



National Fire Protection Association

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High Rise Building Safety Advisory Committee

MEMORANDUM

TO: High Rise Building Safety Advisory Committee (HRB-SAC)
FROM: Kristin Bigda, Staff Liaison
DATE: April 10, 2013
SUBJ: Ballot on Draft Public Comments

Attached you will find the ballot and ballot materials on the draft public comments prepared at the April 2-3, 2013 meeting.

The ballot is for formally voting on whether or not you concur with the comments. If you do not concur, or you abstain you **must** provide your reasons for doing so. As with previous ballots you can vote and comment on individual items if you choose.

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

Please complete and return your ballot as soon as possible, but not later than **Tuesday, April 23, 2013**. Your cooperation in meeting this deadline is appreciated. You may fax your ballot to (617) 984-7110 or email it to lmackay@nfpa.org.

Enclosures: Ballot Form
Comments

cc: R. Solomon

High Rise Building Safety Advisory Committee (HRB-SAC)

With respect to the draft public comments prepared by HRB-SAC at the April 2-3, 2013 meeting, I:

Agree

Disagree *

Abstain *

Provide reasons if you Disagree or Abstain.

Return by Tuesday, April 23, 2013.

To: Linda Mackay

Fax: (617) 984-7110

Email: lmackay@nfpa.org

Signature:

Name – Please Print:

Date:

HRB-SAC Public Comment #1

Recommendation:

11.8.8

11.8.8.1* General.

11.8.8.1.1 For high rise buildings having an occupant load of 4,000 or more persons, real-time remote monitoring of exit stair usage shall be provided in accordance with 11.8.8.2 through 11.8.8.4 and shall be displayed at the emergency command center.

11.8.8.1.2 Where the monitoring system is integrated with a security system, the security system shall be in accordance with NFPA 731, *Standard for the Installation of Electronic Premises Security Systems*.

11.8.8.1.3 Where the monitoring system includes video cameras also used for video image smoke detection, the portions of the system used for such detection shall be in accordance with NFPA 72, *National Fire Alarm and Signaling Code*.

11.8.8.2 Approved video monitoring equipment shall be provided at the exit stairs immediately adjacent to exit stairway discharge doors to capture discharge from, entry to, and passage through the discharge floor landing.

11.8.8.3 Approved video monitoring equipment shall be provided for exit stairs above the level of exit discharge, at building height intervals not exceeding 5 stories, so that descent and ascent flows on the stairways, at the floor entry landings, can be remotely monitored.

11.8.8.4 Approved video monitoring equipment shall be provided, at locations stipulated by the AHJ, for exit stairs below the level of exit discharge where levels are normally occupied by the public.

Substantiation:

The proposed text of 11.8.8 provides additions to the current provision of the code that have the potential to help the fire service, other fire safety personnel and building management to effectively monitor and manage egress during an emergency in a building. The use of equipment that would provide real time data to building's emergency command centers could lead to better direction of building evacuations and provide the ability for the command center to see conditions throughout the building. This would allow building officials and the fire service to observe if an egress route has become untenable and where they can most effectively redistribute occupants in the building, thus increasing the levels of life safety to occupants throughout the building.

A concern regarding privacy of occupants has been raised in the past. However, in a report, "Public Perceptions of High-Rise Building Safety and Emergency Evacuation Procedures" completed for HRB-SAC in 2007 by the Fire Protection Research Foundation, it was found that very few persons have concern over privacy issues if their exit stairwells were equipped with video cameras. When asked about their level of concern over privacy issues if the exit stairwells in their building were equipped with video cameras to permit monitoring of stairwells during evacuations, about nine out of ten respondents (89 percent) reported they would not be concerned at all. Of the remaining, 7 percent reported they would be somewhat concerned and 3 percent would be very concerned.

The High Rise Building Safety Advisory Committee (HRB-SAC) concluded that while this language would provide the ability to better manage and control egress through real-time management, at this time it is only feasible for it to be included in new high-rise buildings with occupant loads of over 4000. The topic of improving situation awareness of what happens in exit stairs during an evacuation is seen as an important topic with regards to occupant life safety and one worthy of new attention in the Code.

