

DO YOU WANT TO BE REQUIRED BY CODE TO INSTALL PREACTION SPRINKLER RISERS FOR EVERY SPRINKLERED ELEVATOR MACHINE ROOM?

UNDER PROPOSED CHANGES NEEDING YOUR IMMEDIATE ATTENTION THIS WILL BE REQUIRED.

PLEASE REVIEW THIS IF YOU HAVE CONCERNS FOR OR AGAINST THIS CHANGE.

The text on the following three pages comes from the NFPA 72 Report on Proposals. Because these changes were buried within over 600 other proposed changes to NFPA 72 not many people are aware of these changes. They have a significant impact.

I would encourage that this information be forwarded to all engineers, contractors, architects, owners, inspectors, and others that might be interested. The purpose of this is not to tell you to be for or against the change. Just to make you aware of the change so that you can decide if there has been justification for such a change. Have we really had problems to go to this extreme?

Please review the proposed changes to NFPA 72. These changes are being made to coordinate with proposed changes to ASME A17.1 of which is still under comment until August 2006. Thus, if you have issues with the following you also need to address them to ASME.

The time line to appeal this change to NFPA 72 is JUNE 28, 2006. Otherwise these changes will be in the 2007 edition. There is an option for a later TIA, but it would be better to appeal it before it gets printed as very few people ever see the TIA's. Appeals must be submitted in writing to NFPA. Criteria for this process is attached to end of this pdf file under Section 1.6.

If you have never done the calculations already required by the code regarding Response Time Index (RTI), here is some information. If heat detectors are used, a quick response sprinkler will mathematically activate before a standard electronic heat detector. The equations for this can be found in NFPA 72 handbook. A handout on this is included as well. On many occasions we find quick response sprinklers installed in elevator pits and in machine rooms. After all, NFPA 13 requires these in new buildings and most contractors just use the same sprinklers that they would otherwise use throughout the office space which would be quick response. Therefore, if not addressed the sprinkler will activate first providing cooling which will result in the heat detector never going off. In addition, installing heat detectors and then smoke detectors in elevator shafts creates another problem. These devices will either not be serviced, or the alarm technician will likely access the shaft and either fail to properly lock-out-tag-out the elevator per OSHA, or will take control of the elevator when they are not qualified for such. Elevators will kill and these devices are not even justified to be there. You decide if it is worth it! This is why the Department of Defense guidelines for using flow switches with no delay and using check valves to avoid accidental trips from surges appears to be a good alternative. The current ASME A17.1 provides for the elevator power to be shunted prior to or upon the discharge of water. Have we had documented problems that the current language is not working?

So the fundamental question is do we need to take up more space, complicate elevator protection more, and spend a lot of extra money in installation and maintenance?

Please review and decide for yourself. If you want to change this before it gets into NFPA 72 you must act fast. Appeal to NFPA before JUNE 28th. The box below includes information for appeal.

The proposed change to ASME is included in this handout. I would suggest providing public comment to ASME by August 22, 2006.

To File Appeal: You must submit in writing to the Secretary of the Standards Council (Casey Grant). Include: Name, affiliation, address, statement of section appealing (i.e. ROP 72-313), argument with grounds, and statement of relief requested. Send: Email to Mary Maynard maynard@nfpa.org or it can be faxed to (617) 770-3500.

A sample that can be used and faxed is included at end.

72-313 Log #320 SIG-PRO **Final Action: Accept in Principle**
(6.15.3, 6.15.3.2, 6.15.3.3, 6.15.3.4 and 6.15.4)

SUBMITTER: Geraldine Burdeshaw, American Society of Mechanical Engineers

RECOMMENDATION: Revise Sections 6.15.3.1, 6.15.3.2, 6.15.3.3, 6.15.3.4, 6.15.4 and associated annex material to read as follows:

6.15.3.1* System-type smoke detectors or other automatic fire detection as permitted by 6.15.3.7 located in elevator lobbies, elevator hoistways, and elevator machine rooms including machine space, control room, and control space used to initiate fire fighters' service recall, shall be connected to the building fire alarm system.

A.6.15.3.1 The requirement for the initiation of Phase I Emergency Recall Operation by specific initiating devices is included in Section 2.27.3.2.1 of ASME A17.1, Safety Code For Elevators and Escalators. This includes heat detectors used to initiate shut down of elevator power in accordance with 6.15.4.

