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Q&A with
Jim Shannon
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Perhaps no one has been closer to the events of 2003 than NFPA’s president and CEO, James M. Shannon. Since becoming president in 2002, Shannon has been at the forefront, advocating change and offering NFPA as the catalyst.

How would you characterize 2003 for NFPA?
It’s been a momentous year. There was just a tremendous number of events at NFPA. For one thing, we had an unusual number of tragedies to address, including the Station fire in West Warwick and the crowd crush at the E2 nightclub in Chicago that happened just a few days before.

We had two devastating nursing home fires take place in Tennessee and Connecticut and, toward the end of the year, the California wildland fires.

We’ve had to marshal our resources to address all of these issues.

Secondly, we’ve seen a great milestone achieved with California’s adoption of NFPA 5000 and NFPA 1, which is an advance that no one could have imagined a year or two or three ago. This firmly establishes the building code as part of the NFPA family of codes.

We have taken a more aggressive role in advocating change, including calling for all nursing homes to have fire sprinklers.

All of these things have made it quite a year for NFPA.

What are some of the lessons NFPA has learned from the tragedies in 2003?
Unfortunately, it has always been the case that advances in safety tend to come after big tragedies. That was true after the Triangle Shirtwaist fire in New York in the early part of the twentieth century. It was true following the Cocoanut Grove fire in Boston, in the 1940s. We could cite several other examples. The philosophy that NFPA has always lived by is we have to do everything we can when one of these tragedies occurs to learn the lessons and apply them so the tragedies don’t happen again.

Was there a response from NFPA in 2003 that you were particularly proud of?
The response after the Station nightclub fire and the Chicago nightclub crowd crush. We called together the Technical Committee on Assembly Occupancies and Membrane Structures and had them hear public testimony and begin the process of considering amendments to NFPA 101, Life Safety Code, which were adopted very quickly and became part of the code. This is just a great example of how the NFPA system works.

Do you think that happened quicker than expected?
It’s very difficult to achieve consensus sometimes, but when there’s an urgent need like there was in these cases, our system is flexible enough to respond quickly.

I’m very proud of everybody—our volunteers, of course, who serve on our committees and the Standards Council, and our staff, who had a hand in making sure we addressed these issues expeditiously.

How significant were the California wildland fires to NFPA?
It was a huge event, not only in the history of California, but in the history of fire in America. It was a massive fire that obliterated 800,000 acres, 3,500 homes were destroyed, and 22 people were killed. It also raises some serious questions that NFPA has been examin-

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MAILCALL

BUILDING CODE PROCESS
Your article on the future California Building Code ["California Bound," November/December 2003] may have been premature. As anyone familiar with the code adoption process in California knows, it’s a complex and lengthy process like NFPA’s own code development process. No statewide code is “adopted” until the final vote of the California Building Standards Commission (CBSC) which follows a period of “notice” and (multiple) “hearings,” numerous state amendments recommended by CBSC Advisory Committees and agencies, and consideration of written comments by those ultimately affected, including local governments and the public.

The CBSC vote in July 2003 was to start the process....

On November 18, 2003, Governor Schwarzenegger issued Executive Order S-2-03 directing the immediate halt to all regulatory activity in the state. The order further instructs each agency, including the CBSC, to reassess any prior regulatory action since 1999. Thus, the vote to begin the building code adoption process and use NFPA 5000™, Building Construction and Safety Code™ as the basis for the state building code will be subject to reconsideration. Agencies have until May 2004 to do so. New appointees to the CBSC will be in place over the next few months, and thus the outcome is not certain. The Office of Administrative Law and the Legal Affairs Secretary, following the Executive Order, will review any action by the CBSC. Consequently, the meeting of the CBSC scheduled for November 20, 2003, to report on the progress of the building code adoption was canceled.

THOMAS G. DALY
HILTON HOTELS CORPORATION

NFPA RESPONDS:
In contrast to the above letter, the process of utilizing NFPA 5000™, Building Construction and Safety Code™ and NFPA 1, Uniform Fire Code™ as the basis for California’s building and fire codes continues to move forward. NFPA, through our Sacramento office, is working closely with four key state agencies to develop the appropriate state-specific amendments for both model codes. As those familiar with California’s historical code adoption process understand, the state has always made significant amendments to adopted model building or fire codes in order to best meet the needs of California. That’s why NFPA has already committed significant amounts of staff time to assist the agencies during the important amendment stage of the adoption process. And we will continue to support the state’s efforts to strengthen public safety.

The California Building Standards Commission selected NFPA’s model codes after a comprehensive review of the available codes was conducted by the state. That review demonstrated that NFPA codes would provide a higher level of safety for the people of California. We would certainly expect that future decisions about the state’s model building and fire codes will continue to be based on what is in the best interests of public safety.

GARY KEITH
VICE-PRESIDENT, BUILDING & LIFE SAFETY/REGIONAL OPERATIONS

TRANSITION QUESTION
I read with interest in the October 2003 issue of NFPA Journal® the account on page 14 [in “Firewatch”] of the residential fire where, evidently, there was a smoldering-to-flaming transition. I wonder whether the investigators of the fire identified the factor that caused the transition.

Most commonly, smoldering-to-flaming transitions are due to enhanced oxygen supply. For example, if a carpet or piece of upholstered furniture is smoldering and a door is broken down to enable the fire crew to enter, the oxygen admitted might cause such a transition. This is a well-known effect in firefighting. However, in the case study referred to, it’s difficult to see how an enhancement of oxygen availability could have occurred, and there might well be another reason for the change in combustion-propagation behavior.

The most likely cause is warming of the surroundings. The initial conditions—that is, those at ignition—are relevant to whether smoldering or flaming will ensue. About 10 years ago, a colleague and I discovered that Casuarina needles from an Australian forest floor will reproducibly flame out-of-doors in summer and reproducibly smolder, all other conditions being the same, in winter. See Hughes, K.C., and Jones, J.C., “Sensible heat effects in the propagation of combustion waves through packed beds of Casuarina needles,” Journal of Fire Sciences, Volume 12, pp. 499-502, 1994.

What might well have happened in the residential fire under consideration is that gradual warming of the surroundings caused the smoldering-to-flaming transition with its tragic results. Did the investigators consider this?

J.C. JONES
DEPARTMENT OF ENGINEERING
UNIVERSITY OF ABERDEEN, UK

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Author Ken Tremblay contacts the officials responsible for investigating the fires to ask for their reports.

We limit "Firewatch" to brief descriptions of past incidents, highlighting their important characteristics and omitting any discussion of the larger context in which they occurred and were investigated. Thank you for your interest and input on this issue.

UNCONVENTIONAL EVACUATION

I read with great interest the "New Way Out Ideas" by Joseph Zicherman, Ph.D., in the November/December 2003 issue of NFPA Journal, and I would like to contribute more information on such egress devices, whereby we can all learn from each other's experiences and share the best practices.

