

No! I'm the AHJ!

by Dean K. Wilson, P.E.

***Question:* As a sub-contractor to the electrical contractor, our company typically designs and installs very large fire alarm systems for industrial plants. We have recently become involved in a conflict between the fire inspector in a jurisdiction and the insurance company that provides the property insurance for the industrial plant in question.**

When we received the bid documents for the fire alarm system for a new warehouse and office complex, the bid documents specified that the fire alarm system must meet the requirements of the local building code, NFPA 72-2010, *National Fire Alarm and Signaling Code*[®], and also meet the engineering requirements and specifications provided by the insurance company that underwrites property insurance for the facility.

Subsequently, the owner supplied us with a document entitled, "Specification for Fire Protection," issued by the insurance company based on their review of the preliminary construction drawings for this new facility. Among many very specific and very detailed requirements, these Specifications state that the fire alarm system shall provide complete coverage in accordance with NFPA 72-2010, section 17.5.3.1, using smoke detectors or heat detectors in all portions of the building not otherwise protected by an automatic sprinkler system.

In our design, therefore, we specified smoke detectors above the suspended ceiling in the office building. But, the fire inspector for the local jurisdiction has demanded that we

remove these smoke detectors from the design. He has stated in writing that these detectors serve no useful purpose. When we pointed out to him that we were simply following the Specifications from the insurance company, he stated very emphatically that “he and he alone” was the Authority Having Jurisdiction, not them. He refuses to approve our design until we remove those smoke detectors. Can you help us?

Turf wars always produce some interesting, albeit annoying, circumstances when you try to provide a design that meets the requirements of the various stakeholders in a project.

First of all, to deal with the issue of who serves as the Authority Having Jurisdiction, please note the definition in Section 3.2.2 of NFPA 72-2010:

3.2.2* Authority Having Jurisdiction (AHJ). An organization, office, or individual responsible for enforcing the requirements of a code or standard, or for approving equipment, materials, an installation, or a procedure.

A.3.2.2 Authority Having Jurisdiction (AHJ). The phrase “authority having jurisdiction,” or its acronym AHJ, is used in NFPA documents in a broad manner, since jurisdictions and approval agencies vary, as do their responsibilities. Where public safety is primary, the authority having jurisdiction may be a federal, state, local, or other regional department or individual such as a fire chief; fire marshal; chief of a fire prevention bureau, labor department, or health department; building official; electrical inspector; or others having statutory authority. For insurance purposes, an insurance inspection department, rating bureau, or other insurance company representative may be the authority having jurisdiction. In many circumstances, the property owner or his or her designated agent assumes the role of the authority having jurisdiction; at government installations, the commanding officer or departmental official may be the authority having jurisdiction.

This definition seems quite straightforward. The Annex offers some additional insight into how this definition applies in a real situation by indicating quite clearly that at virtually every physical location, multiple Authorities Having Jurisdiction will have an influence on the

requirements. As a fire alarm system designer, you could solve any conflict between the various AHJs by always basing your design on the most severe requirements.

Yes, the public fire authority—in this case the fire inspector—clearly serves as the *public* Authority Having Jurisdiction having statutory authority. But the insurance company that underwrites the fire/property insurance for this facility also serves as an Authority Having Jurisdiction—in this case, a *private* AHJ. In some cases, you may have upwards of four or five legitimate Authorities Having Jurisdiction on a particular project. Each of these AHJs will have an influence over the approval of your design.

Do not be dismayed by this. Rather, learn how to use your knowledge of the relevant building codes, and other codes and standards, to your advantage. You can serve a very important role in bringing the various stakeholders together. Let me say more about that later in this article. For now, let's take a look at the specific insurance company requirement.

In this case, the insurance company has referenced NFPA 72-2010, *National Fire Alarm and Signaling Code*[®], for “complete” coverage of smoke or heat detectors wherever automatic sprinkler protection does not exist. Section 17.5.3.1, and its related subsections, provides a very clear description of “total (complete) coverage.”

