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National Electrical Manufacturers Association

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The Changing Communications Within Fire Alarm System Reporting

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The Changing Communications Within Fire Alarm System Reporting

Executive Summary

The North American communications infrastructure is quickly changing. Over the last ten years, technology has changed more than the previous one hundred. Technology's rate of development is expected to continue escalating such that the next ten years will bring more change than the past ten. This technological explosion directly impacts the fire alarm industry in many ways including: fire detection, notification, panel operations, and alarm signal transmission via a rapidly evolving global communications infrastructure.

The requirements of NFPA 72 for fire alarm system communications between a protected premises fire alarm system and the supervising station have kept up with technology in some ways and have been left behind in other ways. This publication discusses today's options for fire alarm system communications.

Development

Prior to 1993, fire alarm communications and offsite monitoring of fire alarm systems requirements were found in NFPA 71, *Standard for Central Station Service*. With all NFPA signaling standards combined into one document, these requirements were relocated to Chapter 4 of NFPA 72-1993, *National Fire Alarm Code*. The organization of the National Fire Alarm Code has changed from time to time since then, but the requirements can still be found in the Supervising Stations Chapter (currently, Chapter 26 of NFPA 72-2016, *National Fire Alarm and Signaling Code*).

In the past, when a developer of a communications technology wanted to bring a product to market, the following procedure was required:

a) The new technology would be brought to the NFPA Technical Committee, where it would have been discussed during the code development cycle.
b) If the NFPA Technical Committee found the technology viable, the technology along with all of its technical information was added to the standard.
c) Once the NFPA standard was published, the manufacturer could get the product listed and take it to market.

The NFPA Technical Committee rated all proposed technologies using informal guidelines composed of of three major components:

a) The probability of getting a signal through called "throughput probability;"
b) Procedure for notification of sender and receiver when the communications process was interrupted;and
c) Robustness of the technology against normal causes of outages.

In the 1980s when technology was evolving at a more leisurely pace, this process worked. Through the 1990s and into the 21st century, the NFPA Technical Committee realized that this time-honored process was too slow.