It's my opinion that those unconventional emergency-evacuation measures and products mentioned in the article do provide possible solutions in life-and-death situations, even though some building-safety professionals may not condone their use. However, the potential buyers of such devices should assess the strengths and weaknesses of...each system and its suitability for their building-exit strategies.

High-rise occupants are accustomed to the conventional use of elevators and stairs in gaining access and egress. However, has any research group studied how occupants would cope with feelings of insecurity in the event of the worst scenario: elevators aren't working, and one or more stairways is impassable in a large-scale evacuation? Would they risk injury and attempt to use unconventional methods, if available, to get out alive?

The use of an escape-chute system may be new or unfamiliar in some countries, but the concept of an escape chute was developed more than a hundred years ago. With the advancement in technology and innovation, several versions of escape chutes are being developed and patented worldwide that permit mass, rapid evacuation from high-rise structures during life-threatening emergencies. As the escape chute can be installed at strategic locations and heights within the structure, it will operate even if the electrical supply to a building is lost during a fire; it is intended as a supplement to the existing egress, providing redundancy.

While the idea of a chute evacuation may not be something that is very...
appealing to some people, it has slowly gained popularity. Given that elevators are unsafe for fire egress, and stair travel is taxing and potentially dangerous for the aged and the disabled, evacuation via escape chutes provides the answer to make means of egress available to all people. The innovative applications in escape-chute technologies have enabled designers and architects to have a new way of thinking about egress design to meet performance-based specifications.

As in all evacuation plans, first responders, building managers, and even tenants would need to be trained and drilled in how to use the escape-chute system safely. With frequent drills, evacuees will even feel safer descending the long chute than negotiating the long flight of stairs during mass evacuation.

Currently, there are no standards for the design and construction of escape chutes or similar devices. Would a life-saving chute need to be constructed with fire-resistant materials to protect the users once inside the tube? Should it be designed to safeguard those who are most vulnerable in an emergency: children, the elderly, the injured, and the disabled? Should the chute be designed to allow the users to have the ability to control the speed of their own descent? Should it also be designed to allow external means to control the speed of one’s descent? Should it be manufactured in conformance to its performance as tested by a fire-research institute? Finally, when a chute is installed in a fixed location whereby building occupants recognize that it is meant for emergency use only, should such egress provision be considered as an emergency exit?

Given that the potential for building emergencies is worldwide, it’s appropriate to address these evacuation issues in the global context. Would NFPA and ISO consider initiating the lead to conduct a comprehensive risk assessment on the use of escape chutes and elevators to minimize the time taken for occupants to egress buildings during emergencies?

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Call for fire sprinklers

JAMES SHANNON, PRESIDENT and CEO of NFPA, has called for all nursing homes in the United States to be equipped with fire sprinklers. His statement came as a result of two nursing-home fires in Connecticut and Tennessee that killed 24 people.

Shannon says that, although the nursing-home industry has made great strides in recent years to ensure residents are safe in the event of fire, more must be done. NFPA 101®. Life Safety Code®, already requires fire sprinklers in all new and many existing nursing homes, but Shannon says they must be added to the fire-protection package provided by existing codes and standards where they're not yet required. He says nursing homes should be protected with more stringent fire-protection features because their residents are much less capable of saving themselves from fire than the general public.

According to NFPA research, fire sprinklers cut the chances of dying in a structure fire by one-half to two-thirds, compared to fires where sprinklers are not present. When measured by the average number of deaths per thousand fires in properties that care for the aged or sick between 1994 and 1998, the reduction associated with sprinklers was 82 percent. Unfortunately, one-quarter of all nursing-home fires occur in facilities that are not sprinklered, and it's estimated that, overall, 10 to 15 percent of all nursing homes have no fire sprinklers.

Shannon's call for action is independent of, and doesn't interfere with, NFPA's time-honored consensus code-development process. Rather, it reflects NFPA's mission-driven commitment to espouse proven fire-safety principles for the greater public good.

In addition, Scott Adams of the International Fire Marshals Association has proposed a Tentative Interim Amendment to NFPA 101 that would add a new 19.3.5.1.1 to read: "19.3.5.1.1 Buildings containing nursing homes shall be protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7, unless otherwise permitted by 19.3.5.3."

The Standards Council will then review the technical committees' ballot results, the public comments, and any other information that has been submitted to determine whether to issue the TIA at its meeting on January 14-16, 2004.

Air system standard proposed

THE STANDARDS COUNCIL has received requests to establish two new projects. The first is intended to support performance-based design initiatives for fire loads. Although NFPA and Society of Fire Protection Engineers' handbooks cover this subject, the requester feels that the data and criteria are more likely to be used if they can be codified in an NFPA standard.

The second request is to develop a standard for firefighter breathing-air systems. Such high-pressure systems are designed to quickly fill self-contained breathing apparatus; they aren't medical gas systems. Although several cities currently have firefighter breathing-air system ordinances, lack of a nationally recognized installation standard may allow some jurisdictions to use substandard materials.

Anyone interested in commenting on these proposed projects is invited to do so in writing. Please include information on resources, the names of those interested in participating on the committees, the names of other organizations actively involved with these subjects, and reasons the project is needed. Responses should be sent to Codes and Standards Administration, NFPA, One Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101.

New book examines 'Rookie Year'

SHARE FIREFIGHTER STORIES of dreams realized, bravery tested, and lives saved in "Rookie Year," a new book published by NFPA. "Rookie Year" brings you face to face with 12 paid and volunteer firefighters as they engage in their challenging and demanding profession. The 144-page book gives you a front-row seat as the men and women tell what it feels like to enter a burning building for the first time, how they cope on the bad days, and how they revel in the excitement of the good days.

Valuable appendices provide practical fire-service information and resources, including "Career Opportunities for Fire Fighters, EMTs, and Paramedics" from the 2002-2003 Bureau of Labor Statistics Occupational Outlook Handbook; the text of NFPA 1001, Fire Fighter Professional Qualifications; and a list of U.S. fire-service organizations. To order a copy, go to www.nfpa.org/catalog.
2003 NFPA Teacher of the Year announced

THE WINNER OF the 2003 NFPA Teacher of the Year Award is Rae McMullen, a third- and fourth-grade teacher at the Chris Akkerman Elementary School in Calgary, Alberta, Canada. McMullen has taught NFPA's *Risk Watch*® program in her classroom since 1999. Before that, she used NFPA's *Learn Not to Burn*® program.

A teacher for 14 years, McMullen integrates Risk Watch into as many subjects as she can and uses every "teachable moment" to emphasize injury-prevention messages. She empowers her students to take responsibility for their environment, both at home and school. They make sure the school hallways are clear of fall hazards and take home caregiver letters, checklists, and informational sheets to help encourage their parents to reinforce the safety messages they learn at school.

