways, surface raceways, wireways, and busways. [70:100]

Substantiation: This proposal is a companion proposal to a series of proposals to update the extracts from NEC Article 645 in Chapter 10 of NFPA 75. The term is defined in Article 100 and used in 645 of the 2011 edition of the National Electrical Code.

Committee Meeting Action: Accept

75-13 Log #9
(3.3.x.8 Plenum (New))

Final Action: Accept

Submitter: Stanley Kaufman, CableSafe, Inc. / Rep. The Society of the Plastics Industry

Recommendation: Add new text to read as follows:

Plenum. A compartment or chamber to which one or more air ducts are connected and that forms part of the air distribution system. [90:3.3.22]

Substantiation: This proposal is a companion proposal to a series of proposals to update the extracts from NEC Article 645 in Chapter 10 of NFPA 75. The term is defined in Article 100 and used in 645 of the 2011 edition of the National Electrical Code. The primary source of the definition is NFPA 90A.

Committee Meeting Action: Accept

75-14 Log #10
(3.3.x.9 Conductive Optical Fiber Cable (New))

Final Action: Reject

Submitter: Stanley Kaufman, CableSafe, Inc. / Rep. The Society of the Plastics Industry

Recommendation: Add new text to read as follows:

Conductive Optical Fiber Cable. A factory assembly of one or more optical fibers having an overall covering and containing non-current-carrying conductive member(s) such as metallic strength member(s), metallic vapor barrier(s), metallic armor or metallic sheath. [70:770.2]

Substantiation: This proposal is a companion proposal to a series of proposals to update the extracts from NEC Article 645 in Chapter 10 of NFPA 75. The term is defined in Article 770 and used in 645 of the 2011 edition of the National Electrical Code.

Committee Meeting Action: Reject

Committee Statement: A definition is not needed as the term is not used in NFPA 75.

75-15 Log #11
(3.3.x.10 Communications Circuit (New))

Final Action: Accept

Submitter: Stanley Kaufman, CableSafe, Inc. / Rep. The Society of the Plastics Industry

Recommendation: Add new text to read as follows:

Communications Circuit. The circuit that extends voice, audio, video, data, interactive services, telegraph (except radio), outside wiring for fire alarm and burglar alarm from the communications utility to the customer's communications equipment up to and including terminal equipment such as a telephone, fax machine, or answering machine. [70:800.2]

Substantiation: This proposal is a companion proposal to a series of proposals to update the extracts from NEC Article 645 in Chapter 10 of NFPA 75. The term is defined in Article 800 and used in 645 of the 2011 edition of the National Electrical Code.

Committee Meeting Action: Accept

75-16 Log #12
(3.3.x.11 Optical Fiber Cable (New))

Final Action: Accept

Submitter: Stanley Kaufman, CableSafe, Inc. / Rep. The Society of the Plastics Industry

Recommendation: Add new text to read as follows:

Optical Fiber Cable. A factory assembly of one or more optical fibers, having an overall covering, which transmit light for control, signaling, and communications. [70:770.2]

Substantiation: This proposal is a companion proposal to a series of proposals to update the extracts from NEC Article 645 in Chapter 10 of NFPA 75. The term is defined in Article 770 and used in 645 of the 2011 edition of the National Electrical Code.

Committee Meeting Action: Accept

75-17 Log #CP12
(3.3.4)

Final Action: Accept

Submitter: Technical Committee on Electronic Computer Systems,
 Recommendation: Delete Section 3.3.4.
 Substantiation: The term "console" does not appear elsewhere in NFPA 75.
 Committee Meeting Action: Accept

75-18 Log #84
(3.3.16 Support Equipment and A.3.3.14 (New))

Final Action: Accept in Principle

Submitter: Stephen McCluer, APC by Schneider Electric
 Recommendation: Insert a new definition and renumber subsequent subparagraph(s) as follows:
3.3.16* Support Equipment. Equipment that is essential to the operation, maintenance, installation or de-installation of information technology equipment.
A.3.3.16 Support Equipment. Support equipment can mean the physical infrastructure equipment necessary for the information technology equipment, such as equipment racks, power supply and distribution equipment, air conditioning, and lighting. It can also include such things as test equipment, material handling equipment, ladders, tools and other equipment that may be required for installation and maintenance and which may not be permanently installed. Non-permanent equipment would normally be removed from the Information technology equipment space when not needed for a particular task.
 Substantiation: Paragraph 6.1.1 prohibits the presence of anything but IT equipment and support equipment, but the term "support equipment" is not defined. The proposed definition attempts to put some boundaries on the term. The proposed Annex material elaborates to give some examples of the type of support equipment that would be permitted. It could be permanently installed, it could be portable equipment and tools, or it could be temporarily-installed equipment used by operators and maintenance technicians. The latter, while "permitted", should be removed from the room when it is not being used. [Note: The final sentence in A.3.3.16 may need to be moved to A.6.1.1 if it is deemed to be a requirement and therefore not permitted in a definition or in the clarification of a definition.]
 Committee Meeting Action: Accept in Principle
 Insert a new definition and renumber subsequent subparagraph(s) as follows:
3.3.16* Support Equipment. Equipment that is essential to the operation, maintenance, installation or de-installation of information technology equipment.
A.3.3.16 Support Equipment. Support equipment can mean the physical infrastructure equipment necessary for the information technology equipment, such as equipment racks, power supply and distribution equipment, air conditioning, and lighting. It can also include such things as test equipment, material handling equipment, ladders, tools and other equipment that may be required for installation and maintenance and which may not be permanently installed. Non-permanent equipment would normally be removed from the Information technology equipment space when not needed for a particular task.
 Committee Statement: The amount of ancillary equipment left in the ITE room should be limited to that necessary to the operation of ITE.

75-19 Log #58
(4.1)

Final Action: Reject

Submitter: Randy Willard, National Reconnaissance Office

Recommendation: Delete 4.1(2), renumber remaining list as follows:

4.1 Risk Factors. The following factors shall be considered in determination of the need for protecting the environment, equipment, function, programming, records, and supplies (see Annex C):

- (1) Life safety aspects of the function (e.g., process controls, air traffic controls)
- ~~(2)~~ Fire threat of the installation to occupants or exposed property
- ~~(3)~~(2) Economic loss from loss of function or loss of records
- ~~(4)~~(3) Economic loss from value of equipment
- ~~(5)~~(4) Regulatory impact
- ~~(6)~~(5) Reputation impact.

Substantiation: Section 1.2 of NFPA 75 states the purpose of this standard is for the protection of the information technology equipment and information technology equipment areas, with Annex A further referring to "uninterrupted operation of the system". Item (2) of the Section 4.1 list is not consistent with that stated purpose or with the nature of the other items in the list. The fire threat to occupants and exposed property is adequately and more appropriately addressed by the building code and the Life Safety Code. There is no assumption or documentation that an ITE Area or Room poses any greater hazard than other uses covered by Business Occupancies, or incidental to other predominant occupancies.

Committee Meeting Action: Reject

Committee Statement: Life safety within the ITE room or area needs to be considered in the risk analysis.

75-20 Log #71

Final Action: Accept in Principle

(4.1, 8.1.1.2, and A.4.1.2 (New))

Submitter: Joshua Elvove, U.S. General Services Administration

Recommendation: Add new text to read as follows:

3.1.x (New) Fire Risk Analysis. A process to characterize the risk associated with fire that addresses the fire scenario or fire scenarios of concern, their probability, and their potential consequences.

Revise text as follows:

4.1 Fire Risk Analysis Factors.

4.1.1* A fire risk analysis shall be permitted to be used to determine the construction, fire protection and fire detection requirements for information technology equipment, information technology rooms and information technology areas where specifically permitted by Chapters 5 and 8.

4.1.1.1 The fire risk analysis conducted in 4.1.1 shall be documented.

4.1.2* The following factors shall be considered in determination of the need for protecting the environment, equipment, function, programming, records, and supplies level of acceptable fire risk (see Annex C):-

Rest unchanged

Add new text as follows:

A.4.1.1 (New) The fire risk analysis should be evaluated by the stakeholders. See NFPA 551, Guide for the *Evaluation of Fire Risk Assessments* for additional guidance.

A.4.1.2 (New) The protection for information technology equipment and information technology equipment areas should be specific to the nature and anticipated fire risks of each facility. The risk analysis should consider the risk and hazards associated with the site and services provided for a given fire safety problem. Additional considerations may include:

- (1) Availability of alternative information technology equipment or information technology equipment rooms
- (2) Permitted downtime of information technology equipment
- (3) Presence of additional fire protection and detection equipment proximate to information technology equipment room
- (4) Survivability of the information technology equipment and information technology equipment room environment
- (5) Number and training of emergency response personnel (6) Building construction

Revise text as follows:

8.1.1.2* An automatic sprinkler system, a carbon dioxide extinguishing system, or an inert agent fire extinguishing system for the protection of the area below the raised floor in an information technology equipment room or information technology equipment area shall be provided, unless otherwise determined by the fire risk analysis in Section 4.1.

Substantiation: This is one of two public proposals being submitted to provide some relief to the mandatory underfloor fire suppression requirement. Though this is preferred, acceptance of either will meet my intent.

The TC accepted this concept in principle during the 2007 ROC cycle when it added new text to 8.1.1.2 in response to my public comment 75-4 (which requested reconsideration of my original proposal 75-11 to add “where the risk warrants it” at the end of 8.1.1.2). However, the changed proposed by the TC to add language to 8.1.1.2 to refer to “applicable installation standards identified in section 2.2” did not do as I intended. I therefore submitted a NITMAM to accept my original proposal. The motion was accepted by the assembly at the 2008 annual technical meeting in Las Vegas. However, this change failed subsequent ballot by the TC as many felt the language I provided was too vague. Hence, we’re back to language that was created in the 2002 edition. In response to my public comment last cycle, the TC indicated in its committee statement that this issue would be reviewed during the next code cycle. To facilitate this discussion, I have submitted this proposal. The text I’ve developed for Section 4.1 permits the use of a fire risk analysis as a basis to determine what safeguards may be applicable. Fire risk analyses are discussed in NFPA 551 and a number of concepts from that document have been proposed for NFPA 75. In addition, a risk analysis is used in the 2010 edition NFPA 72 to determine whether mass notification systems (MNS) are required and what provisions should be implemented if an MNS is warranted. Fire risk analyses are consistent with the scope of Chapter 4 and should be permitted to determine whether certain construction or fire protection requirements are necessary for protecting information technology equipment, rooms and areas. This also aligns with existing guidance stated in A.8.2 and A.8.4.1. The intent is only to allow the use of fire risk analyses where specifically permitted by Chapters 5 and 8.

8.1.1.2 was revised so the new fire risk analysis could be used to determine whether there is a critical need to protect data, reduce equipment damage and facilitate return to service via an underfloor fire suppression system, instead of the current mandatory requirement, which doesn’t give due consideration when such a need isn’t warranted (e.g., when nothing is installed beneath the raised floor, when wiring within the raised floor space is plenum rated, if power is disconnected to all electrical equipment located beneath the raised floor, etc.). Note: mandatory underfloor fire

suppression remains as the default requirement if no fire risk analysis is conducted or the fire risk analysis indicates the need for mandatory underfloor fire suppression.

Committee Meeting Action: Accept in Principle

Add new text to read as follows:

3.1.x (New) Fire Risk Analysis. A process to characterize the risk associated with fire that addresses the fire scenario or fire scenarios of concern, their probability, and their potential consequences.

Revise text as follows:

4.1 Fire Risk Analysis Factors.

4.1.1* A fire risk analysis shall be permitted to be used to determine the construction, fire protection and fire detection requirements for information technology equipment, information technology rooms and information technology areas where specifically permitted by Chapters 5 and 8.

4.1.2 The fire risk analysis conducted in Section 4.1.1 shall be documented.

4.1.3* The following factors shall be considered in determination of the need for protecting the environment, equipment, function, programming, records, and supplies level of acceptable fire risk (see Annex C):

- (1) Life safety aspects of the function (e.g., process controls, air traffic controls)
- (2) Fire threat of the installation to occupants or exposed property
- (3) Economic loss from loss of function or loss of records
- (4) Economic loss from value of equipment
- (5) Regulatory impact
- (6) Reputation impact

A.4.1.1 (New) The fire risk analysis should be evaluated by the stakeholders. See NFPA 551, Guide for the Evaluation of Fire Risk Assessments for additional guidance.

A.4.1.3 (New) The protection for information technology equipment and information technology equipment areas should be specific to the nature and anticipated fire risks of each facility. The risk analysis should consider the risk and hazards associated with the site and services provided for a given fire safety problem. Additional considerations may include:

- (1) Availability of alternative information technology equipment or information technology equipment rooms
- (2) Permitted downtime of information technology equipment
- (3) Presence of additional fire protection and detection equipment proximate to information technology equipment room
- (4) Survivability of the information technology equipment and information technology equipment room environment
- (5) Number and training of emergency response personnel
- (6) Building construction

It is not the intent of the risk analysis to permit any deviation from an existing installation requirement.

Revise text as follows:

8.1.1.2* An automatic sprinkler system, a carbon dioxide extinguishing system, or an inert agent fire extinguishing system for the protection of the area below the a raised floor in an information technology equipment room or information technology equipment area shall be provided when one or more of the following exist:

- (1) Where there is a critical need to protect data in the process, reduce equipment damage, and facilitate return to service
- (2) The area below the raised floor contains combustible material

Committee Statement: New Annex material was added to ensure that there is no conflict between NFPA 75 and other installation standards. Also see Committee Action of Proposal 75-47 (Log #90).

75-21 Log #CP10
(4.1(7) (New))

Final Action: Accept

Submitter: Technical Committee on Electronic Computer Systems,

Recommendation: Insert new text to read as follows:

4.1 Risk Factors

(7) Redundant off-site processing systems.

Substantiation: Redundant off-site processing systems should be considered in the risk analysis to determine the level of protection for ITE areas.

Committee Meeting Action: Accept

75-22 Log #CP11
(4.2)

Final Action: Accept

Submitter: Technical Committee on Electronic Computer Systems,

Recommendation: Revise text to read as follows:

~~4.2 Telecommunications Risks.~~

~~4.2.1 Telecommunications Risks for the Private Network.~~

~~4.2.1.1 In assessing and evaluating the damage and interruption potential of the loss of information technology equipment room operations, attention shall be given to the impact of the loss of data and communications.~~

~~4.2.1.2 If these functions are vital to the operation, the provisions of this standard shall apply to those areas housing telecommunications equipment.~~

~~4.2.2 NFPA 76, Standard for the Fire Protection of Telecommunications Facilities, shall apply to telecommunications facilities that are part of the public network as outlined in the scope of NFPA 76, and the provisions of this standard shall not apply.~~

4.2 Telecommunications Risks.

4.2.1 Telecommunications Risks for the Private Network.

4.2.1.1 In assessing and evaluating the damage and interruption potential of the loss of information technology equipment room operations, a risk evaluation shall be conducted on the impact of the loss of data and communications.

4.2.1.2 The provisions of this standard shall apply to those areas housing telecommunications equipment that are part of a private network where the need for protection has been determined by the risk evaluation outlined in 4.2.1.1.

4.2.2 Telecommunications Risks for the Public Network.

4.2.2.1 NFPA 76, Standard for the Fire Protection of Telecommunications Facilities, shall apply to telecommunications facilities that are part of the public network as outlined in the scope of NFPA 76.

4.2.2.2 The provisions of this standard shall not apply to telecommunications facilities that are part of the public network.

Substantiation: The requirements were broken down into two subsections to separate private from public networks. The new requirements more clearly state the need for a risk assessment based on the use of ITE.

Committee Meeting Action: Accept

75-23 Log #CP7
(5.1.3 and 5.1.4)

Final Action: Accept

Submitter: Technical Committee on Electronic Computer Systems,

Recommendation: Revise text and add new Section 5.1.3.5 as follows:

5.1.3* The information technology equipment area shall be separated from other occupancies within the building, including atria or other open-space construction, by fire-resistant rated construction.

5.1.3.1 The information technology equipment room shall be separated from other occupancies in the information technology equipment area by fire-resistant-rated construction.