6.15.3.3 Unless otherwise required by the authority having jurisdiction, only the elevator lobby, elevator hoistway, and the elevator machine room smoke detectors or other automatic fire detection as permitted by 6.15.3.7 and heat detectors used to initiate shut down of elevator power in accordance with 6.15.4 shall be used to recall elevators for fire fighters' service.

6.15.3.4 Each elevator lobby, elevator hoistway, and elevator machine room smoke detectors or other automatic fire detection as permitted by 6.15.3.7 and heat detectors used to initiate shut down of elevator power in accordance with 6.15.4 shall be capable of initiating elevator recall when all other devices on the same initiating device circuit have been manually or automatically placed in the alarm condition.

6.15.4 Elevator Shutdown.

6.15.4.1* Where Heat detectors are used to initiate shut down of elevator power prior to sprinkler operations, the detector shall have both a lower temperature rating and a higher sensitivity as compared to the sprinkler.

A.6.15.4.1 ASME A17.1, Safety Code For Elevators and Escalators, Section 2.8.2.3.2 requires elevator power shutdown to be initiated by a heat detector. When determining desired performance, consideration should be given to the temperature and time lag characteristics of both the sprinkler head and the heat detector to ensure as much as possible that the heat detector will operate prior to the sprinkler head, because a lower temperature rating alone might not provide earlier response. The listed spacing rating of the heat detector should be 7.6 m (25 ft) or greater.

6.15.4.2 If Heat detectors are used to initiate shut down of elevator power prior to sprinkler operations, they shall be placed within 610 mm (2 ft) of each sprinkler head and be installed in accordance with the requirements of Chapter 5. Alternatively, engineering methods, such as specified in Annex B, shall be permitted to be used to select and place heat detectors to ensure response prior to any sprinkler head operation under a variety of fire growth rate scenarios.

6.15.4.3 *If Pressure or waterflow switches shall not be are used to initiate shut down of elevator power, immediately upon or prior to the discharge of water from sprinklers, the use of devices with time delay switches or timedelay capability shall not be permitted.

A.6.15.4.3 Care should be taken to ensure that elevator power cannot be interrupted due to water pressure surges in the sprinkler system. The intent of the Code is to ensure that the switch and the system as a whole do not have the capability of introducing a time delay into the sequence. The use of a switch with a time delay mechanism set to zero does not meet the intent of the Code, because it is possible to introduce a time delay after the system has been accepted. This might occur in response to unwanted alarms caused by surges or water movement, rather than addressing the underlying cause of the surges or water movement (often due to air in the piping). Permanently disabling the delay in accordance with the manufacturer's printed instructions should be considered acceptable. Systems that have software that can introduce a delay in the sequence should be programmed to require a security password to make such a change.

6.15.4.4* Control circuits to shut down elevator power shall be monitored for presence of operating voltage. Loss of voltage to the control circuit for the disconnecting means shall cause a supervisory signal to be indicated at the control unit and required remote annunciators.

A.6.15.4.4 Upon activation of the heat detector used for elevator power shutdown, there should be a delay in the activation of the power shunt trip. This delay should be the time that it takes the elevator cab to travel from the top of the hoistway to the lowest recall level.

Figure A.6.15.4.4 illustrates one method of monitoring elevator shunt trip control power for integrity.

6.15.4.5 Heat detectors used to initiate shut down of elevator power The initiating devices described in 6.15.4.2 and 6.15.4.3 shall be monitored for integrity by the control unit required in 6.15.3.1 and 6.15.3.2

6.15.4.6* Upon activation of the heat detector used to initiate shut down of elevator power, there shall be a delay in the activation of the power shunt trip. This delay shall be sufficient to allow Phase I Emergency Recall Operation in accordance with ASME A17.1, Safety Code for Elevators and Escalators.

A.6.15.4.6 ASME A17.1, Safety Code For Elevators and Escalators, Section 2.8.2.3.2 requires the removal of power and the release of water to be delayed to allow completion of Phase I Emergency Recall Operations.