Students cut out newspaper articles whenever there is a news event about a subject the *Risk Watch* programs cover and hang them in the classroom under the corresponding *Risk Watch* poster. Events involving children in particular are discussed to reinforce the importance of making safe choices.

McMullen was nominated by her husband Ken, a member of the Alberta Fire Commissioners Office and of the Alberta Risk Watch Champion Management Team. The couple received an expense-paid trip to NFPA's Fall Meeting in Reno, Nevada, in November 2003, where she was presented with an award and a selection of NFPA educational materials.

Home fires from candles reach high

THE NUMBER OF home fires caused by candles has soared in recent years, jumping a startling 20 percent between 1998 and 1999, the most recent year for which statistics are available.

According to NFPA's Research and Analysis Division, 1999 marked a 20-year high for candle fires in the home. That year, an estimated 15,040 home candle fires caused 102 deaths and $278 million in damage. They also resulted in 1,473 injuries, a 33 percent increase over the previous year. In 1990, only 5,460 home fires were attributed to candles.

Home candle fires are more common in the winter. In 1999, there were almost twice as many home candle fires in December as there were in an average month. They peaked on Christmas Day, when they accounted for 10 percent of home fires, followed by New Year's Day and Christmas Eve.

In four out of 10 fires, the candles were left unattended, were abandoned, or were inadequately controlled. In one in four fires, a combustible object was left too close to the flame.

Four out of 10 home candle fires start in the bedroom, and two out of 10 begin in common rooms, such as the living room, family room, or den. The most common item first ignited is a mattress or bedding, except in December, when decorations are the most common item first ignited. For copies of the report, go to www.nfpa.org/Research/NFPAFactSheets.

ALABAMA ADOPTS NFPA 1 AND NFPA 101


By adopting the 2003 edition of the NFPA 1, UFC, and the *Life Safety Code*, Alabama has implemented codes that are designed to ensure the highest degree of public safety from hazards caused by fire and explosion. They address basic fire prevention requirements and reference or extract the fire-prevention and -protection aspects of many other NFPA codes and standards.

Used in every U.S. state and adopted statewide in 35 states, NFPA 101 addresses minimum building design, construction, operation, and maintenance requirements necessary to protect building occupants from danger caused by fire, smoke, and toxic fumes.
# Assembly

**Fire sprinkler extinguishes museum fire**

ARIZONA—A single fire sprinkler activated and extinguished a fire in a history museum, keeping property damage to a minimum. The building’s fire-alarm system also alerted the fire department, which responded within minutes.

The single-story, steel-frame building had concrete walls and floors. Smoke detectors and full-coverage wet-pipe fire sprinklers were connected to the fire-alarm system. At the time of the fire, the museum was open to the public.

The fire began in a food station when a cloth drape touched a warming candle. The heat activated the fire sprinkler and sounded the alarm at 8:20 a.m. An employee responding to the alarm discovered the smoke and called 911. The fire sprinkler extinguished the fire before the fire department arrived.

Damage to the building and its contents, valued at $2 million each, was only $10,000. No one was injured.

# Mercantile

**Firefighters forced to defensive attack due to fire spread**

GEORGIA—A building housing offices was destroyed by fire, as firefighters fought the fire defensively as it spread to the attic and crawl space below. Using multiple hose lines, firefighters tried to enter the building from two different locations to prevent fire spread into a warehouse. They were forced out by the threat of collapse.

The commercial building measured 54 feet in width by 115 feet in length and was a single story in height. Closed for the night, the building did not contain a fire-detection or suppression system. Details on building construction weren’t reported.

Firefighters arrived three minutes after a call reporting a building fire at 5:38 a.m. and found heavy smoke and fire coming from each end of the building’s attic space. Firefighters deployed several hose lines and quickly gained access to the interior of the building, but were turned back as the fire had engulfed the attic space. Additional resources were called, and hose lines were repositioned to protect several dwellings and an automotive-repair shop some 20 feet away. Large-diameter hoses and ladder pipes were used, as flames spread rapidly through the building, further enhanced by an explosion of a propane gas cylinder in the warehouse area. Eventually the building collapsed and was a total loss. The property was valued at $260,000 and had contents of $1,750,000. There were no injuries.

# Residential

**Overheated chimney ignites bird’s nest**

MASSACHUSETTS—Built-up creosote in the chimney flue of a single-family home ignited after the homeowner started a fire in the fireplace, and the heat ignited a bird’s nest in the attic.
The 2 1/2-story, wood-frame house was 35 feet (11 meters) long and 25 feet (8 meters) wide, and had an asphalt-shingle roof. Battery-operated smoke alarms had been installed on each floor, including the basement, but none of them operated since the fire was confined to the flue and the attic. The structure was unsprinklered.

The double-walled metal flue was encased in a wood frame sheathed with aluminum. When the flue overheated and ignited the nest around 5 p.m., the fire spread from there to the wood framing around the chimney and to structural framing in the attic.

Firefighters on an aerial ladder extinguished the fire on portions of the roof, while interior companies fought the fire from the attic. A dormer added to the house made access to the flue difficult.

Damage to the building, valued at $260,000, was estimated at $5,000. Damage to its contents, valued at $20,000, was estimated at $1,000. There were no injuries.

**Smoke alarm alerts occupant**

RHODE ISLAND—Smoke from a fast-moving fire in the living room of an apartment in a three-family house activated a smoke alarm, alerting the structure's occupant.

The three-story, wood-frame dwelling measured 30 feet (9 meters) by 26 feet (8 meters). Battery-operated smoke alarms had been installed in the apartment of origin, but there were no fire sprinklers.

The fire began around 10 a.m. when radiant heat from a portable electric space heater on a living-room coffee table ignited the fabric of two couches. A smoke alarm alerted the occupant, who tried to control the fire with a portable fire extinguisher until smoke forced him from the room. The fire caused the apartment's windows to fail, and the exterior wood siding ignited before the fire department arrived.

Fire companies used master streams to knock down the heavy fire, then completed extinguishment using several hose lines on each floor. The $200,000 building and its contents, valued at $40,000, were destroyed. There were no injuries.

**Fire sprinkler extinguishes cooking fire**

WASHINGTON—A single fire sprinkler limited fire losses when an occupant of an apartment in a three-story building inadvertently turned the burner on under a pot of cooking oil and left the apartment. The building's monitored water-flow detector system activated the building's fire alarm and notified the fire department.

The wood-frame building, which measured 130 feet (40 meters) by 50 feet (15 meters), contained 12 two- and three-bedroom units. Manual pull stations and smoke alarms had been installed in compliance with a local ordinance, and emergency plans had been distributed to residents. Although he wasn't required to, the building's owner had also installed a residential wet-pipe fire-sprinkler system that provided full coverage.

A central station alarm company monitored water-flow detector system alerts for the building. The fire department responded to the alarm and extinguished the blaze on portions of the roof, while interior companies fought the fire from the attic. A dormer added to the house made access to the flue difficult.