5.1.3.2 The fire resistance rating shall be commensurate with the exposure but not less than 1 hour for both.

5.1.3.3 The fire resistant-rated enclosures shall extend from the structural floor to the structural floor above or to the roof.

5.1.3.4 Every opening in the fire-resistant-rated construction shall be protected to limit the spread of fire and to restrict the movement of smoke from one side of the fire resistant-rated construction to the other. The fire resistance rating for doors

shall be as follows:

(1) 2-hour fire-resistant-rated construction — 1 1/2-hour fire resistance-rated doors

(2) 1-hour fire-resistant-rated construction — 3/4-hour fire resistance-rated doors

5.1.3.5 The fire resistant-rated construction shall be in accordance with NFPA 101 and applicable building and fire codes.

Substantiation: The requirements in NFPA 101 for fire-barriers are more complete than those in NFPA 75. In addition, and editorial changes were made to comply with the MOS.

Committee Meeting Action: Accept

75-24 Log #85
(5.3.1)

Final Action: Reject

Submitter: Stephen McCluer, APC by Schneider Electric

Recommendation: Delete 5.3.1 and renumber subsequent sub-paragraphs as follows:

~~5.3.1 All interior wall and ceiling finishes in the information technology equipment area shall have a Class A rating in accordance with NFPA 101, Life Safety Code.~~

Substantiation: Paragraphs 5.3.1 and 5.3.2 are confusing. 5.3.1 says the ITE area shall be Class A rated, but 5.3.2 says it can be Class B rated.

The only difference is 5.3.2 is for sprinklered areas. Since 5.1.1 already requires sprinklers, 5.3.1 is unnecessary.

Committee Meeting Action: Reject

Committee Statement: The current requirements are clear and further clarification was not necessary.

75-25 Log #86
(5.4)

Final Action: Accept in Principle

Submitter: Stephen McCluer, APC by Schneider Electric

Recommendation: Add new text to read as follows:

5.4* Raised Floors

Raised floors are frequently used in information technology equipment rooms for cooling, cable distribution, piping, or other reasons. Raised floor are not required but, when used, shall comply with the requirements of this section and Article 645 of NFPA 70.

Substantiation: Section 5.4 implies that there will always be a raised floor in an information technology space, which is simply not the case. The trend is away from raised floors with equipment mounted directly to the structural floor. This proposal clarifies in the introductory paragraph that, when raised floors are present, they shall be bound by the requirements of this Standard and Article 645 of the NEC.

Committee Meeting Action: Accept in Principle

Revise text to read as follows:

5.4.* Raised Floors. Where raised floors are used, they shall comply with Section 5.4.1 through 5.4.4.

Committee Statement: There are no requirements for raised floors in Article 645 of NFPA 70. In addition, the changes comply with the Manual of Style.

75-26 Log #76
(5.4.2)

Final Action: Accept

Submitter: Bob Eugene, Underwriters Laboratories Inc.

Recommendation: Revise text to read as follows:

5.4.2 Decking for raised floors shall be one of the following:

(1) Noncombustible

(2) Pressure-impregnated, fire-retardant treated lumber having a flame spread index of 25 or less in accordance with ~~NFPA 255, Standard Method of Test of Surface Burning Characteristics of Building Materials~~, ASTM E 84, Standard Test Method for Surface Burning Characteristics of Building Materials, or ANSI/UL 723, Standard for Test for Surface Burning Characteristics of Building Materials

(3) Wood or similar core material that is encased on the top and bottom with sheet, cast, or extruded metal, with all openings or cut edges covered with metal or plastic clips or grommets so that none of the core is exposed, and that has an assembly flame spread index of 25 or less in accordance with ~~NFPA 255, Standard Method of Test of Surface Burning Characteristics of Building Materials~~, or ANSI/UL 723, Standard for Test for Surface Burning Characteristics of Building Materials.

Substantiation: NFPA 255 was withdrawn in the Fall 2009. ANSI approval designation is added to ANSI/UL 723.

Committee Meeting Action: Accept

75-27 Log #13
(5.4.2(2) and (3))

Final Action: Accept in Principle

Submitter: Stanley Kaufman, CableSafe, Inc. / Rep. The Society of the Plastics Industry

Recommendation: Delete text to read as follows:

(2) Pressure-impregnated, fire-retardant treated lumber having a flame spread index of 25 or less in accordance with ~~NFPA 255, Standard Method of Test of Surface Burning Characteristics of Building Materials~~, ASTM E 84, *Standard Test Method for Surface Burning Characteristics of Building Materials*, or UL 723, *Standard for Test for Surface Burning Characteristics of Building Materials*

(3) Wood or similar core material that is encased on the top and bottom with sheet, cast, or extruded metal, with all openings or cut edges covered with metal or plastic clips or grommets so that none of the core is exposed, and that has an assembly flame spread index of 25 or less in accordance with ~~NFPA 255, Standard Method of Test of Surface Burning Characteristics of Building Materials~~, or UL 723, *Standard for Test for Surface Burning Characteristics of Building Materials*.

Substantiation: NFPA 255 has been withdrawn.

Committee Meeting Action: Accept in Principle

See Committee Action on Proposal 75-26 (Log #76).

75-28 Log #87
(5.4.5 (New))

Final Action: Reject

Submitter: Stephen McCluer, APC by Schneider Electric

Recommendation: Add new text to read as follows:

5.4.5 Raised floor surfaces shall be constructed or coated with materials to minimize the creation of electrostatic discharge (ESD).

Substantiation: Electrostatic discharge can create damage and operational failure in an ITE space. Measures should be taken to minimize the possibility of ESD from personnel walking on the raised floor.

Committee Meeting Action: Reject

Committee Statement: The requirement is not necessary for fire protection. This requirement should be up to the owners, and not a mandatory requirement.

75-29 Log #CP6
(5.5)

Final Action: Accept

Submitter: Technical Committee on Electronic Computer Systems,

Recommendation: Revise text to read as follows:

Penetrations and Openings in of Fire-Resistant-Rated Enclosures

Change 5.5.1 to Read:

Cable penetrations openings or other penetrations...".

Change 5.5.3 to Read

*5.5.3 The All air ducts and air transfer openings passing through fire-resistant rated construction shall be provided with automatic fire and smoke dampers where the ducts pass through fire-resistant-rated construction installed and maintained in accordance with NFPA 90A, Standard for the Installation of Air-Conditioning and Ventilating Systems.

A.5.5.3 NFPA 75 requires smoke or fire dampers in locations where NFPA 90A may not. The reference to NFPA 90A draws in the technical installation and maintenance requirements.

Substantiation: Requirements were added for installation and maintenance of air transfer openings which are not currently covered in NFPA 75. In addition, editorial changes were made.

Committee Meeting Action: Accept

75-30 Log #59
(5.5.2)

Final Action: Accept in Principle

Submitter: Randy Willard, National Reconnaissance Office

Recommendation: Revise text to read as follows:

5.5.2 ~~Where any pass-throughs or windows located in fire-resistant rated construction are provided in any fire-rated wall of an information technology equipment area, each opening shall be equipped with an automatic fire-rated shutters or a fire-rated windows of equal rating to the wall installed and maintained in accordance with NFPA 80, Standard for Fire Doors and Other Opening Protectives.~~

5.5.2.1 The shutters or windows shall be operated automatically by the presence of either smoke or fire on either side of the wall.

5.5.2.2 The shutters or windows shall be operated automatically by operation of the HVAC disconnecting means required by 10.4.8.

5.5.2.3 The fire-rating of the shutters or windows shall be not less than the fire-rating of the wall in which it is located.

Substantiation: Reference to NFPA 80 is added to incorporate already established installation and maintenance requirements.

Revision adds a new requirement that the shutters or windows operate upon activation of the HVAC disconnecting means of 10.4.8.

Revision of paragraphs complies with NFPA Manual of Style for at least two subdivisions.

Committee Meeting Action: Accept in Principle

Revise Subsection 5.5.2 and subordinate paragraphs to read as follows:

5.5.2 ~~Where any pass-throughs or windows located in fire-resistant rated construction are provided in any fire-rated wall of an information technology equipment area, each opening shall be equipped with an automatic fire-rated shutter or fire-rated window of equal rating to the wall installed and maintained in accordance with NFPA 80, Standard for Fire Doors and Other Opening Protectives.~~

5.5.2.1 The shutters or windows shall be operated automatically by the presence of either smoke or fire on either side of the wall.

~~5.5.2.2 The shutters or windows shall be operated automatically by operation of the HVAC disconnecting means required by 10.4.8.~~

5.5.2.2 The fire-rating of the shutters or windows shall be not less than the fire-rating of the wall in which it is located.

Committee Statement: Automatic function is more reliable than manual activation. The activation of a fire shutter should not rely on human interaction. In addition, Section 5.5.2.2 is deleted because the requirement is adequately covered in 5.5.2.1.

75-31 Log #67
(5.5.2)

Final Action: Accept

Submitter: Joshua Elvove, U.S. General Services Administration

Recommendation: Revise text to read as follows:

5.5.2 Where any pass-throughs or windows are provided in any fire-rated wall of an information technology equipment area, each opening shall be equipped with an automatic fire-rated shutter, service counter fire door or a fire-rated window of equal rating to the wall.

Substantiation: NFPA 80 also has provisions for service counter fire doors (in Chapter 13 of NFPA 80) that should also be permitted as a pass-through opening, given the protection is similar to that of fire shutters (in Chapter 12 of NFPA 80).

Committee Meeting Action: Accept

75-32 Log #60
(5.5.3)

Final Action: Accept in Principle

Submitter: Randy Willard, National Reconnaissance Office

Recommendation: Revise text to read as follows:

5.5.3 ~~The~~ Air ducts and air transfer openings passing through fire-resistant rated construction shall be provided with automatic combination fire and smoke dampers where the ducts pass through fire resistant-rated construction installed and maintained in accordance with NFPA 80, *Standard for Fire Doors and Other Opening Protectives*.

Substantiation: Revision clarifies that non-ducted air penetrations (air transfer openings) through the fire rated enclosure of the Information Technology Equipment Room or Area require automatic combination fire and smoke dampers as well.

The term “combination fire and smoke damper” is used to match the terminology in UL555S.

Reference to NFPA 80 is added to incorporate already established installation and maintenance requirements.

Committee Meeting Action: Accept in Principle

See Committee Action on Proposal 75-29 (Log #CP6).

75-33 Log #61
(5.6)

Final Action: Accept

Submitter: Randy Willard, National Reconnaissance Office

Recommendation: Delete text to read as follows:

~~**5.6 Air Space:** Where the air-space below a raised floor or above a suspended ceiling is used to recirculate information technology equipment room/information technology equipment area environmental air, the wiring shall conform to Article 645 of a *NFPA 70, National Electrical Code*.~~

Substantiation: Section 5.6 repeats the requirements of subsection 10.3.1. Chapter 10 is the more appropriate location for this requirement than Chapter 5.

Committee Meeting Action: Accept

75-34 Log #88
(5.6)

Final Action: Reject

Submitter: Stephen McCluer, APC by Schneider Electric

Recommendation: Revise text to read as follows:

Where information technology equipment wiring and cabling is installed in the air space below a raised floor or above a suspended ceiling that is used to recirculate information technology equipment room/information technology equipment area environmental air, the wiring shall conform to Article 645 of *NFPA 70, National Electrical Code*.

Substantiation: It is not clear in the existing text what wiring is meant to be addressed by 5.6. It could be mistaken to mean wiring associated with the air handling equipment. The additional words clarify that it is ITE wiring run through the air space.

Committee Meeting Action: Reject

Committee Statement: This section is redundant and changes are not needed.

75-35 Log #CP8
(6.1)

Final Action: Accept

Submitter: Technical Committee on Electronic Computer Systems,

Recommendation: Revise text to read as follows:

~~6.1.1.1 Small supervisory offices and similar light-hazard occupancies directly related to the electronic equipment operations shall be permitted within the information technology equipment room if noncombustible containers are provided for combustible material:~~

~~6.1.1.2 Records shall be permitted in the information technology equipment room to the extent allowed in Chapter 9:~~

~~6.1.2 Office furniture in the information technology equipment room shall be of metal construction:~~

~~6.1.2.1 Metal frame chairs with integral seat cushions shall be permitted:~~

~~6.1.2.2 Insulated or controlled conductive coverings shall be permitted on surfaces of chairs, tables, desks, and so forth:~~

~~6.1.3 Only approved self-extinguishing-type trash receptacles shall be used in the information technology equipment area:~~

6.1.2* Small work areas shall be permitted within the ITE room if the following conditions are met:

(1) Areas are not occupied on a full time basis.

(2) Case furniture, including desks, is constructed of noncombustible material (e.g., metal). The construction can include a high-pressure laminate veneer on desktop.

(3) Any paper records, manuals, and drawings are stored in fully enclosed noncombustible cabinets or cases.

(4) Space dividers and system furniture panels and chairs with upholstered assemblies exhibit a maximum rate of heat release not exceeding 80 kW and a maximum total heat released not exceeding 25 MJ within the first 10 minutes of test when tested in accordance with one of the following:

(a) ASTM E 1537

(b) California Technical Bulletin 133

(5) Noncombustible containers are provided for combustible material.

(6) The amount of records within the area are kept to the absolute minimum required for essential and efficient operation.

(7) Only records that are essential to the operations are permitted to be kept in the area.

Substantiation: More requirements for small work areas were added to limit combustibles in the ITE room.

Committee Meeting Action: Accept

75-36 Log #62
(6.1.1.1)

Final Action: Accept in Principle

Submitter: Randy Willard, National Reconnaissance Office

Recommendation: Delete paragraph 6.1.1.1 in entirety, renumber 6.1.1.2, delete 6.1.2 and subordinate paragraphs in entirety as follows:

~~6.1.1.1 Small supervisory offices and similar light-hazard occupancies directly related to the electronic equipment operations shall be permitted within the information technology equipment room if noncombustible containers are provided:~~

~~6.1.2.1.2~~ 6.1.2.1.2 Records shall be permitted in the information technology equipment room to the extent allowed in Chapter 9.

~~6.1.2 Office furniture in the information technology equipment room shall be of metal construction:~~

~~6.1.2.1 Metal frame chairs with integral seat cushions shall be of metal construction:~~

~~6.1.2.2 Insulated or controlled conductive coverings shall be permitted on surfaces of chairs, tables, desks, and so forth:~~

Substantiation: The wording “small” and “similar” of 6.1.1.1 is nonspecific, unenforceable and vague, and thus not permitted by the NFPA Manual of Style. To allow office space within the Information Technology Equipment Room introduces additional fuel and ignition sources within the room, increasing the risk to the equipment and mission therein which is counter to the purpose of this standard and counter to the segregation intent illustrated by Figure A.5.1.3. Further, to allow office space but require combustible materials be stored in noncombustible containers introduces an ongoing and daily oversight and inspection requirement that realistically has little chance of successful compliance. Information Technology Equipment rooms can be well designed and operated to exclude office space from within, and this paragraph should be deleted.

With the deletion of 6.1.1.1, subsection 6.1.2 becomes obsolete and contradictory, thus should be deleted as well.

Committee Meeting Action: Accept in Principle

See Committee Action on Proposal 75-35 (Log #CP8).

75-37 Log #CP2
(6.1.1.2)

Final Action: Accept

Submitter: Technical Committee on Electronic Computer Systems,

Recommendation: Delete text to read as follows:

~~6.1.1.2 Records shall be permitted in the information technology equipment room to the extent allowed in Chapter 9:~~

Substantiation: This subject is already adequately covered in Section 6.2.

Committee Meeting Action: Accept

75-38 Log #89
(6.2.1)

Final Action: Reject

Submitter: Stephen McCluer, APC by Schneider Electric

Recommendation: Revise text to read as follows:

6.2.1 The amount of paper records or other flammable medium within the information technology equipment room shall be kept to the absolute minimum required for essential and efficient operation.

Substantiation: A large part of information technology is information storage/retention. This is surely not what is intended to be eliminated by 6.2.1. This proposed change would clarify that the intent is to eliminate as much paper as possible (or maybe even other media as well, such as magnetic tape).

Committee Meeting Action: Reject

Committee Statement: The change is redundant and addressed elsewhere in the standard. See Committee Action on Proposal 75-37 (Log #CP2).

