

## **Where's the Beef?**

**Dean K. Wilson, P.E.**

**Question: I have the privilege of working as a plans examiner in the fire prevention office of a moderate-sized city. Recently, I took my family on a drive across the state line into a near-by suburban area to visit a brand new department store that had opened. As you might expect, with my daily job almost always in the forefront of my mind, I entered the new store and began looking around for the various fire protection features. I was particularly interested, because about a year ago we had a similar store from the same national chain constructed within the jurisdiction that I serve.**

**Imagine my surprise when I could not locate any fire alarm system notification appliances except for one lone combination audible/visible appliance near the main service desk. Everywhere else I went throughout the store, I could not find any other appliances. And, when I peered into the stockroom, I saw smoke detectors. For heaven's sake, the building has automatic sprinklers! Why did someone install smoke detectors in the stock room? And, where are all the notification appliances?**

*Answer:* Your surprise and your questions remind me of the classic television and radio commercial spot announcement advertising the advantages *Wendy's* old-fashioned hamburgers. You may remember the spot I am talking about. An older lady asks a question in a rather surly voice: "Where's the beef?"

It appears that the new department store you visited has fallen prey to a problem that runs rampant throughout the United States: inconsistent enforcement of national codes and standards.

I believe you have discovered that whatever enforcement authority serves the jurisdiction where the national chain built this new store did not require the contractor to meet the minimum requirements of the appropriate national codes and standards. You did not comment on which of the national model building codes serves as the source document for the jurisdiction. You also did not share whether or not the same model code applies in both this jurisdiction and the one you represent.

Nevertheless, it appears that in this jurisdiction the enforcing authority did not give full consideration to the requirements for publicly accessible buildings to provide means to notify persons with hearing impairments. You see, one could make a case that perhaps at this new store the management of the facility intends to use a storewide public address system to notify occupants of the need to evacuate the store in case of fire. Some building codes permit this in certain occupancies. Other model codes require that such notification originate by means of a fire alarm system providing emergency voice/alarm communications service. This latter requirement assures that the wiring interconnecting the notification appliances—in this case, speakers— will have a means to monitor the integrity of the wiring. The requirement also assures that the amplifiers providing the audio power will also have a means for monitoring their integrity. A normal public address system does not have such features.

Even if the management of the store intended to provide notification by use of an appropriately approved public address system, this does not answer the question: how will hearing impaired people receive notification?

Usually, fire alarm notification for hearing impaired individuals originates with strobe lights, tested and listed for the purpose by either Underwriters Laboratories Inc. or FM Approvals. While some occupancies might choose to use other means of equivalent facilitation for the hearing impaired, most of the other means would not serve a department store occupancy where people freely come and go from the property in potentially large numbers. Strobe lights provide the only reasonable method of notification.

So, at the very least, you should have seen visible notification appliances installed throughout the facility. Perhaps the fire alarm system designer would have chosen to use ceiling-mounted units, providing the ceiling height did not exceed 30 feet. Table 7.5.4.1.1(b) of NFPA 72-2002, *National Fire Alarm Code*, makes provision for using a ceiling-mounted 150 cd strobe to serve a 50 ft by 50 ft square. An installer can readily purchase commercially available units rated at 177 cd. These could serve such a design quite well.

Since you did not see any notification appliances, other than one unit at the service desk, you have every reason to ask: "Where's the beef?"

As to why the Authority Having Jurisdiction (AHJ) required smoke detectors in a stock room protected by automatic sprinklers, I cannot imagine why. A properly designed automatic sprinkler system would certainly provide more than adequate protection for the kinds of stock one would normally associate with a department store stock room.

Perhaps the particular AHJ thought that the smoke detectors would offer the employees some advance warning, so they could take action to extinguish a small fire. My experience has shown me that department store employees rarely offer a stable enough work force to receive training and experience that would allow them to provide even an incipient fire fighting response, as defined by NFPA 600-2000, *Standard on Industrial Fire Brigades*, Section 1-4.3.

Thus, in my opinion, and presumably in yours, the smoke detectors represent an unnecessary expenditure for this particular application.

The larger question that this situation poses rests with the reality that all across the United States we seem trapped by inconsistent enforcement of national codes and standards. Sometimes the inconsistent enforcement results from a lack of training on the part of the AHJ. Sometimes it comes from a situation where undo and inappropriate political influence has stifled proper enforcement. Sometimes, it derives from situations where owners and contractors make a determined effort to see how little protection they can provide and still get their plans approved by an AHJ.

Whatever the reason, in the end, public safety suffers. The potential well being of countless thousands of citizens rests on the decisions an AHJ makes when he or she reviews a set of plans and determines the degree to which he or she will follow the requirements of the national codes and standards.

Here's an idea. If you are an AHJ reading this article, why not decide to become as educated as possible about how to enforce the national codes and standards. Then, start uniformly enforcing them on every project in your jurisdiction. You may not win a popularity contest. But, I'll be willing to wager that you will sleep very well, all night long, knowing that you've done the right thing.

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