17.5.3.1 Total (Complete) Coverage. Where required by laws, codes, or standards, and unless otherwise modified by 17.5.3.1.1 through 17.5.3.1.5, total coverage shall include all rooms, halls, storage areas, basements, attics, lofts, spaces above suspended ceilings, and other subdivisions and accessible spaces, as well as the inside of all closets, elevator shafts, enclosed stairways, dumbwaiter shafts, and chutes.

17.5.3.1.1 Where inaccessible areas are constructed of or contain combustible material, unless otherwise specified in 17.5.3.1.2, they shall be made accessible and shall be protected by a detector(s).

17.5.3.1.2 Detectors shall not be required in combustible blind spaces if any of the following conditions exist:

- (1) Where the ceiling is attached directly to the underside of the supporting beams of a combustible roof or floor deck
- (2) Where the concealed space is entirely filled with a noncombustible insulation (In solid joist construction, the insulation shall be required to fill only the space from the ceiling to the bottom edge of the joist of the roof or floor deck.)
- (3) Where there are small concealed spaces over rooms, provided that any space in question does not exceed 50 ft² (4.6 m²) in area
- (4) In spaces formed by sets of facing studs or solid joists in walls, floors, or ceilings, where the distance between the facing studs or solid joists is less than 6 in. (150 mm)

17.5.3.1.3 Detectors shall not be required below open grid ceilings if all of the following conditions exist:

- (1) Openings of the grid are $\frac{1}{4}$ in. (6.4 mm) or larger in the least dimension.
- (2) Thickness of the material does not exceed the least dimension.
- (3) Openings constitute at least 70 percent of the area of the ceiling material.

17.5.3.1.4 Detectors shall not be required in concealed, accessible spaces above suspended ceilings that are used as a return air plenum meeting the requirements of NFPA 90A, *Standard for the Installation of Air-Conditioning and Ventilating Systems*, where equipped with smoke detection at each connection from the plenum to the central air-handling system.

17.5.3.1.5 Detectors shall not be required underneath open loading docks or platforms and their covers and for accessible under-floor spaces if all of the following conditions exist:

- (1) Space is not accessible for storage purposes or entrance of unauthorized persons and is protected against the accumulation of windborne debris.
- (2) Space contains no equipment such as steam pipes, electric wiring, shafting, or conveyors.
- (3) Floor over the space is tight.
- (4) No flammable liquids are processed, handled, or stored on the floor above.

Obviously, you will need to very carefully review all of the detailed requirements in this section to determine whether or not you need to provide smoke detectors in that space above the suspended ceiling in the office area of the facility. Once you have made your analysis, you need to carefully and thoroughly document your analysis in writing and include it as a part of your bid package.

Now, let me go back to some suggestions as to how to resolve the conflict between the dueling AHJs. In order to attempt to resolve this question of who has the final authority on the requirements for this facility, we suggest that you arrange to have a meeting with the building

owner, the fire inspector, representatives of the Insurance Company, the electrical contractor, and any other relevant stakeholders in this project. At that meeting, you should present your design criteria for consideration by all of these stakeholders. Include a complete documentation that shows how you reached your conclusions. Rely heavily on requirements of the appropriate building codes and other codes and standards, such as NFPA 72-2010, *National Fire Alarm and Signaling Code*[®]. When someone states an opinion, politely ask that person to back up his or her opinion by appropriate code or standard citations. Frequently ask the property owner to share his or her design goals. Ask the insurance company representatives to share any loss experience they may have had that will support their requirements.

In other words, act as a moderator/mediator in helping the owner make a wise decision regarding this conflict. You will find that sometimes serving as a catalyst to get all the stakeholders in the same room will serve your best interests—and, more importantly, the best interests of the building owner and *all* of the Authorities Having Jurisdiction.

IMSA member Dean K. Wilson, P.E., FSFPE, C.F.P.S., now retired on disability, formerly worked as a Senior Engineer in the Erie (PA) office of the fire protection engineering and code consulting firm, Hughes Associates, Inc. (www.haifire.com). The opinions expressed in this article are strictly his own. You may reach him by e-mail at deanwilson@roadrunner.com or by telephone at 814-397-5558.