75-39 Log #77
(7.1)

Final Action: Accept

Submitter: Bob Eugene, Underwriters Laboratories Inc.

Recommendation: Revise text to read as follows:

7.1 Information Technology Equipment.

7.1.1 Equipment and replacement parts shall meet the requirements of ~~UL 478, Standard for Electronic Data-Processing Units and Systems~~, UL 1950, ~~Standard for Safety of Information Technology Equipment~~, UL 60950, Safety of Information Technology Equipment; or ANSI/UL 60950-1, Information Technology Equipment — Safety — Part I: General Requirements.

7.1.2* Each individual unit shall be constructed in such a way that by limiting combustible materials or by use of enclosures, fire is not likely to spread beyond the unit where the source of ignition is located. Automatic protection shall be provided for all units not so constructed.

7.1.3 Listed information technology equipment shall be considered as meeting the requirements of 7.1.2.

7.1.4* Enclosures of floor-standing equipment having external surfaces of combustible materials of such size that can contribute to the spread of an external fire shall have a flame spread index of 50 or less in accordance with ~~NFPA 255, Standard Method of Test of Surface Burning Characteristics of Building Materials~~, ASTM E 84, Standard Test Method for Surface Burning Characteristics of Building Materials; or ANSI/UL 723, Standard for Test for Surface Burning Characteristics of Building Materials. Equipment conforming to the requirements of ~~UL 478, Standard for Electronic Data-Processing Units and Systems~~, UL 1950, ~~Standard for Safety of Information Technology Equipment~~, or UL 60950, Safety of Information Technology Equipment, shall be considered as meeting the requirements of 7.1.4.

7.1.4.1 Equipment conforming to the requirements of ~~UL 478, Standard for Electronic Data-Processing Units and Systems~~, UL 1950, ~~Standard for Safety of Information Technology Equipment~~, UL 60950, Safety of Information Technology Equipment; or ANSI/UL 60950-1, Information Technology Equipment — Safety — Part 1: General Requirements, shall be considered as meeting the requirements of 7.1.4.

Substantiation: UL 478 has been withdrawn in 1990 and replaced by UL 60950-1. UL 60950-1 replaced UL 1950 in 2005. NFPA 255 was withdrawn in the Fall 2009. ANSI approval designation is added to ANSI/UL 723 and ANSI/UL 60950-1.

Committee Meeting Action: Accept

75-40 Log #14
(7.1.4)

Final Action: Accept in Principle

Submitter: Stanley Kaufman, CableSafe, Inc. / Rep. The Society of the Plastics Industry

Recommendation: Deleted text to read as follows:

7.1.4* Enclosures of floor-standing equipment having external surfaces of combustible materials of such size that can contribute to the spread of an external fire shall have a flame spread index of 50 or less in accordance with ~~NFPA 255, Standard Method of Test of Surface Burning Characteristics of Building Materials~~, ASTM E 84, *Standard Test Method for Surface Burning Characteristics of Building Materials*; or UL 723, *Standard for Test for Surface Burning Characteristics of Building Materials*. Equipment conforming to the requirements of UL 478, *Standard for Electronic Data-Processing Units and Systems*; UL 1950, *Standard for Safety of Information Technology Equipment*, or UL60950, *Safety of Information Technology Equipment*, shall be considered as meeting the requirements of 7.1.4.

Substantiation: NFPA 255 has been withdrawn.

Committee Meeting Action: Accept in Principle

See Committee Action on Proposal 75-39 (Log #77).

75-41 Log #57
(8.1)

Final Action: Reject

Submitter: Philip A. Sherer, AECOM

Recommendation: Revise text to read as follows:

~~8.1.1 Information technology equipment rooms and information technology equipment areas located in a sprinklered building shall be provided with an automatic sprinkler system:~~

8.1.1.1 Information technology equipment rooms and information technology equipment areas located in sprinklered or a nonsprinklered building shall be provided with an automatic sprinkler system, a gaseous clean agent extinguishing system, or both (*see Section 8.4*).

Substantiation: The standard requires an information technology room located in a sprinklered (water based suppression) building to be provided with a sprinkler system as a minimum but if the building that is not sprinklered the user can choose their suppression system. This would require two systems (water based and non-water based suppression system) if the owner/user of a sprinklered building was to install a non-water based suppression systems vs. the non-sprinklered building owner/user would be required to provide only one suppression system. It seems onuses to require this additional requirement on a building that is built and protected to a higher standard.

Committee Meeting Action: Reject

Committee Statement: Two layers of suppression are not required by the current language in the standard.

75-42 Log #68
(8.1)

Final Action: Accept in Principle

Submitter: Joshua Elvove, U.S. General Services Administration

Recommendation: Revise text to read as follows:

4.1 Automatic Sprinkler Systems Fire Protection

Substantiation: The existing section title is not appropriate as the ensuring paragraphs don't strictly pertain to automatic sprinklers. "Fire Protection" seems appropriate given the chapter title.

Committee Meeting Action: Accept in Principle

Revise text to read as follows:

8.1 Automatic Fire Protection ~~Sprinkler~~ Systems

Committee Statement: Editorial changes.

75-43 Log #111
(8.1)

Final Action: Reject

Submitter: Scott J. Harrison, UTC Fire & Security/Marioff North America

Recommendation: Add new text to read as follows:

***Water Mist Fire Protection Systems**

*Where provided, water mist fire protection systems shall be installed in accordance with the requirements of NFPA 750.

*Water mist fire protection systems shall be designed and installed for the specific hazards and protection objectives specified in the listing.

*Detection systems utilized for the operation of water mist fire protection systems shall be installed in accordance with Section 8.5 or the listing criteria.

Substantiation: The additional text will align NFPA 75 2009 Chapter 8 Fire Protection and Detection Equipment (8.1 Automatic Sprinkler Systems) with NFPA 76 2009 Edition Chapter 8 Fire Protection Elements (8.6...Sprinkler Systems / Water Mist Fire Protection Systems).

Since these two technologies (NFPA 75 Information Tech. and NFPA 76 Telecom Fac. Tech) are combined in some occupancies such as Telephone Switching Stations with Computer Server Rooms and Air Traffic Control Towers with Communications and Computer Equipment Rooms, it would keep the standards in line with each other. This would reduce the need for formal interpretation and provide clear wording that has already been approved in NFPA 76 and define another fire protection alternative in NFPA 75.

This is not original material; its reference/source is as follows:

All wording has been sourced from NFPA 76 Chapter 8 Section 8.6.2.5 Paragraphs 8.6.2.5.1 thru 8.6.2.5.3.

Committee Meeting Action: Reject

Committee Statement: The committee requests data from the submitter and the public to demonstrate that water mist is appropriate for ITE rooms. In addition, water mist systems are not specifically listed for use in ITE rooms.

75-44 Log #46
(8.1.1.2)

Final Action: Accept in Principle

Submitter: Ronald Marts, Telcordia Technologies

Recommendation: Revise text to read as follows:

8.1.1.2* Where combustible material is present, either an automatic sprinkler system, carbon dioxide extinguishing system, or clean inert agent fire extinguishing system for the protection of the area below the raised floor in an information technology equipment room or information technology equipment area shall be provided.

Substantiation: Where underfloor areas are kept free of combustible material, there is no need for underfloor suppression. Research suggests there is no evidence of underfloor fires where no combustibles are present.

Where underfloor suppression is required, clean agents should be an option, particularly if they are already used in the space above.

Committee Meeting Action: Accept in Principle

See Committee Action of Proposal 75-47 (Log #90).

75-45 Log #63
(8.1.1.2)

Final Action: Accept in Principle

Submitter: Randy Willard, National Reconnaissance Office

Recommendation: Revise text to read as follows:

8.1.1.2 ~~Based upon the risk factors of Section 4.1, consideration shall be given to the installation of a~~ An automatic sprinkler system, a carbon dioxide extinguishing system, or an inert agent fire extinguishing system for the protection of the area below the raised floor in an information technology equipment room or information technology equipment area. ~~shall be provided.~~

Substantiation: When this section was added in the 2003 edition, no substantiation was provided to quantify and document the actual risk or hazard of fire under the raised access floor. A requirement was thus levied against an unknown problem.

This existing requirement as written is excessive to the point that suppression would be required even in underfloor spaces that have absolutely no combustibles present.

The absolute requirement to provide underfloor suppression should be struck and users allowed to evaluate their individual risk considerations and make the decision to/not to provide underfloor suppression based upon their specific circumstances. Such wording would be similar to the consideration already mandated in Subsection 8.4.1 for Gaseous Total Flooring Extinguishing systems.

Committee Meeting Action: Accept in Principle

See Committee Action of Proposal 75-47 (Log #90).

75-46 Log #66
(8.1.1.2)

Final Action: Accept in Principle

Submitter: Joshua Elvove, U.S. General Services Administration

Recommendation: Revise text to read as follows:

8.1.1.2 Where there is a critical need to protect data in the process, reduce equipment damage, and facilitate return to service, consideration shall be given to use either an automatic sprinkler system, carbon dioxide extinguishing system, or inert agent fire extinguishing system for the protection of the area below the raised floor in an information technology equipment room or information technology equipment area. ~~shall be provided.~~

Substantiation: The TC accepted this concept in principle during the 2007 ROC cycle when it added new text to 8.1.1.2 in response to my public comment 75-4 (which requested reconsideration of my original proposal 75-11 to add "where the risk warrants it" at the end of 8.1.1.2). However, the change proposed by the TC to add language to 8.1.1.2 to refer to "applicable installation standard identified in Section 2.2" did not do as I intended. I therefore submitted a NITNAM to accept my original proposal. The motion was accepted by the assembly at the 2008 annual technical meeting in Las Vegas. However, this change failed subsequent ballot by the TC as many felt the language I provided was too vague. Hence, we're back to language that was created in the 2002 edition. In response to my public comment last cycle, the TC indicated in its committee statement that this issue would be reviewed during the next code cycle. To facilitate this discussion, I have submitted this proposal. The text I've inserted at the beginning of the existing text for 8.1.1.2 is exactly the same text that currently appears in 8.4.1 (reprinted below).

8.4.1 Where there is a critical need to protect data in the process, reduce equipment damage, and facilitate return to service, consideration shall be given to use either an automatic sprinkler system, carbon dioxide extinguishing system, or inert agent fire extinguishing system for the protection of the area below the raised floor in an information technology equipment room or information technology equipment area.

The reason for this proposal is to make underfloor fire suppression mandatory only where there is a critical need to protect data, reduce equipment damage and facilitate return to service. Current text mandates underfloor fire suppression in all cases, which doesn't give due consideration when such a need isn't warranted (e.g., when nothing is installed beneath the raised floor, when wiring within the raised floor space is plenum rated, if power is disconnected to all electrical equipment located beneath the raised floor, etc.). The decision regarding whether to install underfloor fire suppression needs to be determined on a case-by-case basis, depending upon the risk posed to the equipment, and not be a mandatory requirement. This is consistent with the approach taken in 8.4.1. Note: this is (the simpler) one of two proposals I will be submitting to provide some relief to the mandatory underfloor fire suppression requirement.

Acceptance of either will meet my intent.

Committee Meeting Action: Accept in Principle

See Committee Action of Proposal 75-47 (Log #90).

75-47 Log #90
(8.1.1.2)

Final Action: Accept in Principle

Submitter: Stephen McCluer, APC by Schneider Electric

Recommendation: Revise text to read as follows:

8.1.1.2* An automatic sprinkler system, a carbon dioxide extinguishing system, or an inert agent fire extinguishing system for the protection of the area below ~~the a~~ raised floor in an information technology equipment room or information technology equipment area shall be provided when one or more of the following exist:

- (1) The area below the raised floor is used to transport air for equipment cooling or other purposes
- (2) The area below the raised floor is used to distributed power cables, signal cables, or both power and signal cables
- (3) The area below the raised floor contains flammable material

Substantiation: The word “the” is replaced with “a” because the former (definite article) implies that there will always be a raised floor in an Information Technology space, which is simply not the case. Use of the indefinite article “a” implies alternatives. The trend is away from raised floors with equipment mounted directly on the structural floor. Power and signal cables are increasingly run overhead.

NFPA 75 requires sprinklers under raised floors even when there is no flammable material under the floor. This is not consistent with other NFPA automatic fire suppression codes: NFPA 12, NFPA 12A, NFPA 13, or NFPA 2001. This proposed language identifies specific conditions under which fire suppression under the floor makes sense – i.e., when potentially flammable material is present. Requiring fire suppression when there is nothing to burn makes no sense (e.g. chilled water pipes don’t really need fire suppression).

See NFPA 13: “8.15.1.2.2 Concealed spaces of noncombustible and limited-combustible construction with limited access and not permitting occupancy or storage of combustibles shall not require sprinkler protection. The space shall be considered a concealed space even with small openings such as those used as return air for a plenum.”

Committee Meeting Action: Accept in Principle

Revise text to read as follows:

8.1.1.2* An automatic sprinkler system, a carbon dioxide extinguishing system, or an inert agent fire extinguishing system for the protection of the area below ~~the a~~ raised floor in an information technology equipment room or information technology equipment area shall be provided when one or more of the following exist:

- (1) Where there is a critical need to protect data in the process, reduce equipment damage, and facilitate return to service
- (2) The area below the raised floor contains combustible material

Committee Statement: The mere presence of air being transported below the raised floor does not require suppression; therefore Item 1 was removed. A new Item 1 was added to correlate with the risk based approach of using this document. Items 2 and 3 in the proposal were redundant; therefore, Item 2 was removed and Item 3 became Item 2. In addition, the term flammable was changed to combustible for consistency within the document.

75-48 Log #CP13
(8.1.3)

Final Action: Accept

Submitter: Technical Committee on Electronic Computer Systems,

Recommendation: Revise text to read as follows:

8.1.3 Sprinkler systems protecting information technology equipment areas shall be valved separately from and independent of other sprinkler systems.

Substantiation: Valving independent of other systems improves reliability of fire protection for the ITE area.

Committee Meeting Action: Accept

75-49 Log #64
(8.2.1)

Final Action: Accept in Principle

Submitter: Randy Willard, National Reconnaissance Office

Recommendation: Renumber list entry 8.2.1(3) to be an independent subsection and renumber remaining subsections as required. Add alternative smoke detection configurations.

8.2.1* Automatic detection systems shall be installed in the following locations:

(1) At the ceiling level throughout the information technology equipment area.

(2) Below the raised floor of the information technology equipment area containing cables.

~~(3) Above the suspended ceiling and below the raised floor in the information technology equipment area where these spaces are used to recirculate air to other parts of the building.~~

8.2.2 Where in the information technology equipment area the space above the suspended ceiling or below the raised access floor is used to circulate air to other parts of the building, automatic smoke detection shall be installed in one of the following locations:

(1) Throughout the above ceiling or below raised access floor spaces

(2) At each combination of fire and smoke damper required by 5.5.3

(3) At other approved locations to detect smoke entering the information technology equipment area

~~8.2.36-2.2~~ (no change)

~~8.2.46-2.3~~ (no change)

Substantiation: The existing passage dictates a single method for smoke detection where air circulates to other areas, eliminating or discouraging alternate methods that may be available that could provide equivalent or superior performance. For installations where no combustible materials are present in the above ceiling space, the requirement fails to provide enhanced protection but does create significant ongoing maintenance requirements. The proposal recognizes and allows alternative methods.

Committee Meeting Action: Accept in Principle

See Committee Action on Proposal 75-32 (Log #60) and Proposal 75-29 (Log #CP6).

75-50 Log #91
(8.2.2 (New))

Final Action: Reject

Submitter: Stephen McCluer, APC by Schneider Electric

Recommendation: Add a new subparagraph 8.2.2 and renumber subsequent subparagraphs as follows:

8.2.1* Automatic detection systems shall be installed in the following locations:

- (1) At the ceiling level throughout the information technology equipment area
- (2) Below the raised floor of the information technology equipment area containing cables
- (3) Above the suspended ceiling and below the raised floor in the information technology equipment area where these spaces are used to recirculate air to other parts of the building

8.2.2 Automatic smoke and heat detectors shall not be required underneath raised-floor spaces if both of the following conditions exist:

- (1) Space is not accessible for storage purposes or entrance of unauthorized persons
- (2) Space contains no equipment such as steam pipes, electric wiring, shafting, or conveyors.

