Don't Tell Me What To Do!

by Dean K. Wilson, P.E.

The music during the Sunday morning church service had deeply touched me. Just as such music intends, I had felt that the hymns, the solos, and the choir's anthem had all helped me to enter into a proper spirit of worship.

As he brushed past me, I reached for the elbow of the Minister of Music. He stopped in response to my touch. I smiled and told him how much the music had meant to me. He thanked me for my comments and we chatted amiably for several minutes. As he turned to go, I grinned at him and said, "Steve, have a great rest of the day."

With a twinkle in his eye, and a grin on his face, he responded, "Don't tell me what to do!" With a wink, he moved on his way. My laughter followed him all the way up the aisle.

Later, I thought of our exchange, and of Steve's wry sense of humor, when I read an e-mail from a very frustrated fire alarm superintendent who serves a community in upstate New York. "Why," he asked, "does the relationship between fire alarm installers and Authorities Having Jurisdiction have to have such an adversarial tone? Don't these contractors realize that we AHJs simply want to make certain that the citizens in our communities have the appropriate level of the protection?"

"Just the other day," he continued, "I went out to inspect the progress on a new nursing home facility. The contractor and his helper seemed busily engaged in pulling cable from room to

room on the second floor. I noticed that the cable they had on hand did not bear a UL Listing Mark for fire alarm use. When I asked them if the circuits they were pulling would serve the smoke detectors in each room, they told me that I was correct. When I asked why they weren't using UL Listed fire alarm cable, the contractor told me that he was using the same cable that he had used in the nursing home system he had just installed last month in the next town down the road.

"I explained that the fire alarm control unit that he had selected for the job had designated the fire alarm initiating device circuits as 'power-limited.' NFPA 70-2002, *National Electrical Code,* would require the use of either Chapter 3 wiring methods, UL Listed nonpower-limited fire alarm cable, or UL Listed power-limited fire alarm cable. I told him that the ordinary cable he was using was not permitted by the *Code.*

"With an angry curse, he began to complain about the fact that every town he worked in but this one, he was able to work hard and get the job done without unnecessary interference. Every time he did a job in this town, I was always coming around finding something wrong with his work. How could he possibly get his work done if I was going to keep coming up with stupid changes. All they did was increase the cost of the job and slow down the progress of the work.

"I resisted the urge to give him an angry response. Instead, I took out my copy of NFPA 72-1999, *National Fire Alarm Code,* turned to sections 1-5.2.2 and 1-5.5.4 and showed him what it said:"

> 1-5.2.2 Code Conformance. All power supplies shall be installed in conformity with the requirements of NFPA 70, *National Electrical Code,* for such equipment and with the requirements indicated in this subsection.
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> 1-5.5.4* Wiring. The installation of all wiring, cable, and equipment shall be in accordance with NFPA 70, *National Electrical Code,* and specifically with Articles 760, 770, and 800, where applicable. Optical fiber cables shall be protected against mechanical injury in accordance with Article 760.

> A-1-5.5.4 The installation of all fire alarm system wiring should take into account the fire alarm system manufacturer's published installation instructions and the limitations of the applicable product listings or approvals.

"I wish I could tell you," the AHJ continued in his e-mail, "that this exchange solved the problem with this contractor once and for all. However, later in the week, I had another angry exchange with him when I pointed out the fact that he needed to install the sprinkler system control valve supervisory switch on a supervisory initiating device circuit, not merely connect it in series with the fire alarm initiating device circuit to which he had connected the waterflow initiating device.

"Once again, I pointed out the requirement in the *National Fire Alarm Code:*"

> 1-5.4.4 Distinctive Signals. Fire alarms, supervisory signals, and trouble signals shall be distinctively and descriptively annunciated.
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> 1-5.4.7 Distinctive Signals. Audible alarm notification appliances for a fire alarm system shall produce signals that are distinctive from other similar appliances used for other purposes in the same area. The distinction among signals shall be as follows:
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> (a) Fire alarm signals shall be distinctive in sound from other signals. Their sound shall not be used for any other purpose. The requirements of 3-8.4.1.2.1 shall apply.
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> (b)* Supervisory signals shall be distinctive in sound from other signals. Their sound shall not be used for any other purpose.
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> *Exception: A supervisory signal sound shall be permitted to be used to indicate a trouble condition. If the same sound is used for both supervisory signals and trouble signals, the distinction between signals shall be by other appropriate means such as visible annunciation.*
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> (c) Fire alarm, supervisory, and trouble signals shall take precedence, in that respective order of priority, over all other signals.
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> *Exception: Signals from hold-up alarms or other life-threatening signals shall be permitted to take precedence over supervisory and trouble signals if acceptable to the authority having jurisdiction.*

> A-1-5.4.7(b) A valve supervisory, low-pressure switch or other device intended to cause a supervisory signal when actuated should not be connected in series with the end-of-line supervisory device of initiating device circuits, unless a distinctive signal, different from a trouble signal, is indicated.

In responding to the e-mail message from this very frustrated Authority Having Jurisdiction, I reminded him that he should probably quote a couple more *Code* sections to this errant contractor. I specifically suggested the following sections:

> 1-5.5.2.1* All systems shall be installed in accordance with the specifications and standards approved by the authority having jurisdiction.
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> A-1-5.5.2.1 Fire alarm specifications can include some or all of the following:
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> (1) Address of the protected premises
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> (2) Owner of the protected premises
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> (3) Authority having jurisdiction
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> (4) Applicable codes, standards, and other design criteria to which the system is required to comply
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> (5) Type of building construction and occupancy
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> (6) Fire department response point(s) and annunciator location(s)
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> (7) Type of fire alarm system to be provided
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> (8) Calculations, for example, secondary supply and voltage drop calculations
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> (9) Type(s) of fire alarm-initiating devices, supervisory alarm-initiating devices, and evacuation notification appliances to be provided
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> (10) Intended area(s) of coverage
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> (11) Complete list of detection, evacuation signaling, and annunciator zones
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> (12) Complete list of fire safety control functions
>
> (13) Complete sequence of operations detailing all inputs and outputs
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> 1-6.1 Approval and Acceptance.
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> 1-6.1.1 The authority having jurisdiction shall be notified prior to installation or alteration of equipment or wiring. At its request, complete information regarding the

> system or system alterations, including specifications, wiring diagrams, battery calculation, and floor plans shall be submitted for approval.
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> 1-6.1.2 Before requesting final approval of the installation, if required by the authority having jurisdiction, the installing contractor shall furnish a written statement stating that the system has been installed in accordance with approved plans and tested in accordance with the manufacturer's specifications and the appropriate NFPA requirements.

A Minister of Music, with a twinkle in his eye, can surely tell one of his choir members, "Don't tell me what to do." A contractor installing a fire alarm system, however, should think twice, maybe even three times, before taking that attitude with an Authority Having Jurisdiction.

On the other side of the issue, Authorities Having Jurisdiction have a responsibility to possess a clear understanding of the intent of the requirements of NFPA 72-1999, *National Fire Alarm Code*. And, if they have any questions regarding that intent, they should ask for guidance from knowledgeable fire protection engineers. Then, the AHJs will have the ability to make fair and just decisions regarding the acceptability of a fire alarm installation.

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