Damage to the building, valued at $260,000, was estimated at $5,000. Damage to its contents, valued at $20,000, was estimated at $1,000. There were no injuries.

**Fire damages dorm**

NORTH CAROLINA—Around 1:30 a.m., two students were discovered burning books outside their dormitory. When told to extinguish the blaze, the two dumped snow on the partially burned books, then put the books and ashes in a recycling bin next to the building. During the evening, winds gusting from 30 to 40 miles (48 to 64 kilometers) per hour fanned the ashes, which ignited the bin. The fire then spread to the building's wooden exterior.

The two-story, wood-frame dormitory was one of four buildings laid out around a 100-foot (30-meter) by 100-
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large manufacturing plant after it closed for the night, containing the.

NEW YORK—Four fire sprinklers controlled a fire in the storeroom of a large manufacturing plant after it closed for the night, containing the blaze until firefighters extinguished it.

The steel-frame building was two stories high but had only a single level that covered 107,000 square feet (9,940 square meters). It had metal walls and a metal roof supported by steel bar joists. The storeroom, located 10 feet (3 meters) above the main floor, was 20 feet (6 meters) long, 10 feet (3 meters) wide, and 6 feet (2 meters) high. It had no ceiling. A full-coverage wet-pipe fire-sprinkler system supported by three automatic fire pumps was connected to the municipal alarm system.

Firefighters responded to the automatic alarm at 5:27 a.m., arriving within four minutes to find the fire sprinklers confining the fire to the storeroom. They used a 1 3/4-inch hose line to extinguish burning cardboard boxes and foam samples stored on lower shelves that were partially shielded from the fire-sprinkler spray.

The fire originated in a fluorescent light fixture in the storeroom. One end of the fixture melted, and molten metal dripped onto the boxes, igniting them. Damage to the building, valued at $6.2 million, and to its contents, valued at $1 million, was estimated at $5,000 and $45,000, respectively. There were no injuries.

BOARD & CARE

 smoking leads to death

SOUTH CAROLINA—A 74-year-old man who lived in a residential care facility died of burns a day after he ignited his clothing while smoking in bed.

The single-story, wood-frame facility had concrete-block walls and an asphalt-shingle roof. Battery-operated smoke alarms had been installed, but their locations and coverage weren’t reported. There were 14 residents and one caregiver in the unsprinklered building at the time of the fire.

The fire department received a 911 call at 2:09 p.m. from an occupant, who reported that a man was on fire. When they arrived at the facility, fire-fighters found the severely burned man in a chair outside and the other occupants evacuating the building.

When the sole staff member told them she couldn’t account for all the patients and that the fire might still be burning, fire crews entered the building with a hose line and conducted a primary search. They extinguished the burning bedding and mattress in the victim’s room and removed another occupant from the structure.

Investigators determined that the victim, who’d been admitted to the facility a few days earlier, was smoking in bed when he ignited his clothing. The staff had told him that he couldn’t smoke, but he’d apparently hidden matches and cigarettes on his person.

The staff member tried to extinguish the fire by putting blankets on the victim, before she went to evacuate other residents. When she returned, however, she discovered the blanket had caught fire. She managed to evacuate the burned man from the building.

The fire department found that the lack of adequate staff during the fire prevented a complete evacuation and accounting of all the residents. The staff member was unable to locate the victim’s records before he was taken to the hospital, hindering his treatment by emergency medical crews.

Fire damage was limited to the room of origin, although there was some smoke damage throughout the building. Losses to the structure were estimated at $2,500; damage to its contents was estimated at $1,000.

UTILITY

 protection systems control fire

MICHIGAN—A fire in a transformer at a nuclear power plant was cooled by automatic suppression systems, until the utility’s private fire brigade could extinguish it.

The 345-kilovolt, three-phase transformer, located outside the plant, used
Investigators discovered that the fire started on the floor of the market between the cash registers and a refrigeration unit near the wall that separated the supermarket and automobile shop. They determined that a malfunction in the electrical wiring caused the fire, which heavily damaged the supermarket, the church, and the automobile shop. Smoke and heat damaged all the other occupancies to some extent.

Damage to the building and its contents was estimated at $500,000 and $606,000, respectively. Three firefighters suffered stress-related injuries.

High winds helped spread this fire at a college dormitory in North Carolina. No one was injured in the blaze, which originated in a recycling bin adjacent to the two-story dormitory.

mineral oil as a coolant. A heat-detection system and an open-nozzle, pre-action deluge water system monitored by the main control room protected the facility. The plant was operating at full capacity when the fire occurred.

The heat-detection system activated at 8:10 p.m., and the control room alerted the plant fire brigade and the local fire department. Using foam, the fire brigade brought the blaze under control in about 35 minutes. The local fire department also responded but didn’t participate in the firefighting.

The plant activated its emergency plan, notifying the necessary authorities that the transformer’s safety features had functioned as designed and automatically shut down the turbine and reactor.

Property damage was estimated at $4 million. A 30-year-old security guard was injured when he fell, and he suffered from smoke inhalation.

MERCANTILE

**Fire damages mall**

**TEXAS**—A fire that started in a supermarket approximately 15 minutes after the owner locked up for the evening heavily damaged the market and several other businesses in a strip mall.

The single-story, metal-frame mall building contained stores of various sizes and types in an area of 24,000 square feet (2,230 square meters). The structure, built on a concrete slab, had wood and light metal walls and a flat, steel-truss roof covered with rolled roofing. There were no smoke detectors or fire sprinklers.

A driver for a pizza store, the only mall business still operating that night, discovered a small fire along the wall of the store as he returned from a run and called 911 to report it. The supermarket’s owner had just closed the store, turned off the exterior lights and some interior breakers, and set the burglar alarm before leaving at approximately 8:50 p.m.

Firefighters found the supermarket heavily involved in fire, which was spreading to an automobile customizing shop, a church, a barbershop, a restaurant, the pizza shop, a beauty salon, and two vacant stores.

STORAGE

Fire destroys aircraft hangar

**CALIFORNIA**—A metal aircraft hangar containing a fixed-wing plane and a glider was destroyed when heat from a fire caused it to collapse. The fire may have been burning for some time when a passerby discovered it, since the building had no fire-detection or suppression systems.

Built on a slab foundation, the single-story, steel-frame hangar had metal walls, a metal roof, and partition walls that divided the building into several sections that could be sublet. However, the walls didn’t extend to the ceiling.

Responding to a 911 call at 7:10 p.m., fire crews arrived seven minutes later to find the building well involved in fire, its metal walls glowing red from the heat and flames venting through the roof. The incident commander called several other fire departments to help extinguish the fire, but the hangar and its contents were destroyed.