SUBSTANTIATION: Changes have been proposed for ASME A17.1 Safety Code for Elevators and Escalators that will require the use of a heat detector to initiate shutdown of elevator power. The actuation of the heat detector will immediately initiate elevator Phase I Emergency Recall and will initiate shutdown of elevator power by introducing a delay period long enough to allow for the completion of Phase I Emergency Recall before power is removed. The delay period will be programmed as function of the fire alarm system, independent of the elevator control system. The changes proposed for ASME A17.1 are intended for protection against entrapment when sprinklers are provided in elevator machine rooms and hoistways. The changes proposed for NFPA 72 are made for correlation.

COMMITTEE MEETING ACTION: Accept in Principle

Accept the recommendation with the following revisions:

6.15.4.3 Remove the word "are" in the first sentence.

6.15.4.6 Upon activation of the heat detector used to initiate shut down of elevator power, there shall be a delay in the activation of the power shunt trip and release of water from sprinklers. This delay shall be sufficient to allow Phase I Emergency Recall Operation in accordance with ASME A17.1, Safety Code for Elevators and Escalators.

COMMITTEE STATEMENT: The committee has revised the recommended text for the following reasons:

6.15.4.3 Editorial

6.15.4.6 Clarification of the required time delay for water release and to correlate with the ANSI A17.1 revisions.

NUMBER ELIGIBLE TO VOTE: 29

BALLOT RESULTS: Affirmative: 25 Negative: 2

BALLOT NOT RETURNED: 2 LEBER, MACGREGOR

EXPLANATION OF NEGATIVE:

BISKER: I do not agree that the submitter's proposal, which has also been proposed to the ANSI A.17.1 Committee, adequately addresses the safety of elevator cab occupants in a scenario where water suppression where water suppression is required within an elevator machine room. In effect, this proposal says that elevator functions in a machine room fire will remain intact for a sufficient period of time to allow the cab to be recalled via Phase I Emergency Recall Operation in all situations. A simpler solution would be to recall the elevator to the nearest floor when a fire is detected in an elevator machine room and then shut off power to the elevator. Furthermore, the notion that water discharge in an elevator machine room fire is so undesirable that a building owner should spend excessive amounts of capital to delay its occurrence over other consequential outcomes, such as potential for elevator cab freefall or entrapment is neither well documented nor universal to both cable and hydraulic elevators. I suggest that submitter reevaluate the need to delay sprinkler actuation to the minimum needed to (1) stop the elevator at the nearest floor and (2) open the doors so that the cab occupants can exit the cab safely. If it takes an additional control or recall feature, compared to primary and secondary recall functions, then I suppose that a safer outcome would be the result.

LESZCZAK: If we are going to allow the heat detectors to delay the operation of the power shunt trip and release of the sprinkler system as proposed by the committee's statement in 6.15.4.6, additional guidance is needed. What constitutes a "sufficient" delay to allow Phase I recall? Does this now require confirmation from the elevator controller that Phase I is complete? If a timed approach is adequate, then the heat detector should not be mandated to delay the sprinkler head release, as there is no guarantee that the elevator has completed phase I recall.

COMMENT ON AFFIRMATIVE

STRINGFIELD: Modify as follows:

1. In 6.15.4.3 " Pressure or wWaterflow switches shall...". The type of switch is irrelevant.

2. In 6.15.4.6, (it) will be interesting who calculates the delay time and which AHJ approves the calculation.

If ASME 2.8.3.2 is accepted as indicated here under proposed section A.6.15.4.6 then every sprinklered elevator machine room will be required to have a pre-action sprinkler system installed for the elevator machine room to DELAY the discharge of water until the heat detector has had the opportunity to recall the elevator.

Yes, the changes will require that the heat detector also recall the elevator in addition to the smoke detectors

How often do we have fires in machine rooms? How often do we have fires in machine rooms while we are also trying to use the elevators for fire fighter emergency use? How is this justified?

Changes also prohibit the use of flow switches for shunt trip as currently allowed. If flow switches are installed as called out by the military in UFC 3-600-01 incorporating check valves you should not have problems of false trips. As proposed this will be in direct conflict with UFC criteria, overly complicate the system, provide significant expense and maintenance issues, with no justified benefit. Not to mention that you will have to have another room for the pre action system since you do not want the pre action system to be installed within the machine room you are trying to keep water out of.

All this when our main water problem is still coming from outside the shaft such as water flowing down the corridor to the shaft.