Substantiation: NFPA 75 requires smoke detectors under raised floors whenever there are cables under the floor. To be clear and to be consistent with NFPA 72, *National Fire Alarm Code*, add a section that says when smoke detectors are not required.

NFPA 72, says

"5.5.2.1.5 Detectors shall not be required... for accessible under-floor spaces if all of the following conditions exist:

- (1) Space is not accessible for storage purposes or entrance of unauthorized persons and is protected against the accumulation of windborne debris.
- (2) Space contains no equipment such as steam pipes, electric wiring, shafting, or conveyors.
- (3) Floor over the space is tight.
- (4) No flammable liquids are processed, handled, or stored on the floor above."

Requirements to install smoke detectors under raised floors made of non-combustible material and complying with the other requirements of this Standard impose unnecessary expense and provide dubious benefit. Under-floor detectors may actually result in false alarms, thereby increasing the risk of unnecessary IT equipment shutdown and increasing risk to personnel.

Committee Meeting Action: Reject

Committee Statement: The new text would create a conflict with Section 8.2.1. In addition the other detection technologies were not included.

75-51 Log #65
(8.2.3)

Final Action: Accept

Submitter: Randy Willard, National Reconnaissance Office

Recommendation: Insert a new subsection before 8.2.3, renumber current 8.2.3 to 8.2.4 as follows:

8.2.3 Where power is required for the operation of the disconnecting means of 10.4.8, that electrical power shall be supervised by the fire alarm control panel.

~~8.2.4~~~~8.2.3~~ The alarms and trouble signals of automatic detection or extinguishing systems shall be arranged to annunciate at a constantly attended location.

Substantiation: Emergency power disconnects, or emergency power off (EPO) systems, usually require the presence of electrical power to effect the power disconnect such as by tripping relays or shunt trip breakers. If the control power is removed, such as by the inadvertent or intentional opening of a breaker, then the power disconnect system would be rendered inoperable with no indication of such. Emergency disconnects are often separate systems independent of the fire alarm system, so it is unclear if the existing subsection 8.2.2 would apply. The proposal would clearly require the fire alarm system to provide supervisory monitoring of the electrical power to the emergency power disconnect system.

Committee Meeting Action: Accept

75-52 Log #92
(8.4.2.1)

Final Action: Reject

Submitter: Stephen McCluer, APC by Schneider Electric

Recommendation: Revise text to read as follows:

8.4.2.1 The power to all electronic equipment shall be disconnected upon ~~activation~~ the initiation of a release of a gaseous agent total flooding system, unless the risk considerations outlined in Chapter 4 indicate the need for continuous power.

Substantiation: 8.4.5 requires that an alarm be given warning of a pending discharge and again of an actual discharge. This two-stage alarm process gives an opportunity to have an orderly shut down of power (and of air in some instances) when a gas discharge is imminent. As written, 8.4.2.1 waits to shut down equipment simultaneously with the release the gas (i.e. second stage). The proposed wording would allow the shutdown process to start with the first stage alarm. This “soft shutdown” could prevent loss of data and possibly damage to electronic equipment.

A.8.1.2 supports this concept. See also discussions in: A.8.4.3; A.8.4.4; and A.8.4.5.

Committee Meeting Action: Reject

Committee Statement: The current wording provides flexibility for the timing of orderly shutdown.

75-53 Log #72
(8.4.3)

Final Action: Reject

Submitter: Abhay Nadgir, Kidde-Fenwal, Inc.

Recommendation: Revise text to read as follows:

8.4.3* Gaseous agent systems shall be automatically actuated by an approved method of detection meeting the requirements of *NFPA 72, National Fire Alarm Code*, and a listed releasing device compatible with the system. A minimum of two independent smoke detection devices shall be used and at least two shall be required to be in alarm to actuate the releasing device. Multiple smoke alarm levels originating from the same smoke detection device shall not be considered as equivalent.

Substantiation: One of the reasons for using cross-zone and counting-zone smoke detection schemes in the release of clean agent suppression systems is to confirm and validate alarm activation from two independent, geographically spaced initiating devices. This principle safeguards against unwanted actuations of suppression systems that are caused by a single point failure of, and/or physical damage to the alarm initiating devices. Cross-zone smoke detection scheme also provides a way to confirm and validate alarm activation using two distinct detection technologies (Ionization Smoke Detection Principle and Photoelectric Smoke Detection Principle).

While Air Sampling Smoke Detection technology allows for several levels of smoke alarm, the use of two smoke obscuration levels (alarm levels) from the same Air Sampling Detector to trigger the release of clean agent suppression systems does NOT provide the alarm confirmation and validation benefits afforded by cross-zone and counting-zone detection schemes. In fact, both alarm inputs from an Air Sampling Detector A) use the same detection technology, B) and are provided by physically the same device.

When a single Air sampling detector is used to release clean agent suppression systems, either a physical damage to the piping network, a localized dust exposure or a failure in the electronics can lead to multi-level alarm activations; hence triggering the inadvertent release of suppression systems.

Committee Meeting Action: Reject

Committee Statement: The proposal limits the use of different detection technologies.

75-54 Log #93
(8.4.3 and A.8.4.3 (New))

Final Action: Accept

Submitter: Stephen McCluer, APC by Schneider Electric

Recommendation: Insert a new paragraph 8.4.3 and renumber subsequent sub-paragraphs as follows:

8.4.3* Hot aisle or cold aisle containment systems shall not obstruct the free flow of gaseous clean agent suppression systems into to the IT equipment or cooling system serving the contained aisle within an information technology equipment room or zone.

Create a new Annex A section for 8.4.3.

A.8.4.3 Various methods of isolating the aisles between rows of equipment racks, known as hot-aisle or cold-aisle containment, are employed to prevent mixing of hot exhaust air or cold intake air through the information technology equipment. In the event that a fire triggers the release of a clean agent gaseous suppression system, the gas suppressant should be able to penetrate all of the IT equipment. In most cases of whole room total flooding systems the flow of air through the IT equipment would normally be sufficient to satisfy this requirement, but the method should be evaluated on a case-by-case basis.

Substantiation: Aisle containment is being widely adopted as a highly efficient method of cooling a data center. In some cases the hot aisle is contained in order to route hot exhaust air back to the cooling units, which may be in the equipment rows, overhead, or elsewhere in the space. In other cases the cold aisle is contained. Both designs are intended to prevent the flow of bypass air and mixing of cool intake and hot exhaust air.

Containment can be permanent (hardwall) or temporary (softwall). Permanent features can include doors at the end of aisles and removable ceiling sections over the aisles. Tests have shown that whole room flooding easily penetrates such construction through the IT equipment, which is deliberately designed to move air through the equipment. It is also possible to pipe gaseous suppression agent directly into the contained space, which will then flow through the equipment in the opposite direction if the equipment fans are shut down prior to discharge.

Temporary containment typically consists of "curtains" hung from the dropped ceiling. Because this method potentially blocks the spray or gas flow from ceiling-mounted fire suppression heads, some designs include a fusible link to automatically drop the curtains when temperature reaches a certain threshold.

The proposed text for new paragraph 8.4.3 simply requires that any aisle containment must not block the flow of gaseous suppression agent to the IT equipment.

The proposed corresponding Annex clarifies that a total flooding system would normally be sufficient to penetrate contained aisles, but the AHJ should evaluate each installation because many are customized and site-specific solutions. It also clarifies that a contained aisle might be designated as a "zone", which is permitted by the NEC in Article 645. A zone must be able to be isolated both electrically and mechanically (meaning that articles of combustion must be confined to the zone).

Committee Meeting Action: Accept

75-55 Log #73
(8.4.6 (New))

Final Action: Reject

Submitter: Abhay Nadgir, Kidde-Fenwal, Inc.

Recommendation: Add new text to read as follows:

8.4.6 Releasing service fire alarm systems used for fire-suppression-releasing service shall be provided with a listed disconnect switch to allow the system to be tested without actuating the fire suppression system.

8.4.6.1 Operation of a disconnect switch or a disable function shall cause a supervisory signal at the releasing service fire alarm control unit and a disabled indication local to the switch.

8.4.6.2 The disconnect shall be a physical keyed switch and not be accomplished using software.

8.6.4.3 The key shall be located in proximity of the agent containers and shall not be removable when the suppression system is disabled

Substantiation: The additional language will align the disconnect switch requirements of NFPA 75 with those of NFPA 72. The keyed-access type will ensure that only authorized personnel with proper access can disable the suppression system.

The agent cylinders and their releasing control unit may not always be in line of sight or installed in proximity of each other for the disablement of the suppression system to be visible from the cylinders. The addition of indication local to the switch and cylinders mitigates errors in testing and consequently in unintended discharges.

If a fire occurs when the Key Switch is operated for maintenance or service purposes, the need to quickly restore the system back into operational conditions is critical. A non-removable key will ensure the key is locally present and readily operable.

Committee Meeting Action: Reject

Committee Statement: This is out side of the scope of NFPA 75. See NFPA 2001 and NFPA 72.

75-56 Log #78
(9.1)

Final Action: Accept

Submitter: Bob Eugene, Underwriters Laboratories Inc.

Recommendation: Revise text to read as follows:

9.1* Protection Required for Records Within the Information Technology Equipment Room.

Any records regularly kept or stored in the information technology equipment room shall be provided with the following protection:

(1) Vital or important records that have not been duplicated shall be stored in listed record protection equipment with a Class 150 1-hour or better fire resistance rating as outlined in ANSI/UL 72, Standard for Tests for Fire Resistance of Record Protection Equipment.

(2) All other records shall be stored in closed metal files or cabinets.

Substantiation: Add ANSI approval designation to ANSI/UL 72.

Committee Meeting Action: Accept

75-57 Log #94
(9.2.2)

Final Action: Accept in Principle

Submitter: Stephen McCluer, APC by Schneider Electric

Recommendation: Revise text to read as follows:

9.2.2 Portable extinguishing equipment and hose lines for whichever is installed in record storage rooms or areas, shall be installed in accordance with 8.3.1 through 8.3.5.

Substantiation: As written, 9.2.2 requires BOTH portable fire extinguishers AND hose lines: "Portable extinguishing equipment and hose lines... shall be installed... This is not the intent. The proposed language states that whichever method is used it shall follow the standard.

Committee Meeting Action: Accept in Principle

Revise text to read as follows:

9.2.2 The installation of portable extinguishing equipment and hose lines shall be in accordance with Section 8.3.1 through 8.3.5.

Committee Statement: To clarify that this section does not require portable fire extinguishers or hose lines.

75-58 Log #95
(10.1.1)

Final Action: Reject

Submitter: Stephen McCluer, APC by Schneider Electric

Recommendation: Revise text to read as follows:

10.1.1 Dampers in HVAC systems serving information technology equipment areas shall operate upon activation of smoke detectors and by operation of the disconnecting means, when required by 10.4.8.* The automatic fire and smoke dampers required by 5.5.3 shall also operate upon activation of smoke detectors and by operation of disconnecting means required by 10.4.8.*

Substantiation: Per NEC-2011, a disconnecting means is not always required. Revise the text to indicate that, when a disconnecting means is installed, its operation will cause the dampers to close.

Committee Meeting Action: Reject

Committee Statement: A disconnecting means is always required by Section 10.4.8; therefore, the addition of the word "when" is inappropriate.

75-59 Log #96
(10.1.2)

Final Action: Accept in Principle

Submitter: Stephen McCluer, APC by Schneider Electric

Recommendation: Revise text to read as follows:

10.1.2 ~~Either a~~ Air ducts serving other rooms shall be installed in one of the following manners:

(1) Air ducts shall not pass through the information technology equipment area; or

(2) ~~f~~ Fire dampers shall be provided in the ducts.

Substantiation: Editorial change. Rearrange per Style Manual and for clarity. Multiple requirements should be itemized.

Committee Meeting Action: Accept in Principle

Revise text to read as follows:

10.1.2 ~~Either air ducts serving other rooms shall not pass through the information technology equipment area or fire dampers shall be provided in the ducts.~~ Air ducts that pass through the information technology area and only serve other rooms shall be provided with fire dampers.

Committee Statement: Editorial changes to comply with the Manual of Style.

75-60 Log #15
(10.1.3)

Final Action: Accept in Principle

Submitter: Stanley Kaufman, CableSafe, Inc. / Rep. The Society of the Plastics Industry

Recommendation: Delete text to read as follows:

10.1.3 All duct insulation and linings, including vapor barriers and coatings, shall have a flame spread index of 25 or less without evidence of continued progressive combustion and a smoke developed index no higher than 50, in accordance with ~~NFPA 255, Standard Method of Test of Surface Burning Characteristics of Building Materials~~, ASTM E 84, Standard Test Method for Surface Burning Characteristics of Building Materials, or UL 723, Standard for Test for Surface Burning Characteristics of Building Materials.

Substantiation: NFPA 255 has been withdrawn.

Committee Meeting Action: Accept in Principle

See Committee Action on Proposal 75-61 (Log #79).

75-61 Log #79
(10.1.3)

Final Action: Accept

Submitter: Bob Eugene, Underwriters Laboratories Inc.

Recommendation: Revise text to read as follows:

10.1.3 All duct insulation and linings, including vapor barriers and coatings, shall have a flame spread index of 25 or less without evidence of continued progressive combustion and a smoke developed index no higher than 50, in accordance with ~~NFPA 255, Standard Method of Test of Surface Burning Characteristics of Building Materials~~; ASTM E 84, Standard Test Method for Surface Burning Characteristics of Building Materials; or ANSI/UL 723, Standard for Test for Surface Burning Characteristics of Building Materials.

Substantiation: NFPA 255 was withdrawn in the Fall 2009. ANSI approval designation is added to ANSI/UL 723.

Committee Meeting Action: Accept

75-62 Log #80
(10.1.4)

Final Action: Accept

Submitter: Bob Eugene, Underwriters Laboratories Inc.

Recommendation: Revise text to read as follows:

10.1.4* Air filters for use in air-conditioning systems shall ~~have a Class 1 rating in accordance with~~ comply with the requirements of ANSI/UL 900, Standard for Air Filter Units.

Substantiation: Add ANSI approval designation to ANSI/UL 900. Performance requirements of UL 900 have been revised and are no longer separated into multiple classifications.

Committee Meeting Action: Accept

75-63 Log #CP3
(10.2 (New))

Final Action: Accept

Submitter: Technical Committee on Electronic Computer Systems,

Recommendation: Add new text and renumber following sections as follows:

10.2* Hot/Cold Aisle Containment Systems

A.10.2.1 Hot/Cold Aisle Containment Systems are cooling systems that could create microenvironments within the ITE Area that affects various fire protection and safety systems within the ITE Area. The following factors should be considered when installing these systems:

- Construction Materials
- Detection Systems
- Suppression and Sprinkler Systems
- Egress Components including exit signage, emergency lighting, travel distance,
- Fire Extinguisher placement

10.2.1.1 Materials used in Heat Containment Systems shall have a maximum flame spread of 25 and maximum smoke development of 50 in accordance with ASTM E84, Standard Test Method for Surface Burning Characteristics of Building Materials.

10.2.1.2 The detection system for the ITE Area shall be extended to the Heat Containment System enclosure.

10.2.1.3* If provided, the fire suppression system for the ITE shall be extended into the Heat Containment System enclosure.

A.10.2.1.3 The gas suppression system design should consider the potential for higher concentrations due to construction orientation

Substantiation: The proposed text adds requirements for the risks associated with new technologies that are currently being deployed.

Committee Meeting Action: Accept

75-64 Log #47
(10.3)

Final Action: Accept in Principle

Submitter: Ronald Marts, Telcordia Technologies

Recommendation: Delete text to read as follows:

10.3* Electrical Service.

This section covers equipment, power-supply wiring, equipment interconnecting wiring, and grounding of information technology equipment and systems, ~~including terminal units~~, in an information technology equipment room. [70:645.1]

Substantiation: This proposal is one of several that update Chapter 10 to coincide with recent approved changes in Article 645 of the NEC.

