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# Achieving Competency

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

**So often you answer technical questions that probe the details of the various codes and standards. I wonder, though, what really achieves competency in a fire alarm installation?**

If you intend to imply that a knowledge of and application of the appropriate codes and standards will not guarantee competency, you've hit the mark. Competency in every area of life involves a series of interlocking, interdependent variables. When these variables function interactively to strengthen each other, one can achieve the highest level of competency. Industrial psychologists call this a "holistic approach."

Concerning fire protection, we can identify these variables quite readily: manufacture, specification, design, installation, testing, maintenance, and use. Interesting these seven "golden elements" represent nothing more than a logical, sequential approach. An implementer of a fire protection system must work quite hard to achieve competency within the framework of each element. Let's look at each one.

The inherent quality of the equipment that makes up a fire alarm installation depends on the quality processes of the manufacturer. Fortunately, this day in which we live emphasizes quality

achievement in manufacturing through such means as ISO 9000 certification and the Baldridge Award, to name just two such initiatives.

The adaptation of Dr. Deming's lifelong work to create "Total Quality Management" has focused manufacturers on the fact that everyone employed at the factory contributes to quality. Even the Underwriters Laboratories' and Factory Mutual Research Corporation's listing process provides an outside audit of quality.

Industrial psychologists have long identified that to make any program work, the implementation must have an internal audit process, and an external audit process. This makes the testing and listing of the nationally-recognized testing laboratories vitally important in the achievement of competent equipment.

To use equipment that has not followed the rigorous listing process denies the buyer the opportunity of quality assurance at the highest level. Thus, all fire alarm equipment must have achieved listing by UL or FMRC. But listed fire alarm equipment alone cannot assure a competent system.

The competency of the designer will largely affect the competency of the design. Whenever possible, designers should have achieved professional registration as licensed professional fire protection engineers. And, they should have a proven track record in fire alarm system design. When the rigorous requirements for professional registration prevents an individual who has a long work history in the fire alarm industry from achieving registration, such an individual can seek a

recognition of competency through the National Certification in Engineering Technologies fire protection - fire alarm certification track. While the original design of NICET certification requires such certified technologists to work under the supervision of a licensed professional engineer, some believe that the writers of the codes and standards -- which include licensed professional fire protection engineers—has built-in much of the actual “engineering” during the codes- and standards-making process.

Whichever view you take, design by P.E. or design by NICET certified Level 4 technologist helps achieve a competent design. But the design alone cannot assure quality.

Someone must translate the design into a thorough and enforceable set of specifications. The specifications must contain carefully-selected goals based on those used by the designer. The writer of the specifications should state these goals in a performance-based format. He or she should then support each goal with appropriate prescriptive requirements. Whenever possible, he or she should use direct references to the codes and standards.

Then, the writer should include specific objectives that will lead to successful fulfillment of the stated goals. These objectives will guide the installer as he or she executes the design. You might say the design tells you where to go. The specifications tell you how to get there.

In the next installment, I will share my thoughts on at least the next three of the seven “golden elements” that help achieve a competent fire protection system: manufacture, design, specification,

installation, testing, maintenance, and use. Am I trying to create a cliff-hanger? You bet I am. Some call it “writer’s job security.”

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