Other code proposals have been blocked out so they do not confuse the ones discussed on this handout. All proposals can be viewed at the NFPA web site www.nfpa.org by going under the Codes and Standards tab.



72-319 Log #319 SIG-PRO **Final Action: Accept**
(6.15.3.7)

SUBMITTER: Geraldine Burdeshaw, American Society of Mechanical Engineers

RECOMMENDATION: Revise 6.15.3.7 and associated annex material to read as follows:

6.15.3.7 If ambient conditions prohibit installation of automatic smoke detection, other automatic fire detection shall be permitted. Pressure or waterflow switches shall not be used.

SUBSTANTIATION: The use of waterflow actuated initiating devices raises concerns of reliability because of the potential for false actuations due to surges in system water pressure. In some water applications, time delays are often used to prevent transient pressure changes from actuating flow switches. Because of potential time delays that may be used and the reliability concerns, the use of waterflow actuated initiating devices should be prohibited.

COMMITTEE MEETING ACTION: Accept

NUMBER ELIGIBLE TO VOTE: 29

BALLOT RESULTS: Affirmative: 27

BALLOT NOT RETURNED: 2 LEBER, MACGREGOR

The code currently prohibits the use of time delays if a flow switch is used. Therefore, this change has not been justified by any technical background. The submitter should provide evidence that the current code is not safe.

72-326 Log #318 SIG-PRO
(6.15.3.10, and A.6.15.3.10)

Final Action: Accept

SUBMITTER: Geraldine Burdeshaw, American Society of Mechanical Engineers

RECOMMENDATION: Revise Section 6.15.3.10 and associated annex material to read as follows:

6.15.3.10* For each group of elevators within a building, a minimum of three separate elevator control circuits shall be terminated at the designated elevator controller within the group's elevator machine room(s). The operation of the elevators shall be in accordance with Section 2.27 of ANSI/ASME A17.1, Safety Code for Elevators and Escalators. The smoke detectors or other automatic fire detection as permitted by 6.15.3.7 shall actuate the elevator control circuits as follows:

— (1) The smoke detector or other automatic fire detection as permitted by 6.15.3.7 located in the designated elevator recall lobby shall actuate the first elevator control circuit. In addition, if the elevator is equipped with front and rear doors, or if the elevator machine room is located at the designated level, the required smoke detectors shall actuate the first elevator control circuit. The smoke detectors or other automatic fire detection as permitted by 6.15.3.7 in both lobbies at the designated level shall actuate the first elevator control circuit.

— (2) The smoke detectors or other automatic fire detection as permitted by 6.15.3.7 in the remaining elevator lobbies shall actuate the second elevator control circuit.

— (3) The smoke detectors or other automatic fire detection as permitted by 6.15.3.7 in elevator hoistways and the elevator machine rooms(s) shall actuate a third elevator control circuit.

6.15.3.10* Separate outputs from the fire alarm systems to the elevator controller(s) shall be provided to implement elevator Phase I Emergency Recall Operation in accordance with Section 2.27 of ASME A17.1, Safety Code for Elevators and Escalators are required in 6.15.3.10(A) through 6.15.3.10(E):

(A) Designated Level Recall. For each elevator or group of elevators, an output shall be provided to signal elevator recall to the designated level in response to the following:

(1) Activation of smoke detectors, or other automatic fire detection as permitted by 6.15.3.7, located at any elevator lobby served by the elevator(s) other than the lobby at the designated level

(2) Activation of smoke detectors, or other automatic fire detection as permitted by 6.15.3.7, located at any elevator machine room serving the elevator(s) except where the machine room is located at the designated level

(3) Activation of smoke detectors, or other automatic fire detection as permitted by 6.15.3.7, located in the elevator hoistway serving the elevator when sprinklers are located in the hoistway unless otherwise specified in 6.15.3.10(B)(4)

(4) Activation of heat detectors located in the elevator machine room or hoistway serving the elevator(s) that are used to initiate shut down of elevator power prior to sprinkler operations unless otherwise specified in 6.15.3.10(B)(3) or 6.15.3.10(B)(4)

(B) Alternate Level Recall. For each elevator or group of elevators, an output shall be provided to signal elevator recall to the alternate level in response to the following:

(1) Activation of smoke detectors, or the automatic fire detection as permitted by 6.15.3.7, located at the designated level lobby served by the elevator(s)