Committee Meeting Action: Accept in Principle

Revise text to read as follows:

10.3* Electrical Service. ~~This section covers~~ Equipment, power-supply wiring, equipment interconnecting wiring, and grounding of information technology equipment and systems, ~~including terminal units~~, in an information technology equipment room shall comply with this Section.

Committee Statement: The committee has removed the extracts from Article 645 of NFPA 70; however, the material still applies to ITE areas. Changes also comply with the MOS.

75-65 Log #97
(10.3)

Final Action: Accept in Principle

Submitter: Stephen McCluer, APC by Schneider Electric

Recommendation: Revise text to read as follows:

This section covers equipment, power-supply wiring, equipment interconnecting wiring, and grounding of information technology equipment and systems, ~~including terminal units~~, in an information technology equipment room. [70:645.1]

Substantiation: Per NEC-2011 Proposal 12-121, there is no need to include the phrase “terminal units” from among the many types of IT equipment. It suggests that monitors and computer displays should be held to a different standard.

This is not original material; its reference/source is as follows:

ROP - June 2010, Proposal 12-121, CMP-12 Article 645 Task Group

Committee Meeting Action: Accept in Principle

See Committee Action on Proposal 75-64 (Log #47).

75-66 Log #16
(10.3.1)

Final Action: Accept in Principle

Submitter: Stanley Kaufman, CableSafe, Inc. / Rep. The Society of the Plastics Industry

Recommendation: Delete text to read as follows:

10.3.1 All wiring shall conform to *NFPA 70, National Electrical Code*. Wiring in an air space below a raised floor ~~or above a suspended ceiling~~ shall conform to Article 645 of NFPA 70 where such space is used to circulate information technology equipment area environmental air.

Substantiation: NEC Article 645 does not cover wiring above a suspended ceiling (in a ceiling cavity plenum), only under raised floors (in a raised floor plenum), see 645.5(D) in the 2008 edition of the NEC. See also 645.3(B) in the 2011 NEC.

Committee Meeting Action: Accept in Principle

Revise text to read as follows and renumber sections that follow:

10.3.1 All wiring shall conform to *NFPA 70, National Electrical Code*.

10.3.2 Wiring in an air space below a raised floor ~~or above a suspended ceiling~~ shall be permitted to conform to Article 645 of NFPA 70 where such space is used to circulate information technology equipment area environmental air.

Committee Statement: Use of Article 645 is voluntary; therefore, it is inappropriate to require its use.

75-67 Log #98
(10.3.1)

Final Action: Accept in Principle

Submitter: Stephen McCluer, APC by Schneider Electric

Recommendation: Revise text to read as follows:

10.3.1 All wiring shall conform to *NFPA 70, National Electrical Code*. Wiring in an air space below a raised floor ~~or above a suspended ceiling~~ shall conform to Article 645 of NFPA 70 where such space is used to circulate information technology equipment area environmental air.

Substantiation: Wiring above a suspended ceiling (i.e., in a ceiling cavity plenum) is not addressed in NEC Article 645. Article 645 only addressed wiring under raised floors (in a raised floor plenum). Wiring and cabling in ceiling cavity plenums is covered in NEC Sections 300.22(C)(1); 725.154(A); 760.53(B)(2); 760.154(A); and 770.154(A).

See:

645.5(D) in the 2008 edition of the NEC.

Proposed 645.3(B) in the 2011 edition of the NEC

This is not original material; its reference/source is as follows:

NEC ROP 12-131; ROC 12-77, CMP-12 Article 645 Task Group

Committee Meeting Action: Accept in Principle

See Committee Action of Proposal 75-66 (Log #16).

75-68 Log #17
(10.3.2)

Final Action: Accept

Submitter: Stanley Kaufman, CableSafe, Inc. / Rep. The Society of the Plastics Industry

Recommendation: Revise text to read as follows:

10.3.2* Premise transformers installed in the information technology equipment area shall be of the dry type or type filled with a noncombustible dielectric medium. Such transformers shall be installed in accordance with the requirements of Article 450 of NFPA 70, National Electrical Code.

Substantiation: The NEC is a big book. It would be helpful to the users NFPA 75 if the references to the NEC were as specific as possible.

Committee Meeting Action: Accept

75-69 Log #18
(10.3.4)

Final Action: Accept

Submitter: Stanley Kaufman, CableSafe, Inc. / Rep. The Society of the Plastics Industry

Recommendation: Revise text to read as follows:

10.3.4* Protection against lightning surges shall be provided in accordance with the requirements of Articles 280 and 285 of NFPA 70, National Electrical Code.

Substantiation: The NEC is a big book. It would be helpful to the users NFPA 75 if the references to the NEC were as specific as possible.

Perhaps a reference to NFPA 780, Standard for the Installation of Lightning Protection Systems would also be appropriate.

Committee Meeting Action: Accept

75-70 Log #19
(10.3.5)

Final Action: Reject

Submitter: Stanley Kaufman, CableSafe, Inc. / Rep. The Society of the Plastics Industry

Recommendation: Revise text to read as follows:

10.3.5* Installation of junction boxes shall comply with Article 314 of NFPA 70, National Electrical Code. Junction boxes shall be approved, completely enclosed, fastened, accessible, and grounded. No splices or connections shall be made in the underfloor area except within junction boxes or approved-type receptacles and connectors.

Substantiation: Reference to NEC Article 314, Outlet, Device, Pull, and Junction Boxes; Conduit Bodies; Fittings; and Handhole Enclosures, provides needed details on the installation of junction boxes.

Committee Meeting Action: Reject

Committee Statement: The proposed text is redundant because NFPA 70 Chapter 3 already applies.

75-71 Log #20
(10.3.6)

Final Action: Reject

Submitter: Stanley Kaufman, CableSafe, Inc. / Rep. The Society of the Plastics Industry

Recommendation: Revise text to read as follows:

10.3.6 Emergency lighting installed on compliance with Article 700, Emergency Systems, of NFPA 70, National Electrical Code, shall be provided in the information technology equipment area.

Substantiation: Reference to NEC Article 700, Emergency Systems, provides needed details on the installation of emergency lighting.

Committee Meeting Action: Reject

Committee Statement: The proposed text is redundant because NFPA 70 already applies.

75-72 Log #CP4
(10.3.7)

Final Action: Accept

Submitter: Technical Committee on Electronic Computer Systems,

Recommendation: Add new text to read as follows:

10.3.7. All electrical wiring and optical fiber cabling in the air space above a suspended ceiling shall conform to NFPA 90A and NFPA 70 when that air space is used for the movement of air.

Substantiation: NFPA 90A has primary responsibility for combustibles in plenums. NFPA 90A permits NFPA 75 to establish alternate requirements for wiring in raised floor plenums. It does not permit any alternate requirements for wiring in ceiling cavity plenums

Committee Meeting Action: Accept

75-73 Log #21
(10.3.7 (New))

Final Action: Reject

Submitter: Stanley Kaufman, CableSafe, Inc. / Rep. The Society of the Plastics Industry

Recommendation: Add new text to read as follows:

10.3.7 Spread of Fire or Products of Combustion. Sections 300.21, 770.26, 800.26, and 820.26 of NFPA 70, National Electrical Code, shall apply to penetrations of the fire resistant room boundary. [70:645.3(A)]

Substantiation: This proposal is one in a series of proposals to update the extracts from NEC Article 645 in Chapter 10 of NFPA 75.

Committee Meeting Action: Reject

Committee Statement: Proposed text is redundant as the requirement is already found in Section 5.5.1.

75-74 Log #22
(10.3.8 (New))

Final Action: Reject

Submitter: Stanley Kaufman, CableSafe, Inc. / Rep. The Society of the Plastics Industry

Recommendation: Add new text to read as follows:

10.3.8 Plenums. Sections 300.22(C)(1), 725.154(A), 760.53(B)(2), 760.154(A), 770.113(C), 800.113(C), 820.113(C) & 820.154(A) and Tables 770.154(A), 800.154(A) and 820.154(A) of NFPA 70, National Electrical Code, shall apply to wiring and cabling in a plenum (other space used for environmental air) above an information technology equipment room. [70:645.3(B)]

Substantiation: This proposal is one in a series of proposals to update the extracts from NEC Article 645 in Chapter 10 of NFPA 75.

Committee Meeting Action: Reject

Committee Statement: The proposed changes provide overemphasis on the NEC and the specific cross-references are not required.

75-75 Log #23
(10.3.9 (New))

Final Action: Reject

Submitter: Stanley Kaufman, CableSafe, Inc. / Rep. The Society of the Plastics Industry

Recommendation: Add new text to read as follows:

10.3.9 Grounding. The non-current-carrying conductive members of optical fiber cables in an information technology equipment room shall be grounded in accordance with 770.114 of NFPA 70, *National Electrical Code*. [70:645.3(C)]

Substantiation: This proposal is one in a series of proposals to update the extracts from NEC Article 645 in Chapter 10 of NFPA 75.

Committee Meeting Action: Reject

Committee Statement: The proposed changes provide overemphasis on the NEC and the specific cross-references are not required.

75-76 Log #24
(10.3.10 (New))

Final Action: Reject

Submitter: Stanley Kaufman, CableSafe, Inc. / Rep. The Society of the Plastics Industry

Recommendation: Add new text to read as follows:

10.3.10 Electrical Classification of Data Circuits. NFPA 70, *National Electrical Code*. Sections 725.121(A)(4) shall apply to the electrical classification of listed information technology equipment signaling circuits. 725.139(D)(1), and 800.133(A)(1)(b) shall apply to the electrical classification of Class 2 and Class 3 circuits in the same cable with communications circuits. [70:645.3(D)]

Substantiation: This proposal is one in a series of proposals to update the extracts from NEC Article 645 in Chapter 10 of NFPA 75.

Committee Meeting Action: Reject

Committee Statement: The proposed changes provide overemphasis on the NEC and the specific cross-references are not required.

75-77 Log #25
(10.3.11 (New))

Final Action: Reject

Submitter: Stanley Kaufman, CableSafe, Inc. / Rep. The Society of the Plastics Industry

Recommendation: Add new text to read as follows:

10.3.11 Fire Alarm Equipment. Parts I, II, & III of Article 760 of NFPA 70, *National Electrical Code*, shall apply to fire alarm systems equipment installed in an information technology equipment room. [70:645.3(E)]

Substantiation: This proposal is one in a series of proposals to update the extracts from NEC Article 645 in Chapter 10 of NFPA 75.

Committee Meeting Action: Reject

Committee Statement: The proposed changes provide overemphasis on the NEC and the specific cross-references are not required.

75-78 Log #26
(10.3.12 (New))

Final Action: Reject

Submitter: Stanley Kaufman, CableSafe, Inc. / Rep. The Society of the Plastics Industry

Recommendation: Add new text to read as follows:

10.3.12 Communications Equipment Parts I, II, III, IV & V of Article 800 of NFPA 70, *National Electrical Code*, shall apply to communications equipment installed in an information technology equipment room. Article 645 shall apply to the powering of communications equipment in an information technology equipment room. [70:645.3(F)]

Substantiation: This proposal is one in a series of proposals to update the extracts from NEC Article 645 in Chapter 10 of NFPA 75.

Committee Meeting Action: Reject

Committee Statement: The proposed changes provide overemphasis on the NEC and the specific cross-references are not required.

75-79 Log #27
(10.3.13 (New))

Final Action: Reject

Submitter: Stanley Kaufman, CableSafe, Inc. / Rep. The Society of the Plastics Industry

Recommendation: Add new text to read as follows:

10.3.13 Community Antenna Television and Radio Distribution Equipment. Parts I, II, III, IV & V of Article 820 of NFPA 70, *National Electrical Code*, shall apply to community antenna television and radio distribution systems equipment installed in an information technology equipment room. Article 645 shall apply to the powering of community antenna television and radio distribution systems equipment installed in an information technology equipment room.[70:645.3(G)]

Substantiation: This proposal is one in a series of proposals to update the extracts from NEC Article 645 in Chapter 10 of NFPA 75.

Committee Meeting Action: Reject

Committee Statement: The proposed changes provide overemphasis on the NEC and the specific cross-references are not required.

75-80 Log #101
(10.4 and A.10.4)

Final Action: Accept in Part

Submitter: Stephen McCluer, APC by Schneider Electric

Recommendation: Delete text to read as follows:

- ~~10.4 Supply Circuits and Interconnecting Cables [70:645.5]~~
- ~~10.4.1 Branch-Circuit Conductors [70: 645.5(A)]~~
- ~~10.4.2 Cord-and-Plug Connections [70: 645.5(B)]~~
- ~~10.4.3* Interconnecting Cables [70: 645.5(C)]~~
- ~~10.4.4* Under Raised Floors. [70: 645.5(D)]~~
- ~~10.4.4(1)~~
- ~~10.4.4(2)~~
- ~~10.4.4(3)~~
- ~~10.4.4(4)~~
- ~~10.4.4(5)~~
- ~~10.4.4(6)~~
- ~~(a)~~
- ~~(b)~~
- ~~(c)~~
- ~~10.4.5* Abandoned Supply Circuits and Interconnecting Cables [70: 645.5(F)]~~
- ~~10.4.6 Securing in Place [70:645.5(E)]~~
- ~~10.4.7* Cables Not in Information Technology Equipment Room [70: 645.6]~~
- ~~10.4.8 Disconnecting Means [70: 645.10]—10.4.8(1)~~
- ~~10.4.9 Uninterruptible Power Supplies (UPS) [70: 645.11]—10.4.9(1)~~
- ~~10.4.10 Grounding [70: 645.15]~~
- ~~10.4.11 Marking [70: 645.16]~~
- ~~A.10.4.3~~
- ~~A.10.4.4~~
- ~~A.10.4.5~~
- ~~A.10.4.6~~
- ~~A.10.4.7~~
- ~~A.10.4.9.1~~
- ~~A.10.4.10:~~

Substantiation: Paragraph 10.3.1 already states that all wiring shall conform to NFPA 70, and all wiring below a raised floor shall conform to NFPA 645. There is no need to duplicate word-for-word what is already in the NEC. NFPA 70 and NFPA 75 are in different cycles, so when changes are made to the NEC (which is the case with Article 645 in this case), the two documents are no longer harmonized and may actually conflict. Delete the text that is redundant to the NEC and keep only that text that adds new or supporting material. The requirements are already made mandatory by reference to the NEC.

Committee Meeting Action: Accept in Part

Delete the following Sections and associated Annex material as follows:

- ~~10.4.1 Branch-Circuit Conductors [70: 645.5(A)]~~
- ~~10.4.4* Under Raised Floors. [70: 645.5(D)]~~
- ~~10.4.4(1)~~
- ~~10.4.4(2)~~
- ~~10.4.4(3)~~
- ~~10.4.4(4)~~
- ~~10.4.4(5)~~
- ~~10.4.4(6)~~
- ~~(a)~~
- ~~(b)~~
- ~~(c)~~
- ~~10.4.7* Cables Not in Information Technology Equipment Room [70: 645.6]~~
- ~~A.10.4.3~~
- ~~A.10.4.4~~

~~A-10.4.7~~

Committee Statement: Section 10.4.2, 10.4.3, 10.4.5, 10.4.6, 10.4.9, 10.4.10, and 10.4.11 all provide useful requirements for NFPA 75 and therefore should not be removed.

75-81 Log #28
(10.4.1)

Final Action: Reject

Submitter: Stanley Kaufman, CableSafe, Inc. / Rep. The Society of the Plastics Industry

Recommendation: Revise text to read as follows:

10.4.1 Branch-Circuit Conductors. The branch-circuit conductors supplying one or more units of information technology equipment ~~a data processing system~~ shall have an ampacity not less than 125 percent of the total connected load. [70:645.5(A)].

Substantiation: This proposal is one in a series of proposals to update the extracts from NEC Article 645 in Chapter 10 of NFPA 75.

Committee Meeting Action: Reject

Committee Statement: See Committee Action on Proposal 75-80 (Log #101).

75-82 Log #48
(10.4.1)

Final Action: Reject

Submitter: Ronald Marts, Telcordia Technologies

Recommendation: Revise text to read as follows:

10.4.1 Branch-Circuit Conductors. The branch-circuit conductors supplying one or more units of a ~~data processing system~~ information technology equipment shall have an ampacity not less than 125 percent of the total connected load. [70:645.5(A)]

Substantiation: This proposal is one of several that update Chapter 10 to coincide with recent approved changes in Article 645 of the NEC.