Investigators determined that the fire started under a wood-frame mezzanine in the hangar, but they were unable to locate the ignition source. Losses were estimated at $400,000 for the building and $500,000 for its contents. There were no injuries.
Meeting a wide range of seminar program needs

NFPA and James G. Stallcup, consultant and author of the widely used "how-to" guides Stallcup’s Electrical Design Book and Stallcup’s Electrical Calculations Simplified, are offering a three-day “Designing Electrical Systems” seminar in Irving, Texas, from February 25 to 27 and in Las Vegas, Nevada, from March 10 to 12.

This seminar explains the requirements of the National Electrical Code® (NEC®) using detailed illustrations and sample calculations. Among other things, Stallcup will help you simplify calculations and pass plan examinations and inspections. You’ll also learn how to apply NEC companion standards; design and install electrical wiring systems and equipment that comply with NEC rules; and evaluate energy conservation and anticipated load growth.

NFPA & JCAHO Partnership

Continuing in March of 2004, NFPA and the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) will once again offer the three-day seminar entitled “Applying NFPA 101®, Life Safety Code® to the JCAHO Statement of Conditions.” The first seminar will be held on March 2-4, 2004, at the Crowne Plaza Orlando Airport in Orlando, Florida. The remaining two seminars will be held at the respective organizations’ headquarters; April 14-16, 2004, at the NFPA headquarters in Quincy, Massachusetts, and May 11-13, 2004, at the JCAHO Conference Center in Oakbrook Terrace, Illinois.

Professionals who are concerned with life safety in healthcare occupancies would benefit from this program, including hospital engineers, facility managers, safety directors, and administrators responsible for JCAHO compliance. By participating in this seminar, you will gain an understanding of the seven components of the EC standards and you will come to understand the Life Safety Code as it is applied to healthcare occupancies.

nefforum

Those involved in the electrical industry will want to attend the nefforum, which will be held at the 2004 NFPA World Safety Conference and Exposition® (WSCE) in Salt Lake City, Utah, from May 23 to 26.

New for this year, the nefforum is offering a special electrical pavilion within the exposition hall featuring products and services used in the design, installation, and maintenance of electrical systems and equipment. In addition, there will be an “Ask the Expert” area within the electrical pavilion where electrical experts will be available to answer all your technical questions.

If you’re attending the nefforum, you may want to participate in the code panel reports and electrical section codes and standards review, on Tuesday, May 24. This special meeting is where issues pertaining to the NEC are discussed and strategies are developed prior to the WSCE technical committee report session, where the 50th edition of the NEC will be brought up for vote.

World Safety Conference and Exposition

There will be 10 intensive pre-conference seminars prior to this year’s WSCE, for which you may register separately. These one- and two-day seminars offer in-depth instruction for professionals engaged in the areas of fire and life safety, as well as electrical.

The Certified Fire Protection Specialist two-day primer is being offered at this year’s WSCE. You’ll gain valuable information and skills important for understanding the NFPA Fire Protection Handbook during this important seminar. The CFPS primer also offers an opportunity to prepare for the CFPS examination. The CFPS examination is going to be available at the WSCE for those who meet specific criteria and sign up in advance. The CFPS credential is internationally recognized as a mark of achievement within the fire-protection field. Visit www.nfpa.org/certification for further information regarding NFPA’s certification programs.

For those interested in security, the WSCE is proudly introducing a dedicated security pavilion within its exposition. This pavilion will feature the latest in security products and systems to protect people and property. Exhibitors at this pavilion are among 250-plus exhibitors currently planning to participate in the exposition, giving you an opportunity to find solutions to your fire-protection, life-safety, and electrical challenges with the most up-to-date products and services available today.

The most up-to-date information is available at www.nfpa.org/meetings. For more information regarding NFPA seminars, please visit www.nfpalearn.org.

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In the United States, there’s probably no fire sprinkler issue more significant than the proposed federal tax initiative. Introduced in the House in April 2003 as the Fire Sprinkler Incentive Act of 2003, H.R. 1824 was joined in July by its Senate companion S. 1566, the Fire Safety Incentive Act of 2003. The bills were assigned to the House Ways and Means and the Senate Finance Committees, and the legislation now has nearly 100 Republican and Democratic co-sponsors.

Changing allowances
The proposed legislation would change the depreciation allowances for the cost of installing fire sprinkler systems in new and existing buildings. In accordance with the Internal Revenue Code, such allowances are determined using the Modified Accelerated Cost Recovery System, which allow owners to depreciate different assets or items of property at different rates when determining taxes owed and to deduct the cost of the property or assets from their business profits.

At present, fire sprinkler systems are tied to the depreciation schedule of the building in which they’re installed. For commercial buildings, the recovery period is 39 years. For residential buildings, it’s 27.5 years. The proposed legislation would allow a five-year recovery period for sprinkler installations, whether they comply with NFPA 13, Installation of Sprinkler Systems; NFPA 13R, Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height; or NFPA 13D, Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes.

This five-year recovery period would create a powerful incentive for building owners to install fire-sprinkler systems, since it would increase their yearly depreciation expense, thereby decreasing their taxable income.

The House and Senate’s Joint Tax Committee finished estimating the legislation’s tax impact in October and will report its findings to Congress in 2004.

Retrofitting existing buildings
The tax incentive is especially helpful for retrofitting existing buildings. In fact, H.R. 1824 was introduced by Representatives Curt Weldon (R-PA) and James Langevin (D-RI) in the wake of The Station nightclub fire in Rhode Island, which left 100 dead, amid a call for sprinkler protection of all such facilities.

The Station fire also spurred the NFPA Technical Committee on Assembly Occupancies to process an emergency amendment to NFPA 101®, Life Safety Code®, in 2003, requiring fire sprinklers in all existing nightclubs that hold more than 100 occupants. Later in the year, NFPA responded to tragic nursing-home fires by calling for sprinkler retrofits of all existing nursing homes. And cities across the country, including New York and Chicago, are now moving forward with major initiatives to require fire sprinkler system retrofits in high-rise buildings.

I urge you to let your congressional representatives know you support the fire sprinkler tax-incentive legislation. One convenient way is to use the “Cap Wiz” notification system available at no charge through the National Fire Sprinkler Association’s Web site, www.nfsa.org. Click on the “Fire Sprinkler Incentive Act” box for access to the system and to special updates on the progress of the legislation.

Fire sprinklers provide major benefits, but installing them costs money. By revising the tax code, we can help ease the financial burden on building owners who want to improve fire safety in their facilities.
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As the U.S. population ages, more people are moving into nursing homes. When this trend first began to accelerate in the 1960s and 1970s, several large loss-of-life fires in these occupancies led many states to require the installation of fire-sprinkler systems to protect all new and existing facilities. The result was truly a life-safety success story: large loss-of-life nursing-home fires virtually disappeared in those states.

Unfortunately, other states never mandated fire sprinklers for those occupancies, and large loss-of-life nursing-home fires continue to occur today as a result.