(2) Activation of smoke detectors, or other automatic fire detection as permitted by 6.15.3.7, located in the elevator machine room serving the elevator(s) if the machine room is located at the designated level

(3) Activation of heat detectors located in the elevator machine room serving the elevator(s) that are used to initiate shut down of elevator power prior to sprinkler operation if the machine room is located at the designated level

(4)* Activation of the initiating devices identified in 6.15.3.10(A)(3) and 6.15.3.10(A)(4) if they are installed at or below the lowest level of recall in the elevator hoistway and the alternate level is located above the designated level

(C)* Visual Warning. For each elevator or group of elevators, an output(s) shall be provided for the elevator visual warning signal in response to the following:

(1) Activation of the elevator machine room initiating devices identified in 6.15.3.10(A)(2) or 6.15.3.10(B)(2)

(2) Activation of the elevator hoistway initiating devices identified in 6.15.3.10(A)(3) or 6.15.3.10(B)(4)

(D) Power Shut down Warning. For each elevator or group of elevators, an output(s) shall be provided for the elevator visual warning signal (imminent shut down of elevator power) in response to the activation of elevator machine room heat detectors identified in 6.15.3.10(A)(4) or 6.15.3.10(B)(3).

A.6.15.3.10 It is recommended that the installation be in accordance with Figure A.6.15.3.10(a) and Figure A.6.15.3.10(b). Figure A.6.15.3.10(a) should be used where the elevator is installed at the same time as the building fire alarm system. Figure A.6.15.3.10(b) should be used where the elevator is installed after the building fire alarm system.

A.6.15.3.10(B)(4) Where initiating devices are located in the elevator hoistway at or below the lowest level of recall ASME A17.1, Safety Code for Elevators and Escalators, requires that the elevator be sent to the upper recall level. Note that the lowest level of recall could be the "designated level"

or "alternate level" as determined by the local authority for the particular installation. Also note that the elevator hoistway, as defined in ASME A.17.1, includes the elevator pit.

A.6.15.3.10(C) It will be necessary sometimes to provide more than three (3) signals to the elevator controller. ASME A17.1, Safety Code for Elevators and Escalators, requires differentiation between separate hoistways that share a common elevator machine room. For instance, in a situation where there is more than one single hoistway sharing the same elevator machine room, a separate signal must be derived from each hoistway. Under this scenario, the minimum number of elevator control circuits required is four (4) as follows:

(1) Alternate floor recall

(2) Designated floor recall

(3) Elevator machine room/hoistway #1 – flash hat symbol in associated elevator car

(4) Elevator machine room/hoistway #2 – flash hat symbol in associated elevator car

SUBSTANTIATION: The requirements of Section 6.15.3.10 are intended to specify the outputs needed from the fire alarm system to the elevator control system to provide the recall and warning functions required by ASME A17.1, Safety Code for Elevators and Escalators. However, as currently specified, Section 6.15.3.10 does not correlate fully with the requirements of ASME 17.1. The changes proposed provide the needed correlation and include revisions needed to correlate with new changes proposed for ASME 17.1. These new changes involve elevator recall in response to activation of heat detectors used to initiate shutdown of elevator power after a delay period long enough to allow recall. (Refer to changes also proposed for Section 6.15.4) the revised and additional annex material correlates with the changes made in the mandatory rules and provides additional insight as to the requirements in ASME 17.1.

COMMITTEE MEETING ACTION: Accept

NUMBER ELIGIBLE TO VOTE: 29

BALLOT RESULTS: Affirmative: 26 Negative: 1

BALLOT NOT RETURNED: 2 LEBER, MACGREGOR

EXPLANATION OF NEGATIVE:

BISKER: See my Explanation of Negative Vote on 72-313

I did not notice any direct conflicts if this language was put in as it only clarifies existing criteria. Please review in case I missed something that could cause concerns.

This is the NFPA appeal criteria taken from the NFPA Regulations Governing Committee Projects

plement, in whole or in part, at any time or times at its discretion.

1.6 Appeals to the Council.

1.6.1 General. Anyone can appeal to the Council concerning procedural or substantive matters related to the development, content, or issuance of any Document of the Association or on matters within the purview of the authority of the Council, as established by the Bylaws and as determined by the Board of Directors. Such appeals shall be in written form and filed with the Secretary of the Standards Council.

