

NFPA 72-2010

National Fire Alarm and Signaling Code

TIA Log No.: 971

Reference: 24.4.1

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Section 24.4.1.4 was revised by a Certified Amending Motion on the floor of the NFPA meeting in June 2009 and now reads as follows:

24.4.1.4 Tones. The tone preceding any message shall be permitted to be a part of the voice message or to be transmitted automatically from a separate tone generator.

24.4.1.4.1 In occupancies where sleeping accommodations are provided, the pre-alert tone shall include a low frequency component of 520 Hz square wave range to accommodate the need of the hearing impaired for fire voice messages and emergency communication messages.

1. Revise 24.4.1.4 Tones, to read as follows:

24.4.1.4 Tones. The tone preceding any message shall comply with 24.4.1.4.1 through 24.4.1.4.4.

24.4.1.4.1 The tone preceding any message shall be permitted to be part of the voice message or to be transmitted automatically from a separate tone generator.

24.4.1.4.2* Except as specified in 24.4.1.4.3, in occupancies where sleeping accommodations are provided and the voice message is intended to communicate information to those who could be asleep, a low-frequency tone that complies with the following shall be used:

- (1) The tone shall be a square wave or provide equivalent awakening ability
- (2) The square wave shall have a fundamental frequency of 520 Hz \pm 10 percent.

A.24.4.1.4.2 The intent of this low frequency tone is to accommodate those with mild to severe hearing loss. See also 18.4.5, A.18.4.5 and A.29.3.8.2. The effective date listed in Chapter 18 for using a low frequency signal has not been allowed in this section (24.4.1.4) because voice systems are easily adapted to comply, whereas the requirements of 18.4.5 also apply to stand-alone tone signaling appliances.

24.4.1.4.3* In areas where sleeping accommodation are provided, but the voice communication system is used to communicate to occupants who are awake, the low frequency tone shall not be required.

A.24.4.1.4.3 Sleeping accommodations are provided in occupancies such as healthcare, detention and correction, and other occupancies where it would not be necessary to utilize a low frequency tone that awakens those sleeping. For example, in a hospital, the voice message is used to notify staff members who are already awake. The staff will then respond to the appropriate location in the hospital to carry out their duties which may include awakening and relocating patients who may be in danger. In addition, fire drills are required to be conducted on a regular basis and providing a low frequency tone could unnecessarily awaken patients, which would be detrimental to their care.

24.4.1.4.4 Audible signal tones for alert or evacuation shall meet the audibility requirements of either 18.4.3 (Public Mode Audible Requirements), 18.4.4 (Private Mode Audible Requirements), 18.4.5.1 and 18.4.5.2 (Sleeping Area Requirements), or 18.4.6 (Narrow Band Tone Signaling for Exceeding Masked Thresholds), as applicable.

SUBSTANTIATION: If a voice communication system is used and the intent is to awaken occupants and to communicate information to them, the new wording would require the use of the 520 Hz alert tone to awaken those occupants.

However, the current wording needs to be revised as there are occupancies where sleeping accommodations are provided that may have a voice communication system where it is not the intent to awaken those sleeping occupants, but to notify staff members to take appropriate action for those who are asleep. These occupancies can include healthcare occupancies (sleeping patients), daycare occupancies (infants/small children/adults unable to take action), detention and correctional occupancies (incarcerated occupants unable to exit), and educational occupancies (nurses offices with sleeping accommodations). Unless this situation is addressed, the tone in question would be required for instances where it is not desirable, and could even be detrimental to the building emergency plan.

Regardless of whether the system is required to awaken or to alert persons who are already awake, the tone signal must meet the audibility requirements of Chapter 18.

The new wording in 24.4.1.4.2 along with 24.4.1.4.3 and A.24.4.1.4.3 addresses the occupancies and situations listed above. Also, new paragraph 24.4.1.4.4 addresses the audibility of the tone signals.

In summary, this TIA would correct an unintended and undesirable consequence of the floor action which revised Section 24.4.1.4 by acceptance of a Certified Amending Motion at the NFPA meeting last June (2009) in Chicago.

Insofar as the emergency nature of this TIA, it is directly related to item 5.2(f) of the Regulations Governing Committee Projects, Section 5 Tentative Interim Amendments. See the following excerpt:

5.2 Evaluation of Emergency Nature. *Determination of an emergency nature shall include but not be limited to one or more of the following factors:*

(f) The proposed TIA intends to correct a circumstance in which the revised document has resulted in an adverse impact on a product or method that was inadvertently overlooked in the total revision process, or was without adequate technical (safety) justification for the action.