Health-care occupancies present emergency responders with a unique set of tactical problems. Many of their occupants are immobile, partially incapacitated, or in an altered state of consciousness due to sleep, illness, or medication. They spend 24 hours a day, seven days a week, in areas containing a high-potential fuel load of combustibles and oxygen, while other hazardous areas, such as laundries, storage areas, kitchens, operating rooms, outpatient centers, offices, and laboratories, aren’t occupied outside normal business hours.

In addition, many nursing homes and most hospitals are large, complex buildings, with a mixture of construction types and layouts that can confuse patients and firefighters alike. At Good Samaritan Hospital in Cincinnati, Ohio, for example, additions were built on a downhill grade, so that the ground level of the newest section is six stories below the first floor of the original section. The floors were then re-numbered to correspond to the floor levels in the addition, making the first floor of the oldest part of the hospital the sixth floor. In such cases, it’s difficult to find a specific room without employee assistance or a pre-fire plan drawing. For fire departments, a response to the wrong access point could place a fire company blocks away from the fire.

For these and other reasons, health-care facilities must comply with codes designating the minimum number of staffers that must be on duty at all times. The codes also require that the staff be trained to execute an evacuation plan, which includes moving patients to areas of refuge and closing fire doors to reduce smoke and heat infiltration into patient rooms. This tactic is often referred to as “defend-in-place.” On rare occasions, it may be necessary to move patients completely out of the building, a process that may require the work of several fire companies.

The best tactical option for ensuring the occupants’ fire safety is extinguishment. While the nursing staff moves patients to areas of refuge and closes fire doors, firefighters must immediately begin to extinguish the blaze. They should also evaluate the fire-scene conditions and the actions the facility’s staff has taken, and determine whether further movement of patients is necessary.

Fortunately, patient areas in many hospitals and nursing homes are subdivided into small rooms by built-in fire separations. A fire in these rooms can often be controlled with one or two hose lines from the building’s standpipe system, or, in buildings without standpipes, a standard pre-connected line from a pumper.

Fires in unoccupied areas pose another problem, as they may remain undiscovered until they’ve grown quite large unless the building is protected by an approved automatic alarm or fire-sprinkler system. Even small fires can produce heavy volumes of smoke, and nursing-home patients are less able than the general public to tolerate such conditions.

Firefighters and the health-care facility staff must work together to save the lives of the patients who depend on them. The most effective way to do this is to create a pre-incident plan and train together to implement it during an emergency.

This column is adapted from the book Structural Fire Fighting, which is available at www_nfpa,org or (800) 344-3555.
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NFPA’s full consensus process

Each May and November, NFPA members vote to adopt or reject revisions to hundreds of NFPA codes and standards, following the same consensus-based process used in creating the original document. The process can be complex, but it thrives because of NFPA’s full consensus approach.

What is a Report on Proposals (ROP)?
For three months following the call-for-proposals period, the technical committee responsible for a document holds meetings to consider the proposals submitted and to listen to anyone who wishes to address the committee regarding a proposed revision. The committee also develops its own proposals and incorporates them into its report, which must include the reasons for any proposal change or rejection. The committee’s report containing all the proposals submitted during that period is published and distributed to those requesting it and other interested parties.

The committee members vote to approve or reject their report in the ROP by letter ballot. If two-thirds of all eligible committee members approve the ROP, the process continues to the next step. If the ROP doesn’t receive two-thirds approval, it’s returned to committee for further study.

What is a Report on Comments (ROC)?
After the ROP has been approved, there’s a 60-day period during which the public may comment on its contents. At the end of that period, the committee reconvenes in a public meeting to decide how to act on the comments.

A two-thirds approval vote by letter ballot is again required for any actions on the comments, and the committee must again publish its reasons for revising or rejecting any public comments in the ROC, which is available for a seven-week review period.

What’s the next step?
The ROP and ROC are then submitted for open debate at NFPA’s membership meetings in May and November. Anyone, NFPA member or not, may attend the meeting and present his or her views on the ROP and ROC. However, only NFPA members of record for at least 180 days may vote on the adoption of the reports.

Can the report be amended at the meeting?
The only amendments that may be proposed from the floor are those previously published as proposals in the ROP or comments in the ROC. The proposer must be either the person who submitted the original proposal or comment, or an authorized representative.

Can the report be sent back to committee?
Anyone may propose that an entire report be returned to the committee for further study. And anyone may propose that a portion of an ROP or ROC revert to the wording of the previous edition of the document, assuming that portion of the document changed between the release of the ROP and the release of the ROC, as sometimes happens when a tentative interim amendment is adopted.

After the debate, an informed NFPA membership votes to recommend approving or amending the report, returning a portion of the report to the committee, or returning the entire report to the committee. The technical committee then votes on any amendments made at the NFPA annual meeting. It’s up to the NFPA Standards Council to actually adopt an NFPA document based on the entire record before it, including the membership’s vote at the spring or fall meeting. Anyone wishing to appeal an Association action on a Technical Committee Report (TCR) must file it with the Standards Council no later than 20 days after the TCR Session. The Standards Council considers all appeals.

What standards were approved at the Fall Education Session?
The following codes and standards reports were accepted at the Technical Committee Report Session at the NFPA Fall Education Conference in Reno, Nevada, on November 19, 2003:

- NFPA 85, Boiler and Combustion Systems Hazards Code
- NFPA 900, Building Energy Code
- NFPA 1600, Disaster/Emergency Management and Business Continuity Programs
- NFPA 497, Recommended Practice for the Classification of Flammable Liquids,

CONTINUED ON PAGE 75
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Concerns about homeland security have led everyone in the safety and security fields to reevaluate their responsibilities. Not just emergency responders, but building designers, building managers, security personnel, code writers, educators, and many others involved in the built environment. Planning for large-scale emergencies is complicated and involves the coordination of many parties.

While planning and training for large-scale disasters continue, however, we must continue to reinforce the basics of fire and life safety.

I was recently reminded of this need to reinforce the basics of fire and life safety in a very graphic way. I was attending a conference in a large hotel when the fire alarm system activated. At least, we thought it was the fire alarm. The sound level was very low, as there were no audible or visual alarm notification appliances in the large meeting room. We literally had to stop what we were doing to verify that the weak sound was, in fact, the fire alarm.

As we evacuated the building along with several other people from adjacent meeting rooms, we noticed that the hotel staff in the area wasn’t evacuateing occupants, but performing their usual tasks. After leaving the hotel, we proceeded across the entry drive and were standing on the lawn across from the main entry, listening to the fire department sirens, when a hotel employee came outside and “scolded” us, saying we should have stayed in the building until escorted out by the staff.

Intent of the alarm
The intent of a fire alarm is to notify people of an emergency so that they can take the appropriate action. For assembly occupancies, such as the hotel we were in, this means evacuating the building. NFPA 1, Uniform Fire Code™, (UFC), Section 10.5 states that “no person shall fail to leave a building when notified to do so when directed to leave by the AHJ as a result of a known or perceived emergency.” Although this section doesn’t mandate the evacuation of a building upon activation of the fire alarm system, the intent of the fire alarm is to notify persons of an emergency condition. The action to be taken upon that notification will vary with the occupancy. The intent is to evacuate in assembly occupancies, such as the meeting rooms we were in when the alarm activated.