1.6.2 Time for Filing an Appeal.

(a) **Issuance of Documents.** An appeal related to the issuance of a document includes any appeal which could result in the issuance or return of a Document or which could affect the text of a Document. Except as provided in (b) and (c), below, an appeal related to the issuance of a Document shall be filed no later than 20 days after the Association Technical Meeting at which Association action on the issuance of the Document was recommended. Where a document goes directly to the Standards Council for issuance pursuant to 4.5.7, an appeal related to the issuance of the Document shall be filed no later than 30 days prior to the Council meeting. Unless clear and substantial reasons exist to consider such an appeal, the Standards Council may summarily dismiss the appeal on account of the procedural failure to notice and make an appropriate motion at the Association Technical Meeting.

(b) **Association Technical Meeting Failed Amendments.** If an amendment recommended at an Association Technical Meeting fails to receive the approval of the TC or TCC pursuant to 4.6.1, it will be automatically docketed as an appeal on the agenda of the Standards Council, and any party may advocate their position either in writing or in person before the Council. Parties wishing to appear in person before the Council shall notify the Council Secretary no later than 48 hours prior to the Council meeting. Although not required, parties wishing to advocate a position are encouraged, to the extent practicable, to file written submissions in general conformance with 1.6.3 and 1.6.4 in advance of the meeting at which action will be considered. When an automatically docketed appeal has not been pursued by any party, the Council need not consider the matter as an appeal.

(c) **Tentative Interim Amendments.** A proposed Tentative Interim Amendment, which has been submitted for processing pursuant to 5.1, will be automatically docketed as an appeal on the agenda of the Standards Council, and any party may advocate their position either in writing or in person before the Council. Parties wishing to appear in person before the Council shall notify the Council Secretary no later than 48 hours prior to the Council meeting. Although not required, parties wishing to advocate a position are encouraged, to the extent practicable, to file written submissions in general conformance with 1.6.3 and 1.6.4 in advance of the meeting at which action will be considered. When an automatically docketed appeal has not been pursued by any party, the Council need not consider the matter as an appeal.

(d) **Other Appeals.** As to other actions not addressed in 1.6.1(a) – (c), an Appeal shall be filed within a reasonable time of the challenged action.

1.6.3 Filing and Contents of an Appeal.

(a) To the extent practicable, the appeal should contain, in separately denominated sections, the following:

- (1) Name, affiliation, and address of the appellant
- (2) Statement identifying the particular action to which the appeal relates
- (3) Argument setting forth the grounds for the appeal
- (4) Statement of the precise relief requested

(b) Any part of the record related to the codes and standards development process that is referenced or discussed in the appeal should be clearly cited in the appeal using available markings such as the title, author, date, and page of the record. To avoid unnecessary duplication, parties are encouraged not to reproduce portions of the current Technical Committee Reports or Association Technical Meeting transcripts as attachments to their appeals.

(c) The Council Secretary may refuse to accept for filing any appeal that does not substantially conform to the requirements of this section. Within his or her discretion, however, the Secretary may accept a nonconforming appeal for filing, and in addition, may require a substituted or supplemental filing.

1.6.4 Other Submissions Relating to an Appeal. Any interested party may submit responses or other written submissions relating to any appeal filed with the Council. To the extent practicable, responses should contain, in separately denominated sections, the following:

- (a) Name, affiliation, and address of the submitter
- (b) Statement identifying the appeal to which the submission relates and stating whether the submitter supports or opposes the appeal
- (c) Argument setting forth the grounds for opposing or supporting the appeal
- (d) Statement of recommended Council action

Parties are encouraged, to the extent practicable, to file written submissions in advance of the meeting at which action will be considered.

1.6.5 Appeals and Hearings. The Standards Council shall consider Appeals based upon written submissions and shall also afford the opportunity for a hearing on any appeal, unless the Chair, after consultation with the Council Secretary, has determined that a hearing is either impractical or unnecessary. A decision by the Chair not to hold a hearing may be overruled by a majority vote of the Council. If a hearing is held, the Procedures for Hearings shall be followed.

1.6.6 Appeals Subcommittees. The Standards Council may, in its discretion, refer Appeals to subcommittees of the Standards Council for investigation and may seek the advice of one or more persons prior to resolution of the Appeal by the entire Standards Council.

