Mass Notification

NEMA Signaling Protection and Communications Enhance Public Safety

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In the beginning, society believed that natural and man-made disasters were a punishment from a higher power and as such, beyond their control. As society evolved, the development of codes and standards have led to a system that avoids, or at least mitigates, potential damages.

Recent events (e.g., campus shootings) have triggered mitigation to include a systematic alerting system that would direct people out of harm's way. This new lessening of the impact of a disaster is called mass notification. NEMA member companies' technological expertise is an essential element of this initiative to enhance public safety.

WHAT IS MASS NOTIFICATION?

Mass notification is fundamentally a communication system that transmits vital safety information from one entity to many in a timely and efficient manner.

The manufacturers that make up the Signaling Protection and Communication section (3SB) have a long history in the technology of alerting people to the dangers of fire and other threatening events. This industry has led the way in developing robust self monitoring communications systems that are an integral part of fire alarm and nurse call systems.

Therefore, it was not surprising when the Department of Homeland Security (DHS) and the Department of Defense turned to the *National Fire Alarm Code* (NFPA 72, published by the National Fire Protection Association) and in turn, to the fire alarm industry as a technology partner, for delivering the message.

Today, many buildings, particularly high rises, are equipped with an audio evacuation system as part of the building fire alarm system. These audio evacuation systems are optimized so that the messages they broadcast are clearly heard and understood over ambient noise. It is this capability that positions these systems as the ideal basic infrastructure component of a mass notification system.

Although audible mass notification serves the needs of most people, the fire alarm industry has also been a leader in providing equal facilitation to persons with hearing impairments. Today, most fire alarm systems are equipped with high intensity strobes that serve to alert people with hearing disabilities. These strobes are also part of a mass notification system.

By intent and design, fire alarm systems are

Firefighter interface based on NEMA SB 30. Photo courtesy of Honeywell Life Safety

required to operate under difficult conditions and resist interference so that the fire alarm signal is not compromised and takes precedence over all other signals. The development of a system of mass notification now requires that a higher authority take control of the system so that a campus-wide or community-wide message can be broadcast.

This raises concern that a fire alarm signal may not be broadcast during a local fire. These concerns are all part of a major standards development process under the 2010 *National Fire Alarm and Signaling Code*. The latest edition, which

incorporates signaling, includes a new chapter, Emergency Communications Systems (ECS), which specifically addresses how these mass notification systems are to be structured and how signal priority is to be assigned.

NEMA 3SB Section member company representatives are the leading technology contributors to the development and evolution of this standard.

Fire Alarm Systems Play a Key Role

Inclusion of ECS in NFPA 72 is a clear recognition that fire alarm systems will be a primary message delivery system for mass notification. Much of this recognition is attributable to technological innovations that have been developed by the fire alarm industry as well as the publication of two NEMA standards publications that address the specific needs of a mass notification system:

- NEMA SB 50 *Emergency Communications Audio Intelligibility Applications Guide*, which provides essential system design consideration to enhance understanding of emergency message announcements

- NEMA SB 30 *Fire Service Annunciator and Interface*, which provides for the consistent standardized display of information for first responders so that they can quickly, safely, and efficiently respond to and deal with emergency events.

Photos courtesy of Honeywell Life Safety

DHS is also developing two high-level wide-area mass notification systems:

- Integrated Public Alert Warning System, which is the nation's next-generation infrastructure of alert and warning networks, expanding on

A typical high-rise or campus-type notification system includes the fire alarm panel with fire communication and voice (center), with audio system and mass notification strobe (right), and speaker/operator work station (left). Photo courtesy of Honeywell Life Safety

the traditional audio-only radio and television Emergency Alert System

- Commercial Mobile Alert System, which is a combined effort between the federal government and commercial mobile service providers to define a common mobile alert standard

The full implementation of these systems will involve direct interface, and in many instances control, of fire alarms and their audio evacuation systems. NEMA 3SB member companies, as well as standards development activity, are actively ensuring that fire alarm systems will synergistically operate with these high level systems while maintaining optimal fire alarm performance that society has come to expect. ⊕

Isaac Papier, vice president of industry relations and director of strategic development at Honeywell Life Safety, is chairman of the NEMA Signaling, Protection, and Communications Research Committee. He is also active in other associations, technical committees, regulatory authorities, and industry events.

Emergency Call Systems Ensure Safety

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Assisted living facilities require a high level of communication among staff, residents, and external resources, like emergency personnel or family members. Emergency call systems enable staff to respond in a timely and efficient manner and provide

residents with peace of mind. An effective emergency call system can be configured to fulfill specific facility needs, streamline communication, and optimize workflow.

Its main function is to summon assistance or open a line of communication. Tone-

visual systems alert staff of a resident's request by utilizing sound and lights. Audio-visual systems incorporate voice communication in real time. Both systems make it possible for a resident to alert staff that assistance is needed in a specific unit.