Committee Meeting Action: Reject

Committee Statement: See Committee Action on Proposal 75-80 (Log #101).

75-83 Log #37
(10.4.2)

Final Action: Accept in Principle

Submitter: Stanley Kaufman, CableSafe, Inc. / Rep. The Society of the Plastics Industry

Recommendation: Revise text to read as follows:

~~10.4.2 Power Supply Cords. Cord-and-Plug Connections. Information technology equipment~~ The data processing system shall be permitted to be connected to a branch circuit by a power supply cord, any of the following listed means:

- (1) ~~Power supply cords shall not Flexible cord and attachment plug cap not to exceed 4.5 m (15 ft).~~
- (2) ~~Power cords shall be listed and a type permitted for use on listed information technology equipment or shall be constructed of listed flexible cord and listed attachment plugs and cord connectors of a type permitted for information technology equipment. Cord set assembly, where run on the surface of the floor, shall be protected against physical damage. [70:645.5(B)]~~

Substantiation: This proposal is one in a series of proposals to update the extracts from NEC Article 645 in Chapter 10 of NFPA 75.

Committee Meeting Action: Accept in Principle

Revise text to read as follows:

~~10.4.2 Power Supply Cords. Cord-and-Plug Connections. Information technology equipment~~ The data processing system shall be permitted to be connected to a branch circuit by a power supply cord, any of the following listed means:

- 10.4.2.1 Power supply cords shall not Flexible cord and attachment plug cap not to exceed 4.5 m (15 ft).
- 10.4.2.2 Power cords shall be listed and a type permitted for use on listed information technology equipment or be constructed of listed flexible cord and listed attachment plugs and cord connectors of a type permitted for information technology equipment. Cord set assembly, where run on the surface of the floor, shall be protected against physical damage.

Committee Statement: The committee has removed the extracts from Article 645 of NFPA 70; however, the material still applies to ITE areas. Changes were made to comply with the MOS.

75-84 Log #49
(10.4.2)

Final Action: Accept in Principle

Submitter: Ronald Marts, Telcordia Technologies

Recommendation: Revise text to read as follows:

10.4.2* ~~Cord-and-Plug Connections.~~ The ~~data processing information technology equipment~~ system shall be permitted to be connected to a branch circuit by any of the following listed means:

- (1) ~~Power cords shall not Flexible cord and attachment plug cap not to exceed 4.5 m (15 ft).~~
- (2) ~~Cord set assembly, where run on the surface of the floor, shall be protected against physical damage. Power cords shall be listed and suitable for information technology equipment.~~

Substantiation: This proposal is one of several that update Chapter 10 to coincide with recent approved changes in Article 645 of the NEC.

Committee Meeting Action: Accept in Principle

See Committee Action on Proposal 75-83 (Log #37).

75-85 Log #99
(10.4.2)

Final Action: Accept in Principle

Submitter: Stephen McCluer, APC by Schneider Electric

Recommendation: Revise text to read as follows:

10.4.2 Power Supply Cords, Cord and Plug Connections: ~~The data processing system~~ Information technology equipment shall be permitted to be connected to a branch circuit by a power supply cord. ~~any of the following listed means:~~

- (1) Power supply cords shall not ~~Flexible cord and attachment plug can~~ not to exceed 4.5 m (15 ft).
- (2) Power cords shall be listed and a type permitted for use on listed information technology equipment or shall be constructed of listed flexible cord and listed attachment plugs and cord connectors of a type permitted for information technology equipment. ~~Cord set assembly, where run on the surface of the floor, shall be protected against physical damage:~~ [70:645.5(B)]

Substantiation: Correlate with proposed NEC-2011, 645(B)(2).

This is not original material; its reference/source is as follows:

NFPA 70-2011 ROP 12-139, CMP-12 Article 645 Task Group. NFPA 70-2011 ROC 12-89

Committee Meeting Action: Accept in Principle

See Committee Action on Proposal 75-83 (Log #37).

75-86 Log #38
(10.4.3)

Final Action: Accept in Principle

Submitter: Stanley Kaufman, CableSafe, Inc. / Rep. The Society of the Plastics Industry

Recommendation: Revise text to read as follows:

10.4.3* Interconnecting Cables. Separate information technology equipment ~~data processing~~ units shall be permitted to be interconnected by means of listed cables and cable assemblies. The 4.5 m (15 ft) limitation in (B) shall not apply to interconnecting cables ~~Where exposed to physical damage, the installation shall be protected by approved means:~~ [70:645.5(C)]

Substantiation: This proposal is one in a series of proposals to update the extracts from NEC Article 645 in Chapter 10 of NFPA 75.

Committee Meeting Action: Accept in Principle

Revise text to read as follows:

10.4.3* Interconnecting Cables. Separate information technology equipment ~~data processing~~ units shall be permitted to be interconnected by means of listed cables and cable assemblies.

10.4.4 The 4.5 m (15 ft) limitation on power cords shall not apply to interconnecting cables ~~Where exposed to physical damage, the installation shall be protected by approved means:~~

Committee Statement: The committee has removed the extracts from Article 645 of NFPA 70; however, the material still applies to ITE areas. Changes were also made to comply with the MOS. The length restriction in Section 10.4.2 should only apply to power cords and not interconnecting cables.

75-87 Log #100
(10.4.3)

Final Action: Accept in Principle

Submitter: Stephen McCluer, APC by Schneider Electric

Recommendation: Revise text to read as follows:

10.4.3* Interconnecting Cables. Separate data processing units, equipment racks, or cabinets shall be permitted to be interconnected by means of listed cables and cable assemblies. Where exposed to physical damage, the installation shall be protected by approved means. [70:645.5(C)]

Substantiation: The term "data processing unit" is not defined but is assumed to be a single item of electronic equipment. In some cases single, floor-standing devices are used, but more commonly the electronic devices are clustered into equipment racks or equipment cabinets. Usually the devices in a rack or cabinet receive power from a rack-mounted ITE power strip connected via interconnect cable to a branch circuit breaker in a power distribution unit (PDU). Dual input or multiple input power supplies are common, in which case each input (A-feed, B-feed, or C-feed) is powered by a separate ITE power strip, each of which is powered by a separate branch circuit from a PDU.

Committee Meeting Action: Accept in Principle

See Committee Action on Proposal 75-86 (Log #38).

75-88 Log #50
(10.4.3.1)

Final Action: Accept in Principle

Submitter: Ronald Marts, Telcordia Technologies

Recommendation: Revise text to read as follows:

10.4.3.1* Separate data processing information technology equipment units shall be permitted to be interconnected by means of listed cables and cable assemblies.

A.10.4.3.1 The 4.5 m (15 ft) limitation in (B) does not apply to interconnecting cables.

Substantiation: This proposal is one of several that update Chapter 10 to coincide with recent approved changes in Article 645 of the NEC.

Committee Meeting Action: Accept in Principle

See Committee Action on Proposal 75-86 (Log #38).

75-89 Log #51
(10.4.3.2)

Final Action: Reject

Submitter: Ronald Marts, Telcordia Technologies

Recommendation: Revise text to read as follows:

10.4.3.2 Physical Protection. Where exposed to physical damage, the installation supply circuits and interconnecting cables shall be protected by approved means.

[70:645.5(C)]

Substantiation: This proposal is one of several that update Chapter 10 to coincide with recent approved changes in Article 645 of the NEC.

Committee Meeting Action: Reject

Committee Statement: See Committee Action on Proposal 75-80 (Log #101). It is the committee's understanding that proposal was for Section 10.4.3 and not 10.4.3.2.

75-90 Log #29
(10.4.4)

Final Action: Reject

Submitter: Stanley Kaufman, CableSafe, Inc. / Rep. The Society of the Plastics Industry

Recommendation: Renumber existing 10.4.4 to 10.4.5 and insert new 10.4.4 as follows:

10.4.4 Physical Protection. Where exposed to physical damage, supply circuits and interconnecting cables shall be protected. 70:645.5(D)]

Substantiation: Note: Supporting material is available for review at NFPA Headquarters.

Committee Meeting Action: Reject

Committee Statement: See Committee Action on Proposal 75-80 (Log #101).

75-91 Log #52
(10.4.4)

Final Action: Reject

Submitter: Ronald Marts, Telcordia Technologies

Recommendation: Add new text to read as follows:

10.4.4* Under Raised Floors. Power cables, communications cables, connecting cables, interconnecting cables, cord-and-plug connections, and receptacles associated with the information technology equipment shall be permitted under a raised floor, provided the following conditions are met:

(1) The raised floor is of suitable construction, and the area under the floor is accessible.

(2) The branch-circuit supply conductors to receptacles or field-wired equipment are in rigid metal conduit, rigid nonmetallic conduit, intermediate metal conduit, electrical metallic tubing, electrical nonmetallic tubing, metal wireway, nonmetallic wireway, surface metal raceway with metal cover, nonmetallic surface raceway, flexible metal conduit, liquidtight flexible metal conduit, or liquidtight flexible nonmetallic conduit, Type MI cable, Type MC cable, or Type AC cable. These supply conductors shall be installed in accordance with the requirements of NFPA 70, National Electrical Code, Section 300.11.

Exception: Compliance with 300.11(A) shall not be required when raceway is supported by the floor of the building under the raised floor.

(Remainder of section remains the same)

Substantiation: This proposal is one of several that update Chapter 10 to coincide with recent approved changes in Article 645 of the NEC.

Committee Meeting Action: Reject

Committee Statement: Requirements are redundant. Also see Committee Action on Proposal 75-80 (Log #101).

75-92 Log #39
(10.4.4 and A.10.4.4)

Final Action: Reject

Submitter: Stanley Kaufman, CableSafe, Inc. / Rep. The Society of the Plastics Industry

Recommendation: Renummer the existing 10.4.4 to 10.4.5 and revise it as shown. Also renumber the existing A.10.4.4 to A.10.4.5 as follows:

~~10.4.4~~*10.4.5* **Under Raised Floors.** Power cables, communications cables, connecting cables, interconnecting cables, cord-and plug connections, and receptacles associated with the information technology equipment shall be permitted under a raised floor, provided the following conditions are met:

- (1) The raised floor is of suitable construction, and the area under the floor is accessible.
- (2) The branch-circuit supply conductors to receptacles or field-wired equipment are in rigid metal conduit, rigid nonmetallic conduit, intermediate metal conduit, electrical metallic tubing, electrical nonmetallic tubing, metal wireway, nonmetallic wireway, surface metal raceway with metal cover, nonmetallic surface raceway, flexible metal conduit, liquidtight flexible metal conduit, or liquidtight flexible nonmetallic conduit, Type MI cable, Type MC cable, or Type AC cable, and associated metallic and nonmetallic boxes or enclosures. These supply conductors shall be installed in accordance with the requirements of *NFPA 70, National Electrical Code*, Section 300.11.
- (3) Supply cords of listed information technology equipment in accordance with *NFPA 70, National Electrical Code*, 645.5(B).
- (4) Ventilation in the underfloor area is used for the information technology equipment room only, except as provided in *NFPA 70, National Electrical Code*, 645.4(2). The ventilation system shall be so arranged, with approved smoke detection devices, that upon the detection of fire or products of combustion in the underfloor space, the circulation of air will cease.
- (5) Openings in raised floors for cords and cables protect cords and cables against abrasions and minimize the entrance of debris beneath the floor
- (6) Cables, other than those covered in (2) and (3) and those complying with (a), (b), and (c), shall be listed as Type DP cable having adequate fire-resistant characteristics suitable for use under raised floors of an information technology equipment room
 - (a) Interconnecting cables enclosed in a raceway.
 - (b) ~~Interconnecting cables listed with equipment manufactured prior to July 1, 1994, being installed with that equipment. Cable type designations shown in Table 10.4.4. shall be permitted. Green, or green with one or more yellow stripes, insulated single-conductor cables, 4 AWG and larger, marked "for use in cable trays" or "for CT use" shall be permitted for equipment grounding.~~

***** [Insert Table 645.5 from 2008 NEC here (not shown)]*****

~~(c) Cable type designations Type TC(NFPA70, Article 336), Types CL2, CL3, and PLTC (NFPA 70, Article 725), Type ITC (NFPA 70, Article 727), Types NPLF and FPL (NFPA 70, Article 760), Types OFC and OFN (NFPA 70, Article 770), Types CM and MP (NFPA 70, Article 800), and Type CATV (NFPA 70, Article 820). These designations shall be permitted to have an additional letter P or R or G. Green, or green with one or more yellow stripes, insulated single-conductor cables, 4 AWG and larger, marked "for use in cable trays" or "for CT use" shall be permitted for equipment grounding.~~

[70:645.5(ED)]

Substantiation: This proposal is one in a series of proposals to update the extracts from NEC Article 645 in Chapter 10 of NFPA 75.

Committee Meeting Action: Reject

Committee Statement: Requirements are redundant. Also see Committee Action on Proposal 75-92 (Log #39).

75-93 Log #53
(10.4.5)

Final Action: Accept in Principle

Submitter: Ronald Marts, Telcordia Technologies

Recommendation: Delete text to read as follows:

10.4.5* Abandoned Supply Circuits and Interconnecting Cables. The accessible portion of abandoned supply circuits and interconnecting cables shall be removed unless contained in a ~~metal~~ raceway. [70:645.5(F)]

Substantiation: This proposal is one of several that update Chapter 10 to coincide with recent approved changes in Article 645 of the NEC.

Committee Meeting Action: Accept in Principle

Revise text to read as follows:

10.4.5* Abandoned ~~Supply Circuits and Interconnecting~~ Cables. The accessible portion of abandoned ~~supply~~ circuits and interconnecting cables shall be removed unless contained in a ~~metal~~ raceway. [70:645.5(F)]

Committee Statement: The committee has removed the extracts from Article 645 of NFPA 70; however, the material still applies to ITE areas. In addition, the language was simplified as the requirement applies to all cables.

75-94 Log #40
(10.4.5 and A.10.4.5)

Final Action: Accept in Principle

Submitter: Stanley Kaufman, CableSafe, Inc. / Rep. The Society of the Plastics Industry

Recommendation: Renumber existing 10.4.5 to 10.4.6 and revise text. Also renumber existing A.10.4.5 to A.10.4.6 as follows:

~~10.4.5*~~ **10.4.6* Abandoned Supply Circuits and Interconnecting Cables.** The accessible portion of abandoned supply circuits and interconnecting cables shall be removed unless contained in a ~~metal~~ raceway. [70:645.5(GF)]

Substantiation: This proposal is one in a series of proposals to update the extracts from NEC Article 645 in Chapter 10 of NFPA 75.

Committee Meeting Action: Accept in Principle

See Committee Action on Proposal 75-93 (Log #53).

75-95 Log #41
(10.4.6)

Final Action: Accept in Principle

Submitter: Stanley Kaufman, CableSafe, Inc. / Rep. The Society of the Plastics Industry

Recommendation: Renumber existing 10.4.6 to 10.4.7 and revise text as follows:

~~10.4.6~~ **10.4.7 Securing in Place.** Power cables; communications cables; connecting cables; interconnecting cables; and associated boxes, connectors, plugs, and receptacles that are listed as part of, or for, information technology equipment shall not be required to be secured in place. [70:645.5(FE)]

Substantiation: This proposal is one in a series of proposals to update the extracts from NEC Article 645 in Chapter 10 of NFPA 75.

Committee Meeting Action: Accept in Principle

Revise text to read as follows:

10.4.6 Securing in Place. Power cables; communications cables; connecting cables; interconnecting cables; and associated boxes, connectors, plugs, and receptacles that are listed as part of, or for, information technology equipment shall not be required to be secured in place.

Committee Statement: The committee has removed the extracts from Article 645 of NFPA 70; however, the material still applies to ITE areas.