Training needed
In addition, NFPA 101®, Life Safety Code® states in Section 13.7.6.1 that “the employees or attendants of assembly occupancies shall be trained and drilled in the duties they are to perform in case of fire, panic, or other emergency to effect orderly exiting.” The staff in this case did nothing.

A large part of our jobs as fire-safety professionals is educating people in the fundamentals of fire safety. This means teaching them what to do when the fire alarm sounds, when someone discovers a fire, when someone experiences a health emergency, or when any other emergency occurs. And those we educate are not only building occupants, but all levels of management, as well. If we can adequately explain the reasons why a certain behavior is necessary, people are more likely to perform those actions when the situation arises.

Planning for terrorism is important, but we must continue to stress the basics, too. People must have a firm foundation of basic fire-safety principles if they are to be able to participate effectively in our larger, more complicated plans.

This incident and many others like it demonstrate the need for mastering the basic principles of fire and life safety.
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When Leon Winston got the estimate from the Department of Veterans Affairs (VA) on the cost of bringing his homeless-veterans housing into compliance with NFPA 101®, Life Safety Code®, his jaw almost hit his desk. It was $380,000.

Winston had planned to spend $50,000 installing fire alarms and strobes in the six-unit San Francisco apartment building owned by Swords to Plowshares, the community group of which he is deputy director. That was all California required for a state license to use the building as a drug and alcohol rehabilitation facility. But $380,000?

Swords to Plowshares’ apartment building is one of the 180 facilities around the country the VA funds to temporarily house homeless vets. When the VA began awarding the grants in 1994, the facilities only had to meet local building codes. In December 2001, however, Congress passed the Homeless Veterans Assistance Act, which contained provisions strengthening existing VA programs and inaugurating new ones. One provision requires that community groups receiving transitional housing grants also meet the requirements of the Life Safety Code.

Soon after President Bush signed the bill, inspectors from VA medical centers looked at housing that providers such as Swords to Plowshares offered and compared its safety features to those required under the Life Safety Code. The VA in Washington then developed a “scope of work” order for each facility, which entailed more renovation for some than others.

“I was a bit blown away when I got that scope of work,” says Winston. “No one else in this area was doing the kinds of things to their structure that the VA was telling me I had to do.”

Among the improvements the VA told him he had to make were replacing exterior staircases and reconfiguring the landings in metal.

Working for a nonprofit group whose funds are tight, Winston might have hit the panic button. But he didn’t. When Congress put the Life Safety Code requirement into the 2001 legislation, it also told the VA it could make grants to housing providers so that they could afford to make the repairs. As a result, the VA is paying 100 percent of the costs for facilities that were receiving grants before the Homeless Vets Assistance Act was passed and 65 percent for facilities awarded their first grants in 2002 and after. In October, the VA announced it was giving $4 million to 28 community groups to help bring them into compliance with the Life Safety Code by 2006.

Not all of the providers of homeless-vets housing plan to improve their facilities as Winston does. The Life Safety Code section covering board-and-care facilities, which is the section VA providers must comply with, is complex, according to Phil Jose, chairman of the NFPA Board and Care Facilities Technical Committee and a safety and fire protection engineer with the VA. Even facilities that appear to be similar may have to do different things to comply with the code.

Chapters 32 and 33, which cover board-and-care facilities, were added to NFPA 101 in 1985 in response to the broad deinstitutionalization of mental patients in the United States. Chapters 32 and 33 outline the requirements for new and existing board-and-care facilities based on the size of the facility and the probable speed at which the residents will be able to evacuate—promptly, slowly, or not at all—based on their physical and mental conditions.

According to NFPA 101, most new facilities must be sprinklered, unless they’re no higher than two stories, have eight or fewer residents who can evacuate promptly, and are in the “new” category only because they’ve been converted from some other type of housing, such as an apartment building. However, some transitional housing providers have gone beyond the requirements of NFPA 101. Jim Hickman is the facilities director for Vietnam Veterans of San Diego, which gets VA grants for a 44-bed building in Escondido and two four-unit apartment buildings in southeast San Diego. Hickman is putting fire sprinklers and fire alarms into all three buildings, even though fire sprinklers aren’t required...
Evolving NFPA 72 for Homeland Security

The July 2002 release of President Bush's National Strategy for Homeland Security states that "an informed and proactive citizenry is an invaluable asset for our country in times of war and peace. Volunteers enhance community coordination and action, whether at the national or local level. This coordination will prove critical as we work to build the communication and delivery systems indispensable to our national effort to detect, prevent, and, if need be, respond to terrorist attack."

NFPA is and always has been the best example of volunteerism and professional service. And as such, the Association is poised to add our established codes and standards to the United States' security infrastructure.

Part of the vision outlined in the National Strategy for Homeland Security is to "create a fully integrated national emergency response system...." NFPA is playing a part in this system by coordinating the requirements of NFPA 72®, National Fire Alarm Code®, with the nation's security requirements in the area of mass notification.

In December 2002, the Department of Defense (DoD) developed uniform facilities criteria (UCFs), published as DoD Minimum Antiterrorism Standards for Buildings. In this UFC is the mass notification requirement, intended to provide a "timely means to notify [building] occupants of threats and instruct them what to do in response to those threats."

Myron Anderson, acting director of Technical Support for the Department of the Air Force, recently reported on the development of another UFC, "Design and O&M: Mass Notification Systems." According to Anderson, this document was designed to provide performance specifications to comply with the DoD UFC, and it intentionally included requirements similar to those of NFPA 72 to take advantage of available technologies and manufacturers.

In developing this UFC, however, the Air Force found that it "could not use any currently approved fire alarm system for mass notification while remaining in full compliance with NFPA 72. The mass notification system has an antiterrorism purpose that is sometimes in conflict with the basic functions of the building fire alarm system. Examples of these conflicts include: evacuation from the building may not be the appropriate choice for the occupants even if the fire alarm system has been activated; and temporary silencing of the fire alarm system might be necessary to provide directions and guidance to building occupants in a terrorism emergency."

As a result, the Air Force asked NFPA in June 2003 to develop standards for mass notification systems. Anderson believed that it might be possible to include in NFPA 72 requirements for mass notification and integration with building fire alarm systems. Some of the newer mass notification solutions apparently use equipment and methods NFPA 72 doesn't now address, and Anderson feels that it's essential that these systems interface with building fire alarm systems if they are to be effective.

In November 2003, the NFPA Standards Council considered the Air Force's request and voted to assign the work to the Signaling Systems Project.

In the wake of the Standards Council's decision, the Technical Correlating Committee (TCC) of NFPA 72 established a task group to ensure that the code meets the nation's security needs, as well as its fire-safety needs.

