

Carefully Examining Fire Alarm Goals

by Dean K. Wilson, P.E.

***Question:* A large corporation has eight different facilities spread throughout the jurisdiction where I serve as fire alarm superintendent. Recently, the corporate security director invited me to attend a planning meeting where the corporate officials indicated they intend to upgrade or replace the fire alarm systems in every single facility. This project will cost an estimated seven million dollars. Near the end of the meeting, they asked me where I thought they should begin in their planning process. I suggested they begin at the beginning by examining their fire protection goals. We're to meet again next week. Can you offer me any insights that I might share with them?**

You gave them really sound advice. Of course! They should begin at the beginning. I am reminded of the "Do-Re-Mi" song from *The Sound of Music*. "Let's start at the very beginning, a very good place to start..."

I am also reminded of some very wise advice given by Steven Covey in his masterful book *The Seven Habits of Highly Successful People*. One of Covey's seven habits states: "Begin with the End in mind." So, knowing where to begin, and also knowing where you're headed, will give a straight pathway to success.

As far as fire protection goals, you should consider the five major goals and then flesh out the appropriate details for each one. The five goals include the following:

Life Safety

Property Protection

Mission Continuity

Heritage Preservation

Environmental Protection

A facility owner should carefully consider what his or her overarching goals for fire safety will encompass. And, all fire protection systems must have their designs based on the objectives that will ultimately meet those overarching fire protection goals.

Life Safety seems to represent a very obvious goal. The owner will want to protect the occupants of the facility. From a fire alarm system standpoint, this usually means providing prompt detection of a hostile fire and providing notification to the occupants so they may either evacuate the facility or move to designated areas of refuge within the facility. The fire alarm system design must closely relate to the “Emergency Action Plan,” as required by 29 CFR 1910 Subpart E. The Occupational Safety and Health Administration (OSHA) requires virtually every facility to have an “Emergency Action Plan.”

Property Protection also seems to represent an obvious goal. The owner will want to protect the buildings, materials, and stock at his or her facility. The combustibility of the construction materials used in the buildings, coupled with the combustible loading and continuity of combustibles within the building, will determine the nature and extent of fire protection systems necessary. From a fire alarm system standpoint, the fire alarm system design will focus on ensuring the operational readiness of other fire protection systems, along with prompt detection of a hostile fire and providing notification to either private or public emergency responders.

Mission Continuity, as an overarching fire protection goal, requires analysis of those portions of the facility that may serve as production bottlenecks or have some interdependency with

other portions of this facility or some other facility of this owner. Every business has some critical areas that must have protection against destruction by fire, in order for the facility to remain operational. The fire alarm system design must address the manner in which the fire alarm system can help assure the continuity of the facility's mission. For example, if all products at a manufacturing facility must pass through a single paint spray booth, the protection of the booth becomes critically important. Similarly, if parts produced at one facility are critical to assembly operations at another facility of the same owner, the interdependency merits an enhanced level of fire protection.

Heritage Preservation can relate to the historical importance of a facility, such as some historically significant building. But, it can also relate to the preservation of critical business records or critical patterns, dies, forms, or other manufacturing tools, without which the facility cannot continue operating properly. Again, virtually every facility has some aspect of its business that merits attention from a fire alarm system to promote heritage preservation. The fire alarm system design must address the manner in which the fire alarm system can integrate with other fire protection systems in order to ensure the needed preservation of the historically significant buildings, business records, or manufacturing elements.

Environmental Protection presents the most obscure fire protection goal. It addresses the impact a hostile fire might have on the environment. This might include a fire at a facility that itself provides environmental protection, such as a sewage treatment plant or a waste disposal and processing facility. Or, it could relate to a facility located so near the aquifer of the public water supply that runoff from water used to fight a fire at the facility might contaminate the drinking water. And, the very discharge of products of combustion into the air can represent an environmental hazard in certain circumstances. The fire alarm system design must address the

manner in which the fire alarm system will integrate with other fire protection systems to mitigate any environmental hazard.

Once a facility owner—along with other stakeholders, including you, as fire alarm superintendent—carefully analyzes each of these five goals, he or she must take the next step and outline the objectives that will help meet each of the goals. Your knowledge as a fire protection professional can greatly aid in this process. You have unique information you can share based on your understanding of fire alarm systems, public fire department operations, and experiences that you have had over your years of service.

True fire safety for any facility comes about by a cooperative effort between the several individuals involved. The melding of the knowledge, understanding, and information from these various people can help create a much more effective fire safety system for any facility.

By starting at the very beginning, and by beginning with the end in mind, you can help the facility owner make truly wise decisions about how a fire alarm system can best serve to meet the overarching fire protection goals.

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