1.7 Petitions to the Board of Directors.

1.7.1 General. The Standards Council has been delegated the responsibility for the administration of the codes and standards development process and the issuance of Documents. However, where extraordinary circumstances requiring the intervention of the Board of Directors exist, the Board of Directors may take any action necessary to fulfill its obligations to preserve the integrity of the standards development process and to protect the interests of the Association. Anyone seeking such intervention of the Board of Directors may petition the Board of Directors concerning Council action on any matters. Such petitions shall be filed and processed in accordance with the Regulations Governing Petitions to the Board of Directors from Decisions of the Standards Council.

1.7.2 Notice of Intent to File the Petition. Anyone wishing to petition the Board of Directors concerning a Standards Council action related to the issuance of a document, shall file a Notice of Intent to File a Petition within 15 days following the Standards Council action. A Standards Council action related to the issuance of a document includes any action of the Council which issues or returns a Document or which affects the text of a Document. Petitions concerning other Standards Council actions shall be filed within a reasonable period of time.

1.7.3 Effect of Filing. The filing of a Petition will not serve to stay the effective date of a Document or a Tentative Interim Amendment unless the President of the Association or the Board acts, pursuant to 4.7.2 or 5.6, to delay the effective date. Any Petition pending at the time a Document or Tentative Interim Amendment becomes effec-

EVALUATING RESPONSE TIME INDEX (RTI) FOR ELEVATORS AND OTHER APPLICATIONS

When a heat detector is installed with a sprinkler to initiate shunt-trip you must do more than look at just the temperature. Quick-response sprinklers and shunt-trip heat detectors may be in violation of code and pose a safety risk to elevator passengers.

NFPA 72, under "Elevator Shutdown", requires that:

"Where heat detectors are used to shut down elevator power prior to sprinkler operation, the detector shall have both a lower temperature rating and a higher sensitivity [often characterized by a lower response time index (RTI)] as compared to the sprinkler".

RTI Explained – One measure of thermal sensitivity is the response time index (RTI) as measured under standardized test conditions. (1) Sprinklers defined as fast or quick response have a thermal element with an RTI of 50 (meters-seconds)^{1/2} or less. (2) Sprinklers defined as standard response have a thermal element with an RTI of 80 (meters-seconds)^{1/2} or more. The RTI of a sprinkler is usually determined by plunging a sprinkler into a heated laminar airflow within a test oven. The RTI is calculated using the following:

1. The operating time of the sprinkler
2. The operating temperature of the sprinkler's heat-responsive element (as determined in a bath test)
3. The air temperature of the test oven
4. The air velocity of the test oven
5. The sprinkler's conductivity {c} factor, which is the measure of conductance between the sprinkler's heat-responsive element and the sprinkler oven mount

An Example of a sprinkler's RTI: (provided by Tyco)

- ◆ A 3mm bulb = RTI of 35 (quick response)
- ◆ A 5mm bulb = RTI of 95 (standard response)
- ◆ A 11mm bulb = RTI of 155
- ◆ FR-1 (Fast Response Link) = RTI of 26
- ◆ ESFR-1 or 25 (Fast Response Link) = RTI of 26

Using NFPA 72 Annex B to establish the RTI of the heat detector we have the following:

Formula $RTI = \{tc\} (1.5m/sec)^{1/2}$ {where tc is a time constant taken from Table B.3.2.5}.

135 Deg. detector with a listed coverage area of 50 feet. This has a Time Constant {tc} of 44

$$RTI = 44 (1.5m/sec)^{1/2} = \underline{\underline{54 (meters-second)^{1/2}}}$$

135 Deg. detector with a listed coverage area of 40 feet. This has a Time Constant {tc} of 57.

$$RTI = 57 (1.5m/sec)^{1/2} = \underline{\underline{69 (meters-second)^{1/2}}}$$

128 Deg. Detector with a listed coverage area of 50 feet. This has a Time Constant {tc} of 59.

$$RTI = 59 (1.5m/sec)^{1/2} = \underline{\underline{72 (meters-second)^{1/2}}}$$

What does this mean?

Not only must the sprinkler have a higher temperature rating, but it CANNOT have a quick response element. Lowering the sensitivity of a heat detector to have an RTI of less than 35 is not feasible if even achievable. The sprinkler head must be properly selected.