75-96 Log #42
(10.4.7 and A.10.4.7)

Final Action: Reject

Submitter: Stanley Kaufman, CableSafe, Inc. / Rep. The Society of the Plastics Industry

Recommendation: Renumber existing 10.4.7 to 10.4.9. Also renumber existing A.10.4.7 to A.10.4.9 as follows:

~~10.4.7~~*10.4.9* **Cables Not in Information Technology Equipment Room.** Cables extending beyond the information technology equipment room shall be subject to the applicable requirements of *NFPA 70, National Electrical Code*. [70:645.6]

Substantiation: This proposal is one in a series of proposals to update the extracts from NEC Article 645 in Chapter 10 of NFPA 75.

Committee Meeting Action: Reject

Committee Statement: The material is outside the scope of NFPA 75. See Committee Action on Proposal 75-80 (Log #101).

75-97 Log #31
(10.4.8)

Final Action: Reject

Submitter: Stanley Kaufman, CableSafe, Inc. / Rep. The Society of the Plastics Industry

Recommendation: Renumber existing 10.4.8 to 10.4.10 and insert a new 10.4.8 as follows:

10.4.8 Installed Supply Circuits and Interconnecting Cables Identified for Future Use.
(1) Supply circuits and interconnecting cables identified for future use shall be marked with a tag of sufficient durability to withstand the environment involved.
(2) Supply circuit tags and interconnecting cable tags shall have the following information:
a. Date identified for future use
b. Date of intended use
c. Information relating to the intended future use
[70:645.5(H)]

Substantiation: This proposal is one in a series of proposals to update the extracts from NEC Article 645 in Chapter 10 of NFPA 75.

Committee Meeting Action: Reject

Committee Statement: Material is outside the scope of NFPA 75.

75-98 Log #43
(10.4.8)

Final Action: Accept in Principle

Submitter: Stanley Kaufman, CableSafe, Inc. / Rep. The Society of the Plastics Industry

Recommendation: Renumber existing 10.4.8 to 10.4.10 and revise text as follows:

~~10.4.8~~ **10.4.10 Disconnecting Means.** An approved means shall be provided to disconnect power to all electronic equipment in the information technology equipment room or in designated zones within the room. There shall also be a similar approved means to disconnect the power to all dedicated HVAC systems serving the room or designated zones and shall cause all required fire/smoke dampers to close. ~~The control for these disconnecting means shall be grouped and identified and shall be readily accessible at the principal exit doors. A single means to control both the electronic equipment and HVAC systems in the room or in a zone shall be permitted. Where a pushbutton is used as a means to disconnect power, pushing the button in shall disconnect the power. Where multiple zones are created, each zone shall have an approved means to confine fire or products of combustion to within the zone.~~ *Exception: Installations qualifying under the provisions of NFPA 70, National Electrical Code, Article 685.* Disconnecting means shall be implemented by either (A) or (B).

(A) Remote Disconnect Controls.

- (1) Remote disconnect controls shall be located at approved locations readily accessible in case of fire to authorized personnel and emergency responders.
- (2) The remote disconnect controls for the control of electronic equipment power and HVAC systems shall be grouped and identified. A single means to control both shall be permitted.
- (3) Where multiple zones are created, each zone shall have an approved means to confine fire or products of combustion to within the zone.
- (4) Additional means to prevent unintentional operations of remote disconnect controls shall be permitted.

(B) Critical Operations Data Systems. Remote disconnecting controls shall not be required for critical operations data systems when all of the following are met:

- (1) An approved procedure has been established and maintained for removing power and air movement within the room or zone.
- (2) Qualified personnel are continuously available to meet emergency responders and to advise them of disconnecting methods.
- (3) A smoke-sensing fire detection system is in place.
- (4) An approved fire suppression system suitable for the application is in place

(A) Remote Disconnect Controls

- (1) Remote disconnect controls shall be located at approved locations readily accessible in case of fire to authorized personnel and emergency responders.
- (2) The remote disconnect controls for the control of electronic equipment power and HVAC systems shall be grouped and identified. A single means to control both shall be permitted.
- (3) Where multiple zones are created, each zone shall have an approved means to confine fire or products of combustion to within the zone.
- (4) Additional means to prevent unintentional operations of remote disconnect controls shall be permitted.

(B) Critical Operations Data Systems. Remote disconnecting controls shall not be required for critical operations data systems when all of the following are met:

- (1) An approved procedure has been established and maintained for removing power and air movement within the room or zone.
- (2) Qualified personnel are continuously available to meet emergency responders and to advise them of disconnecting methods.
- (3) A smoke-sensing fire detection system is in place.
- (4) An approved fire suppression system suitable for the application is in place.

[70:645.10]

Substantiation: This proposal is one in a series of proposals to update the extracts from NEC Article 645 in Chapter 10 of NFPA 75.

Committee Meeting Action: Accept in Principle

See Committee Action on Proposal 75-101 (Log #CP5).

75-99 Log #54
(10.4.8)

Final Action: Accept in Principle

Submitter: Ronald Marts, Telcordia Technologies

Recommendation: Delete text to read as follows:

~~**10.4.8 Disconnecting Means.** An approved means shall be provided to disconnect power to all electronic equipment in the information technology equipment room or in designated zones within the room. There shall also be a similar approved means to disconnect the power to all dedicated HVAC systems serving the room or designated zones and shall cause all required fire/smoke dampers to close. The control for these disconnecting means shall be grouped and identified and shall be readily accessible at the principal exit doors. A single means to control both the electronic equipment and HVAC systems in the room or in a zone shall be permitted. Where a pushbutton is used as a means to disconnect power, pushing the button in shall disconnect the power. Where multiple zones are created, each zone shall have an approved means to confine fire or products of combustion to within the zone.~~

Substantiation: This proposal is one of several that update Chapter 10 to coincide with recent approved changes in Article 645 of the NEC.

Committee Meeting Action: Accept in Principle

See Committee Action on Proposal 75-101 (Log #CP5).

75-100 Log #55
(10.4.8)

Final Action: Accept in Principle

Submitter: Ronald Marts, Telcordia Technologies

Recommendation: Add new text to read as follows:

10.4.8 Disconnecting Means. An approved means shall be provided to disconnect power to all electronic equipment in the information technology equipment room or in designated zones within the room. There shall also be a similar approved means to disconnect the power to all dedicated HVAC systems serving the room or designated zones and shall cause all required fire/smoke dampers to close. Disconnecting means shall be implemented by either (A) or (B) below.

Exception: Installations qualifying under the provisions of Article 685.

(A) Remote Disconnect Controls

(1) Remote Disconnect Controls shall be located at approved locations readily accessible in case of fire to authorized personnel and emergency responders.

(2) The Remote Disconnect Controls for the control of electronic equipment power and HVAC systems shall be grouped and identified. A single means to control both shall be permitted.

(3) Where multiple zones are created, each zone shall have an approved means to confine fire or products of combustion to within the zone.

(4) Additional means to prevent unintentional operations of remote disconnect controls shall be permitted.

(B) Remote disconnecting controls shall not be required for critical operations data systems when all of the following are met:

(1) An approved procedure has been established and maintained for removing power and air movement within the room or zone.

(2) Qualified personnel are continuously available to meet emergency responders and to advise them of disconnecting methods.

(3) A smoke-sensing fire detection system is in place.FPN - For further information see NFPA 72-2007, National Fire Alarm Code

(4) An approved fire suppression system suitable for the application is in place.

(5) Cables installed under a raised floor, other than branch circuit wiring and power cords installed in compliance with 645.5(D)(2) or (3), are in compliance with 300.22(C), 725.154(A), 770.154(A), or 800.154(A). [70:645.10]

Substantiation: This proposal is one of several that update Chapter 10 to coincide with recent approved changes in Article 645 of the NEC.

Committee Meeting Action: Accept in Principle

See Committee Action on Proposal 75-101 (Log #CP5).

75-101 Log #CP5
(10.4.8)

Final Action: Accept

Submitter: Technical Committee on Electronic Computer Systems,

Recommendation: Revise text to read as follows:

~~10.4.8 Disconnecting Means. An approved means shall be provided to disconnect power to all electronic equipment in the information technology equipment room or in designated zones within the room. There shall also be a similar approved means to disconnect the power to all dedicated HVAC systems serving the room or designated zones and shall cause all required fire/smoke dampers to close. The control for these disconnecting means shall be grouped and identified and shall be readily accessible at the principal exit doors. A single means to control both the electronic equipment and HVAC systems in the room or in a zone shall be permitted. Where a pushbutton is used as a means to disconnect power, pushing the button in shall disconnect the power. Where multiple zones are created, each zone shall have an approved means to confine fire or products of combustion to within the zone. Exception: Installations qualifying under the provisions of NFPA 70, National Electrical Code, Article 685.~~

10.4.8 Disconnecting Means.

10.4.8.1 An approved means shall be provided to disconnect power to all electronic equipment in the information technology equipment room or in designated zones within the room.

10.4.8.2 There shall be a similar approved means to disconnect the power to all dedicated HVAC systems serving the room or designated zones

10.4.8.3 Activation of an HVAC disconnecting means shall cause all required fire/smoke dampers to close.

10.4.8.4 Disconnecting means shall be implemented by one of the following methods listed in 10.4.8.4.1 through 10.4.8.4.2.

10.4.8.4.1 Remote Disconnect Controls.

10.4.8.4.1.1 Remote Disconnect Controls shall be located at approved locations readily accessible in case of fire to authorized personnel and emergency responders.

10.4.8.4.1.2 The Remote Disconnect Controls for the control of electronic equipment power and HVAC systems shall be grouped and identified.

10.4.8.4.1.3 A single means to control both shall be permitted.

10.4.8.4.1.4 Where multiple zones are created, each zone shall have an approved means to confine fire or products of combustion to within the zone.

10.4.8.4.1.5 Additional means to prevent unintentional operations of remote disconnect controls shall be permitted.

10.4.8.4.2 Alternate Disconnecting Means. Remote disconnecting controls shall not be required when all of the following are met:

(1) An approved procedure has been established and maintained for removing power and air movement within the room or zone.

(2) Qualified personnel are continuously available to meet emergency responders and to advise them of disconnecting methods.

(3) A smoke-sensing fire detection system in accordance with Chapter 8.

(4) An approved fire protection system in accordance with Chapter 8.

(5) Cables installed under a raised floor, other than branch circuit wiring and power cords installed in compliance with NFPA 70 Sections 645.5(D)(2) or (3), or are in compliance with NFPA 70 Sections 300.22(C), 725.154(A), 770.113(C) and Table 770.154(A), or 800.113(C) and Table 800.154(A), or 820.113(C) and Table 820.154(A).

Substantiation: Requirements were added to provide alternate disconnecting means to to reduce the chance of inadvertent or malicious shutdowns. In addition changes were made to comply with the MOS and the extract was removed.

Committee Meeting Action: Accept

75-102 Log #32 Final Action: Reject
(10.4.8.1)

Submitter: Stanley Kaufman, CableSafe, Inc. / Rep. The Society of the Plastics Industry
Recommendation: Renumber existing 10.4.8.1 to 10.4.10.1.
Substantiation: This proposal is one in a series of proposals to update the extracts from NEC Article 645 in Chapter 10 of NFPA 75.
Committee Meeting Action: Reject
Committee Statement: These are unnecessary editorial changes.

75-103 Log #44 Final Action: Reject
(10.4.9)

Submitter: Stanley Kaufman, CableSafe, Inc. / Rep. The Society of the Plastics Industry
Recommendation: Renumber existing 10.4.9 to 10.4.11 and revise text as follows:
~~10.4.9~~ **10.4.11 Uninterruptible Power Supplies (UPS).** Except for installations and constructions covered in ~~10.4.9(1)~~ 10.4.11(1) or ~~10.4.9(2)~~ 10.4.11(2), UPS systems installed within the information technology room, and their supply and output circuits, shall comply with ~~10.4.8~~ 10.4.10. The disconnecting means shall also disconnect the battery from its load.
(1) Installations qualifying under the provisions of *NFPA 70, National Electrical Code*, Article 685
(2) Power sources limited to 750 volt-amperes or less derived either from UPS equipment or from battery circuits integral to electronic equipment [70:645.11]
Substantiation: This proposal is one in a series of proposals to update the extracts from NEC Article 645 in Chapter 10 of NFPA 75.
Committee Meeting Action: Reject
Committee Statement: Unnecessary editorial changes.

75-104 Log #30 Final Action: Reject
(10.4.9.1 and A.10.4.9.1)

Submitter: Stanley Kaufman, CableSafe, Inc. / Rep. The Society of the Plastics Industry
Recommendation: Renumber existing 10.4.9.1 to 10.4.11.1. Also renumber existing A.10.4.9.1 to A.10.4.11.1.
Substantiation: This proposal is one in a series of proposals to update the extracts from NEC Article 645 in Chapter 10 of NFPA 75.
Committee Meeting Action: Reject
Committee Statement: Unnecessary editorial changes.

75-105 Log #56
(10.4.9(2))

Final Action: Reject

Submitter: Ronald Marts, Telcordia Technologies

Recommendation: Revise text to read as follows:

10.4.9(2), UPS systems installed within the information technology room, and their supply and output circuits, shall comply with 10.4.8. Where remote disconnecting controls are used, the disconnecting means shall also disconnect the battery from its load.

(1) Installations qualifying under the provisions of NFPA 70, National Electrical Code, Article 685

(2) Power sources limited to 750 volt-amperes or less derived either from UPS equipment or from battery circuits integral to electronic equipment [70:645.11]

10.4.9.1* Storage battery systems in the information technology equipment area shall comply with the requirements of NFPA 70, National Electrical Code, Article 480.*

Substantiation: This proposal is one of several that update Chapter 10 to coincide with recent approved changes in Article 645 of the NEC.

Committee Meeting Action: Reject

Committee Statement: The disconnecting means are needed for both remote and procedural disconnects. The proposed language would imply that the disconnect would only be required for remote controls, when in fact disconnecting power from batteries is always required.

75-106 Log #33
(10.4.10 and A.10.4.10)

Final Action: Reject

Submitter: Stanley Kaufman, CableSafe, Inc. / Rep. The Society of the Plastics Industry

Recommendation: Renumber existing 10.4.10 to 10.4.12. Also renumber existing A.10.4.10 to A.10.4.12.

Substantiation: This proposal is one in a series of proposals to update the extracts from NEC Article 645 in Chapter 10 of NFPA 75.

Committee Meeting Action: Reject

Committee Statement: Unnecessary editorial changes.

75-107 Log #34
(10.4.11)

Final Action: Reject

Submitter: Stanley Kaufman, CableSafe, Inc. / Rep. The Society of the Plastics Industry

Recommendation: Renumber existing 10.4.11 to 10.4.13.

Substantiation: This proposal is one in a series of proposals to update the extracts from NEC Article 645 in Chapter 10 of NFPA 75.

Committee Meeting Action: Reject

Committee Statement: Unnecessary editorial changes.

75-108 Log #69
(A.1.2)

Final Action: Reject

Submitter: Joshua Elvove, U.S. General Services Administration

Recommendation: Revise text to read as follows:

A.1.2 This standard does not cover installation of information technology equipment and information technology equipment areas that can be made without special construction or protection or space outside the information technology equipment area. It can, however, be used as a management guide for the installation of electrically powered mechanical information technology equipment, small tabletop or desk-type units, and information technology equipment.

Substantiation: To clarify that NFPA 75 is not meant to offer any consideration or protection to spaces located outside of or proximate to the IT equipment area.

Committee Meeting Action: Reject

Committee Statement: The proposed text may broaden the Annex material beyond its original intent.

75-109 Log #70
(A.5.1.3)

Final Action: Accept in Principle

Submitter: Joshua Elvove, U.S. General Services Administration

Recommendation: Revise text to read as follows:

A.5.1.3 Experience with fires affecting information technology equipment rooms has demonstrated that the fire often starts in areas other than the information technology equipment area and that the fire and its related products, including smoke, soot, and heat, can enter the information technology equipment room if it is not adequately separated by sealed, rated walls. Consideration should be given to raising the rating of perimeter walls to 2 hours where adjacent walls already rated 2 hours or greater.

The prudent facilities manager would do well to limit the exposure fire hazard by locating an information technology equipment facility in a fully sprinklered building and installing self-contained HVAC systems within the information technology area

Rest unchanged.

Substantiation: Though 10.1 permits HVAC systems to serve other occupancies outside the information technology area, this may not be desired. The annex note is intended to flag this.

