

## **It's All About Control**

by Dean K. Wilson, P.E.

**Our University operates a large research facility for the federal government. We have several hundred buildings at a single site that occupies a land mass nearly as large as a small town. We wish to bring fire alarm signals back to a single alarm receiving point, make a decision at that location whether or not to evacuate a building, and then send a signal back to the affected building to actuate the fire alarm notification appliances. Can we do this?**

Of course you *can* do it. The question you should ask: “Can we do this and comply with the *Code?*”

NFPA 72-2002, *National Fire Alarm Code*, offers several sections that might apply to this situation. Figure 8.5.1 describes two distinct arrangements for the division of scope of a fire alarm system with a central monitoring location, known as a “supervising station.” The first connects a master fire alarm control unit with the supervising station through a transmitter and associated transmission channels. The second places a master fire alarm control unit inside the supervising station location.

In the first arrangement, Chapter 6 covers the requirements for the initiating devices, notification appliances, and control equipment up to the point where it connects to the transmitter. Chapter 8 covers the requirements for the transmitter, the associated transmission channel, any associated subsidiary station, and the supervising station. In the second arrangement, Chapter 6 of

the *Code* covers the requirements for the initiating devices, notification appliances, and control equipment. Chapter 8 covers the operational requirements for the supervising station.

Since the term “subsidiary station” might seem unfamiliar, the *Code* defines it as “a normally unattended location that is remote from the supervising station and is linked by a communications channel(s) to the supervising station. Interconnection of signals on one or more transmission channels from protected premises with a communications channel(s) to the supervising station is performed at this location.” A fire alarm system installer would tend to use one or more subsidiary stations when connecting many geographically diverse groupings of protected premises to a supervising station located a considerable distance away from each grouping of premises.

The concept of having fire alarm signals transmit to a supervising station where some operator will then make the decision whether or not to evacuate the occupants of the affected building involves a couple of considerations. First of all, the decision to *not* evacuate would then involve resetting the fire alarm control unit at the affected building from the remote location of the supervising station. Sections 6.8.2.7 and 6.8.2.8 offer requirements regarding this.

6.8.2.7 Protected premises fire alarm control units shall be capable of being reset or silenced only from the control unit at the protected premises unless otherwise permitted by 6.8.2.8.

6.8.2.8 Remote resetting and silencing of a fire alarm control unit from other than the protected premises shall be permitted with the approval of the authority having jurisdiction.

As you can see, in order to reset the fire alarm control unit at the affected building from the remote location of the supervising station, the University must obtain specific approval to do so from the Authority Having Jurisdiction.

A second consideration involves delaying the actuation of the fire alarm notification appliances while the operator at the supervising station makes the decision whether or not to actuate the notification appliances at the affected building. The *Code* offers two distinct means of delaying notification: “presignal feature” and “positive alarm sequence.” Of these two, where a human operator decides to initiate the actuation of the notification appliances at the affected building, the requirements for the presignal feature most closely apply.

6.8.1.2\* Presignal Feature. If permitted by the authority having jurisdiction, systems shall be permitted to have a feature that allows initial fire alarm signals to sound only in department offices, control rooms, fire brigade stations, or other constantly attended central locations and for which human action is subsequently required to activate a general alarm, or a feature that allows the control equipment to delay the general alarm by more than 1 minute after the start of the alarm processing. If there is a connection to a remote location, the transmission of the alarm signal to the supervising station shall activate upon the initial alarm signal.

A.6.8.1.2 A system provided with an alarm verification feature as permitted by 6.8.5.4.1 is not considered a presignal system, since the delay in the signal produced is 60 seconds or less and requires no human intervention.

The *Code* does not specifically indicate that the designated locations which receive the first fire alarm signals must exist at the affected building. However, the presignal feature traditionally has applied to buildings where someone *within* the protected building has made the decision to manually withhold or initiate the actuation of the fire alarm system notification appliances. In addition, NFPA 101-2003, *Life Safety Code*, limits those occupancies where the fire alarm system may employ the presignal feature. Other model building codes also impose such limitations.

Before the University decides to apply this concept throughout the research facility it operates for the federal government, it should make certain that the occupancies of the various buildings at the site include those where the *Life Safety Code*, or applicable building code, permits

the use of the presignal feature. Furthermore, the University should seek specific permission to use this feature from the Authority Having Jurisdiction, since the *National Fire Alarm Code* requires such permission.

The University will also want to develop some very carefully crafted written criteria to guide the operator at the supervising station in making the decision when to actuate and when to withhold the operation of the fire alarm notification appliances at a particular building.

---

IMSA member Dean K. Wilson, P.E., 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](http://www.haifire.com)). The opinions expressed in this article are strictly his own. You can reach him by e-mail at [deanwilson@adelphia.net](mailto:deanwilson@adelphia.net) or by telephone at 814-897-0827.