

Red Tagged!

by Dean K. Wilson, P.E.

***Question:* I went back to a job site today only to discover that the local fire inspector had placed a red tag on the fire alarm control panel. The owner was furious that his certificate of occupancy would be delayed. It seems that the AHJ wants me to make certain the strobes in this building all flash in synchronization. All I was doing was installing a new fire alarm control unit and a couple of new smoke detectors. Can the fire inspector require me to fix something that was beyond my scope of work?**

Answer: Nothing irritates an installer more than suddenly discovering that the work he or she has done won't pass muster with the Authority Having Jurisdiction. I'm sure you've heard from one of your fire alarm instructors along the way that officials might more properly state the term "Authority Having Jurisdiction" as "Grantors of Decisions." Why? Simply because the acronym works better.

Yes, the AHJ can and probably should require you to synchronize the strobes in an existing facility when you make as significant a change as replacing the fire alarm control unit. Here's what NFPA 72-2007, *National Fire Alarm Code*, has to say about it:

1.4 Retroactivity.

1.4.1 Unless otherwise noted, it is not intended that the provisions of this document be applied to facilities, equipment, structures, or installations that were existing or approved for construction or installation prior to the effective date of the document.

1.4.2 In those cases where it is determined by the authority having jurisdiction that the existing situation involves a distinct hazard to life or property, retroactive application of the provisions of this document shall be permitted.

As you can see, normally an AHJ would not apply some new provision in the National Fire Alarm Code retroactively. However, if the AHJ believes that a hazard exists and the latest version of the National Fire Alarm Code addresses that hazard, then the AHJ may legitimately require compliance with the appropriate provisions of the Code.

The Code does offer specific requirements for the synchronization of visible notification appliances. Note the following:

7.5.4.3.2 Visible notification appliances shall be installed in accordance with Table 7.5.4.3.1(a), using one of the following:

- (1) A single visible notification appliance.
- (2) Two visible notification appliances located on opposite walls.
- (3)* Two groups of visible notification appliances, where visual appliances of each group are synchronized, in the same room or adjacent space within the field of view. This shall include synchronization of strobes operated by separate systems.
- (4) More than two visible notification appliances or groups of synchronized appliances in the same room or adjacent space within the field of view that flash in synchronization

Once more than two visible notifications appliances appear in the field of view of any individual within the protected space, then the installer must provide synchronization of all the appliances in that same field of view. The Annex offers additional explanation as follows:

A.7.5.4.3.2(3) The field of view is based on the focusing capability of the human eye specified as 120 degrees in the *Illuminating Engineering Society (IES) Lighting Handbook Reference and Application*. The apex of this angle is the viewer's eye. In order to ensure compliance with the requirements of 7.5.4.3.2, this angle should be increased to approximately 135 degrees.

Testing has shown that high flash rates of high-intensity strobe lights can pose a potential risk of seizure to people with photosensitive epilepsy. To reduce this risk, more than two visible appliances are not permitted in any field of view unless their flashes are synchronized. This does not preclude synchronization of appliances that are not within the same field of view.

The safe pathway for any installer to take when revamping a fire alarm system: plan to synchronize the visible notification appliances. Manufacturers of fire alarm system control units and fire alarm system visible notification appliances have made this feature very cost effective.

As you continue to devote yourself to becoming familiar with each succeeding addition of the *National Fire Alarm Code*, keep in mind that every new provision holds the possibility for a legitimate change during the updating of a fire alarm system. When in doubt, ask the AHJ for a ruling in advance. And, always get that response in writing.

In this particular case, the synchronization of visible notification appliances first appeared in the 1996 edition of the *National Fire Alarm Code*. So, this is not a “new” requirement.

Though I would not want to minimize your pain in going back and adding to what you thought was a completed installation, I do tip my hat to the fire inspector who caught a very significant possible hazard and was not afraid to require appropriate action.

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