Note this could also be inserted as new language for A.5.5.3 and tied to 5.5.3 or as new language for A.10.1 tied to 10.1.

Committee Meeting Action: Accept in Principle

Revise text to read as follows:

A.5.1.3 Experience with fires affecting information technology equipment rooms has demonstrated that the fire often starts in areas other than the information technology equipment area and that the fire and its related products, including smoke, soot, and heat, can enter the information technology equipment room if it is not adequately separated by sealed, rated walls. Consideration should be given to raising the rating of perimeter walls to 2 hours where adjacent walls are already rated 2 hours or greater.

The prudent facilities manager would do well to limit the exposure fire hazard by locating an information technology equipment facility in a fully sprinklered building and install self-contained HVAC systems within the information technology area

Committee Statement: Editorial changes.

75-110 Log #102
(A.5.1.3)

Final Action: Accept

Submitter: Stephen McCluer, APC by Schneider Electric

Recommendation: Revise text to read as follows:

Information technology equipment rooms ~~normally~~ frequently have a raised floor.

Substantiation: This statement may not be true or may not be true much longer. It is very common for ITE rooms of less than 5000 square feet to be on a slab, and many large data centers are moving away from raised floors. Within the cycle time of NFPA 75 it is likely that the majority of new ITE rooms will not be on raised floors.

Committee Meeting Action: Accept

75-111 Log #103
(A.5.2)

Final Action: Accept

Submitter: Stephen McCluer, APC by Schneider Electric

Recommendation: Revise text to read as follows:

The information technology equipment area should be located to minimize exposure to fire, water, corrosive fumes, heat, and smoke from adjoining areas and activities. Battery rooms, when constructed and ventilated in accordance with NFPA 1 Fire Code, may be adjacent to the information technology equipment room.

Substantiation: Despite the fact that battery rooms are not considered to be classified (hazardous) locations by the Fire Code, some AHJs still feel that they are a special category requiring higher than normal precautions. This proposal clarifies that situating a battery room next to an ITE room that meets the requirements of this Standard is permissible, and would not be disallowed by paragraph 5.2.

Committee Meeting Action: Accept

75-112 Log #112
(A.5.2)

Final Action: Accept in Principle

Submitter: Stephen McCluer, APC by Schneider Electric

Recommendation: Revise text to read as follows:

Many information technology equipment installations have become prime targets for sabotage and arson. The location and construction should be designed to minimize the possibility of penetration by an explosive or incendiary device. It is essential that access be restricted to only those persons absolutely necessary to the operation of the equipment. A controlled-access system of admittance through positive identification should be maintained at all times. For additional guidance, see: NFPA 730, Guide for Premises Security, and NFPA 731, Standard for the Installation of Electronic Premises Security Systems.

Substantiation: Add references to applicable NFPA standards on the topic of access security.

Committee Meeting Action: Accept in Principle

Revise text to read as follows:

5.2 Location of Information Technology Equipment Area Within the Building.

5.2.1* The information technology equipment area shall not be located above, below, or adjacent to areas or other structures where hazardous processes are located unless approved protective features are provided.

5.2.2* Access to the information technology equipment area shall be restricted to authorized persons.

A.5.2.1 Steam, water, or horizontal drain piping should not be in the space above the suspended ceiling and over information technology equipment other than for sprinkler system use.

The information technology equipment area should be located to minimize exposure to fire, water, corrosive fumes, heat, and smoke from adjoining areas and activities. Basement areas should not be considered for the location of an information technology equipment area. If information technology equipment is located in a basement, precautions should be taken to facilitate smoke venting and to prevent flooding from interior and exterior sources that can occur, including a fire on an upper floor.

A.5.2.2 Many information technology equipment installations have become prime targets for sabotage and arson. The location and construction should be designed to minimize the possibility of penetration by an explosive or incendiary device. It is essential that access be restricted to only those persons absolutely necessary to the operation of the equipment. A controlled-access system of admittance through positive identification should be maintained at all times. For additional guidance, see: NFPA 730, Guide for Premises Security, and NFPA 731, Standard for the Installation of Electronic Premises Security Systems.

Committee Statement: Section 5.2 dealt primarily with location of ITE rooms; therefore, a new section was added dealing with the potential threat of arson and the proposed text was moved to a new Annex Section.

75-113 Log #105
(A.5.4.4)

Final Action: Reject

Submitter: Stephen McCluer, APC by Schneider Electric

Recommendation: Add new text to read as follows:

A.5.4.4 Openings in raised floors for electric cables or other uses should be protected to minimize the entrance of debris or other combustibles, and to avoid air pressure drop when the space is used for movement of air.

Substantiation: When a raised floor is used to distribute cooling air, loss of air pressure under a floor (because of removed floor tiles or parasitic losses through cable openings and other means) can result in inadequate cooling to some parts of the space and potentially to overheating of electronic equipment.

Committee Meeting Action: Reject

Committee Statement: The proposed change is beyond the scope of NFPA 75.

75-114 Log #35
(A.7.1.4)

Final Action: Accept in Principle

Submitter: Stanley Kaufman, CableSafe, Inc. / Rep. The Society of the Plastics Industry

Recommendation: Revise text to read as follows:

A.7.1.4* See ~~NFPA 255, *Standard Method of Test of Surface Burning Characteristics of Building Materials.*~~ ASTM E 84, *Standard Test Method for Surface Burning Characteristics of Building Materials.* or UL 723, *Standard for Test for Surface Burning Characteristics of Building Materials.*

Substantiation: NFPA 255 has been withdrawn.

Committee Meeting Action: Accept in Principle

Revise text to read as follows:

A.7.1.4* See ~~NFPA 255, *Standard Method of Test of Surface Burning Characteristics of Building Materials.*~~ ASTM E 84, *Standard Test Method for Surface Burning Characteristics of Building Materials.* or ANSI/UL 723, *Standard for Test for Surface Burning Characteristics of Building Materials.*

Committee Statement: Editorial change.

75-115 Log #106
(A.8.1.2)

Final Action: Accept in Principle

Submitter: Stephen McCluer, APC by Schneider Electric

Recommendation: Revise text to read as follows:

A.8.1.2 In facilities that are under the supervision of an operator or other person familiar with the equipment, during all periods that equipment is energized, the normal delay between the initial outbreak of a fire and the operation of a sprinkler system will provide adequate time for operators to shut down the power by use of the emergency shutdown ~~procedures switches~~ as prescribed in ~~Section 10.4~~ NFPA 70 Article 645 . In other instances where a fire can operate sprinkler heads before discovery by personnel, a method of automatic detection should be provided to automatically de-energize the electronic equipment as quickly as possible.

Substantiation: The “disconnecting means” required in earlier versions of the NEC are not necessarily “switches,” so use of that term would be incorrect. NEC-2011 will include allowance for ITE rooms to have no disconnecting means when other criteria are met, including implementation of emergency shutdown procedures by trained personnel.

Committee Meeting Action: Accept in Principle

Revise text to read as follows:

A.8.1.2 In facilities that are under the supervision of an operator or other person familiar with the equipment, during all periods that equipment is energized, the normal delay between the initial outbreak of a fire and the operation of a sprinkler system will provide adequate time for operators to shut down the power by use of the electrical disconnecting means ~~emergency shutdown procedures switches~~ as prescribed in Section 10.4 ~~NFPA 70 Article 645~~ . In other instances where a fire can operate sprinkler heads before discovery by personnel, a method of automatic detection should be provided to automatically de-energize the electronic equipment as quickly as possible.

Committee Statement: See Committee Action on Proposal 75-101 (Log #CP5).

75-116 Log #45
(A.10.4.2)

Final Action: Accept in Principle

Submitter: Ronald Marts, Telcordia Technologies

Recommendation: Add new text to read as follows:

A.10.4.2 One method of determining cords are suitable for the purpose is found in UL 60950 *Standard for Information Technology Equipment – Safety – Part 1* [70:645.5(B)]

Substantiation: This proposal is one of several that update Chapter 10 to coincide with recent approved changes in Article 645 of the NEC.

Committee Meeting Action: Accept in Principle

Add new text to read as follows:

A.10.4.2 One method of determining cords are suitable for the purpose is found in UL 60950 *Standard for Information Technology Equipment – Safety – Part 1* .

Committee Statement: The committee has removed the extracts from Article 645 of NFPA 70; however, the material still applies to ITE areas.

75-117 Log #81
(A.10.4.4)

Final Action: Reject

Submitter: Bob Eugene, Underwriters Laboratories Inc.

Recommendation: Revise text to read as follows:

A.10.4.4 One method of defining fire resistance is by establishing that the cables do not spread fire to the top of the tray in the "Vertical Tray Flame Test" referenced in ANSI/UL 1581, Standard for Electrical Wires, Cables, and Flexible Cords. Another method of defining fire resistance is for the damage (char length) not to exceed 1.5 m (4 ft 11 in.) when performing the CSA "Vertical Flame Test — Cables in Cable Trays," as described in CSA C22.2 No. 0.3 96, Test Methods for Electrical Wires and Cables.

Substantiation: Add ANSI approval designation to ANSI/UL 1581.

Committee Meeting Action: Reject

Committee Statement: See Committee Action on Proposal 75-80 (Log #101).

75-118 Log #107
(A.10.4.9.1)

Final Action: Accept in Principle

Submitter: Stephen McCluer, APC by Schneider Electric

Recommendation: Revise text to read as follows:

A.10.4.9.1 The installation of ~~certa~~in some types of storage battery systems can create ~~concerns about a~~ hydrogen gas ~~generation~~ accumulation, ~~concern~~, a fire load, ~~concern~~, and ~~an~~ or acid spill hazard. For these installations, the design of the facilities to mitigate these hazards is appropriate.

Substantiation: Not all batteries have all of the concerns itemized here. Vented lead-acid batteries and vented nickel cadmium batteries, for example, will have all the concerns. But Lithium-ion batteries may have only one or none of the concerns. Hydrogen generation is a normal electrochemical process internal to some types of batteries and by itself is not a concern. The concern is when hydrogen escapes from the battery and accumulates into concentrations at which it becomes flammable. “Design of the facilities to mitigate these hazards” would include appropriate ventilation in accordance with applicable fire and mechanical codes.

Committee Meeting Action: Accept in Principle

Revise text to read as follows:

A.10.4.9.1 The installation of certain types of storage battery systems can create concerns about a hydrogen gas generation, which can accumulate if not ventilated properly and present a fire hazard, ~~concern~~, a fire load, ~~concern~~, and ~~an~~ Certain types of storage battery systems can also present an acid spill hazard. For these installations, the design of the facilities to mitigate these hazards is appropriate.

Committee Statement: The accumulation of hydrogen gas is an issue if not ventilated properly. Editorial changes were also made.

75-119 Log #109
(A.11.1(7) (New))

Final Action: Accept

Submitter: Stephen McCluer, APC by Schneider Electric

Recommendation: Add new text to read as follows:

(7) Coordination with the fire department or other emergency responders.

Substantiation: Add another item to the list of things to include in a written emergency fire plan. NEC-2011 Article 645 will stipulate that one of the requirements for critical ITE spaces is for designated personnel to meet the fire department when it arrives at the scene of a fire, to appraise the fire fighters of the situation, and to advise or assist them in the methods of power shutdown for the affected area or zone.

Committee Meeting Action: Accept

75-120 Log #108
(Figure A.11.1.1.2)

Final Action: Accept

Submitter: Stephen McCluer, APC by Schneider Electric

Recommendation: Revise text to read as follows:

Symbol : ~~EPO~~ DM IT and HVAC equipment emergency power off switch disconnecting means

Substantiation: The drawing uses incorrect terminology on two points:

- 1) The terms “emergency power off” or “EPO” are not used in the National Electrical Code. The correct term is “disconnecting means.”
- 2) The disconnecting means is usually not a “switch”. It is usually a control relay that activates a switch at some other location, such as on a circuit breaker panel.

The legend needs to be revised as proposed here. The drawing also needs to be revised to replace *EPO* with *DM* in all three places where it appears.

Committee Meeting Action: Accept

75-121 Log #110
(C.1.2)

Final Action: Accept in Part

Submitter: Stephen McCluer, APC by Schneider Electric

Recommendation: Revise text to read as follows:

C.1.2 Information technology equipment has become the accepted tool to research, store, and exchange information, to process large amounts of statistical, problematical, or experimental information, and to print out or display ~~answers or~~ information in very short periods of time. Reliance is placed on the equipment to perform the repetitive, the experimental, and, in some cases, even the whole programming operation for business, industry, government, and research groups. In some cases building management, manufacturing processes, and life safety functions may be integrated into the information technology equipment system.

Substantiation: The existing explanation of what IT equipment is and does sounds somewhat archaic. The continued operation of the Information Technology system can be critical. IT is no longer just batch processing of accounting or statistical data. It is the almost instantaneous exchange of information in almost any form, including text, graphic, audio, and video. It can be integral to a manufacturing process and/or to the total environment of the facility. There is barely any function that exists today in any activity that is not in some way connected to the IT equipment. This can include life safety functions. Huge amounts of information are stored, and at any given moment vast amounts of information are being exchanged.

Committee Meeting Action: Accept in Part

Revise text to read as follows:

C.1.2 Information technology equipment has become the accepted tool to research, store, and exchange information, to process large amounts of statistical, problematical, or experimental information, and to print out or display ~~answers or~~ information in very short periods of time. Reliance is placed on the equipment to perform the repetitive, the experimental, and, in some cases, even the whole programming operation for business, industry, government, and research groups.

Committee Statement: The last sentence proposed by the submitter could be misleading.

75-122 Log #104
(D.1.2)

Final Action: Reject

Submitter: Stephen McCluer, APC by Schneider Electric

Recommendation: Add new text to read as follows:

D.1.2 Chemical Agents. Chemical agents include gases that have been found to be effective in suppressing fires by chemical means or, in some cases, by a combination of chemical reaction and cooling. See NFPA 2001, *Standard on Clean Agent Fire Extinguishing Systems*, for specific agent and system design guidance.

While these systems have proven to be effective and relatively trouble-free when installed as approved, it is prudent to consider the following factors in integrating such systems into a facility:

- (1) Effectiveness of agent on types of fires expected
- (2) Energized versus de-energized equipment
- (3) Possible effect of "neat" agent discharges on the equipment and/or space that is being protected
- (4) Dealing with products of combustion and/or products of decomposition created in a fire and fire suppression
- (5) Potential hazard to personnel
- (6) Long-term availability of agent and/or system components
- (7) Compatibility of system operation with facility operation
- (8) Selection of detection system
- (9) Effects on the environment and possible restrictions on its use
- (10) Possible effects of "thermal shock "

Substantiation: The history of Halon, which was banned because of its effect on the ozone layer, is well known and other chemical agents may have similar concerns. The advantages of gaseous agents must be weighed against possible environmental damage and associated repercussions.

Thermal shock can occur when cold compressed gas meets hot electronic equipment. Better alternatives may not be possible, but the potential for equipment damage must at least be understood.

Committee Meeting Action: Reject

Committee Statement: Environmental effects and possible restrictions on use of chemical agents are addressed by various regulatory agencies and are beyond the scope of this standard. Possible effects of thermal shock in ITE areas are not currently documented.

75-123 Log #36
(Annex E)

Final Action: Accept

Submitter: Stanley Kaufman, CableSafe, Inc. / Rep. The Society of the Plastics Industry

Recommendation: Delete text to read as follows:

~~NFPA 255, *Standard Method of Test of Surface Burning Characteristics of Building Materials*, 2006 edition.~~

Substantiation: NFPA 255 has been withdrawn.

Committee Meeting Action: Accept

75-124 Log #74
(E.1.2.3)

Final Action: Accept

Submitter: Bob Eugene, Underwriters Laboratories Inc.

Recommendation: Revise text to read as follows:

E.1.2.3 UL Publications. Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, IL 60062-2096.

ANSI/UL 1581, Standard for Electrical Wires, Cables, and Flexible Cords, 2001 including revisions through May 6, 2009.
~~2009 October 5, 2009.~~

Substantiation: Add ANSI approval designation to ANSI/UL 1581. Update revision date.

Committee Meeting Action: Accept