The proposed language is being submitted for the high-rise building section, 11.8, as the proposed text is strictly a high rise building issue and should be located, along with the other high rise specific issues in the Code. The HRB-SAC committee recognizes that Section 11.8 is applicable to all new high-rise buildings, thus the intent of proposed text is to be applicable to new buildings only. Several issues were highlighted in response to the proposed text regarding video monitoring that was submitted during the Public Input stage. This committee has carefully reviewed and evaluated the concerns and responses that were outlined and has addressed all applicable issues in this submission along with the proposed corresponding Annex language (See Section A.11.8.8.1.) The language has been revised from the Public Input stage to more clearly identify the requirements and installation of video monitoring equipment, how it can interface with a building security system, and where it needs to be located. Along with that, references to NFPA 731 and NFPA 72 have been added, as the expert documents on the installation of premises security systems and detection systems. NFPA 731 can be used to provide guidance for combined security and video monitoring systems.

The proposed Annex language addresses the benefits of such a system, the performance of the system, and sample design solutions. In addition, the proposed Annex language provides operational criteria that should be taken into consideration when designing and installing the video monitoring equipment. It was not of the opinion of this committee that specific operational and performance criteria be identified in the body of the Code. The performance and operation of the system should be verified with the AHJ to best meet the needs of the building.

HRB-SAC Public Comment #2

Recommendation:

A.11.8.8.1 With video systems, such as standard CCTV security systems typically installed in high-rise buildings, real-time images of occupants' and emergency responders' presence and movement (or lack thereof) in exits, especially at multiple locations of the same exit stairway, can provide critical information about current and developing conditions that should be taken into account in emergency management in accordance with the building's Emergency Action Plan.

Having video cameras positioned to capture images of an exit stairway, including just prior to the discharge doorway from the exit, provides information on the number and flow (in persons per minute for example) of the occupants, among other information, including access by responding firefighters using stairs if elevators are not available. It is not essential that the camera views and image resolution be sufficient to identify specific individuals. Depending on the context (including security applications), such specific-person identification might be essential, desirable, undesirable or forbidden. For post-incident evaluation and analysis of egress performance, it is helpful to have image quality and camera angle such that individuals' lateral and front-to-back positions, relative to the stair width, are clear.

For example, a high-rise building could have cameras at the ground level (assuming this is the level of exit discharge) and at every 5th floor above, and perhaps below grade, for each of the exit stairs. As well as providing a reasonable sampling of evacuee presence and movement within the exit stair system, information important for real-time situation awareness, a comparison of times at which particular individuals pass different cameras provides important data on evacuation movement speed and (indirectly) average occupant density, in addition to flow and number of evacuees overall.

When designing and installing a video monitoring system, and in conjunction with the AHJ, the following items should be considered in the operation of the system:

- (1) Inspection, testing, and maintenance of equipment
- (2) Duration/hours of operation
- (3) Storage and retention of information
- (4) Activation of the system
- (5) Integration with the building's emergency action plan

Substantiation:

The proposed text of 11.8.8 provides additions to the current provision of the code that have the potential to help the fire service, other fire safety personnel and building management to effectively monitor and manage egress during an emergency in a building. The use of equipment that would provide real time data to building's emergency command centers could lead to better direction of building evacuations and provide the ability for the command center to see conditions throughout the building. This would allow building officials and the fire service to observe if an egress route has become untenable and where they can most effectively redistribute occupants in the building, thus increasing the levels of life safety to occupants throughout the building.

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The proposed Annex language addresses the benefits of such a system, the performance of the system, and sample design solutions. In addition, the proposed Annex language provides operational criteria that should be taken into consideration when designing and installing the video monitoring equipment. It was not of the opinion of this committee that specific operational and performance criteria be identified in the body of the Code. The performance and operation of the system should be verified with the AHJ to best meet the needs of the building.

HRB-SAC Public Comment #3

Recommendation:

1. Add new Annex text to read as follows:

A.11.8.5.2.4(4) Stairway video monitoring equipment is included in the emergency command center.

2. Add asterisk to 11.8.5.2.4

11.8.5.2.4 The standby power system shall be connected to the following:

- (1) Electric fire pump
- (2) Jockey pump, except as otherwise provided in 40.4.2 for special-purpose industrial occupancies
- (3) Air compressor serving dry-pipe and pre-action systems, except as otherwise provided in 40.4.2 for special-purpose industrial occupancies
- (4)* Emergency command center equipment and lighting
- (5) Not less than one elevator serving all floors, with standby power transferable to any elevator
- (6) Mechanical equipment for smokeproof enclosures
- (7) Mechanical equipment required to conform with the requirements of Section 9.3

Substantiation:

New annex language recognizes that video monitoring equipment should be connected to the building's standby power as it is part of the emergency command center. New text regarding video monitoring systems was added to Section 11.8.8.