NFPA 72 Chapter 7, "Notification Appliances for Fire Alarm Systems," already contains requirements for the performance of notification-system appliances, including minimum sound levels for audible signaling and guidance to ensure voice intelligibility. Chapter 6, "Protected Premises Fire Alarm Systems," includes extensive system-level requirements for the operation and performance of emergency voice/alarm communication systems, as well as system-level requirements for combination systems that interface other systems. Finally, the common requirements of Chapter 4, "Fundamentals of Fire Alarm Systems," ensure reliable system performance and availability, while those of Chapter 10, "Inspection, Testing and Maintenance," are key to ensuring their ongoing performance.

The growth of integrated systems in general continues to be a driving force in the evolution of NFPA 72, and the inclusion of requirements for mass notification is the next logical step in the process.
Is it in the best interest of Americans to mandate that buildings be constructed like bunkers? If it is, then the cost of construction will have to rise dramatically. Also, amenities that we all desire will be greatly reduced or go away altogether. Somehow, we have to achieve balance between construction cost, the desired level of safety, and the usability of our buildings. Therefore, it’s important to review the philosophy of our codes.

The four goals for NFPA 5000™, Building Construction and Safety Code™, in Section 4.1.1 are to provide safety, health, building usability, and public welfare.

The safety goal is broken down to include safety from fire, safety from structural failure, safety during building use, and safety from hazardous materials. The safety-from-fire goal indicates that we’re to provide an environment inside a building that’s “reasonably safe” from fire and similar emergencies and that we’re to ensure the reasonable safety for firefighters and emergency responders.

Objectives for each goal are detailed in the code to explain to what extent the goals should be followed. For example, the safety goal has four objectives found in Section 4.1.3. The objectives indicate that the safety goal of this code is to “…reduce the probability of injury or death from fire, structural failure, and building use.” The code recognizes it’s important to reduce the probability of injury or death, but it may not be practical or possible to eliminate the probability.

The safety-from-fire objective makes four interesting statements that begin to quantify the level of safety being sought. Section 4.1.3.1.2.1 indicates that buildings must be designed and constructed to protect occupants “not intimate with the initial fire development” for a time sufficient enough to allow the occupants to evacuate, relocate, or defend in place. The next objective states that buildings must be designed and constructed to provide reasonable safety for firefighters and emergency responders during search-and-rescue operations.

Section 4.1.3.1.2.3 states that buildings must be designed and constructed to reasonably protect adjacent persons and buildings from injury, death, or substantial damage from fire. This section begins to provide guidance and direction on exterior wall construction requirements and opening protection requirements for exterior walls. Again, “reasonable” is used to tell us to mitigate hazards that have a likelihood of occurring.

The last objective for safety from fire tells us that buildings must be designed and constructed to provide reasonable access to the building for emergency responders.

The safety-from-structural-failure goal specifies that the building should be designed and constructed with a high level of confidence that there will be a low probability of structural failure resulting in a local or global collapse that could threaten life under any load or combination of loads that could reasonably be anticipated. This wording is extremely important because it sets minimum requirements for loading that can be expected to occur or are likely to occur.

The code specifically states that we’re to assume that multiple, simultaneous fire incidents will not occur. This statement is found in Section 4.2 of the code, and makes it clear that this code was developed assuming only a single fire source.

A single fire source equates to most occupancies having a minimum of two means of egress from rooms or spaces. If one exit is blocked by the single fire source, the other exit should be available for egress. If the code had been written around multiple fire sources, the number of means of egress required would exceed the number of fire sources by one more means of egress.

Almost immediately after the events on September 11, studies were undertaken to analyze why the Twin Towers collapsed, and how to improve the safety of tall buildings. While the FEMA study of that incident is completed, there are other more detailed studies underway. Once those studies have been finalized, I’m sure that there will be changes made to specific requirements within this code to improve evacuation or survivability, but we simply will never be able to mandate requirements that will alleviate all dangers and hazards associated with terrorism or acts of aggression.
Adoption support keeps everyone informed

"Communication, communication, communication." That's the number-one lesson Joe McElvaney, P.E., has learned as his city makes its way through the process of adopting NFPA 5000™, Building Construction and Safety Code®. McElvaney is the assistant to the building official for Phoenix, Arizona.

During his career, he has seen the adoption process change. "It used to be that adopting the next version of a code was a 'slam dunk,'" says McElvaney. But that's just not the case anymore.

When so many special-interest groups have a stake in the code that's adopted, building officials have to do a better job of letting people know they're welcome to participate in the process before a code is adopted to save headaches after the fact, says McElvaney. The lines of communication must stay open.

That's where NFPA comes in. To encourage participation in the code-adoption process, NFPA has developed a support system that's available to all cities, counties, and states interested in adopting NFPA 5000 or any other NFPA code.

For starters, we offer copies of NFPA 5000, in print or online, to anyone interested in seeing it. "It's so important to just have people take a look at the document," says Nancy McNabb, AIA, manager of NFPA's Building Code Central Field Office. Just looking at the document is the first step in realizing that it's "about health and safety, not necessarily uniformity."

In the future, McElvaney envisions a system in which procedures won't differ significantly from municipality to municipality. For now, though, NFPA 5000 has had some major success.

"NFPA is proud of California's endorsement of NFPA 5000, which has only been in existence for less than a year," says Gary Keith, vice-president of NFPA's Building Codes and Standards/Regional Operations. "The endorsement by California clearly shows the credibility and vitality of the document."

**NFPA's resources**

McElvaney is particularly happy with the services NFPA offers during the adoption process. Whenever he needed help, he says, he got it.

Besides sending copies of NFPA 5000 to any board or commission involved in the adoption process, NFPA also sends a staff person to give them an overview of the code and NFPA in general. And once the adoption process is under way, NFPA provides advisory assistance through its two field offices dedicated to the building code.

The managers of these field offices are available to answer questions and provide information about NFPA to any group during meetings or hearings. They are also available to provide educational training opportunities, says Ray Bizal, manager of NFPA's new Western Code Support Office in Sacramento, California. NFPA opened the office in Sacramento to assist state departments and agencies as they begin working with the new code. NFPA hopes that the new office will eventually provide services beyond California as additional municipalities adopt NFPA 5000.

All of this support reinforces NFPA's commitment to doing what needs to be done as the building code moves forward.

If you're interested in obtaining more information about adopting NFPA 5000, contact Nancy McNabb at the Building Code Central Field Office at (214) 956-7409 or Raymond Bizal, P.E., at the Building Code Western Field Office at (562) 497-1706.
Children are at the heart of NFPA's safety message

Last November, on the 14th anniversary of the United Nations' adoption of the Convention on the Rights of the Child, UNICEF Executive Director Carol Bellamy asked world leaders to put children at the heart of their development agendas. The most widely ratified treaty in history, this convention spells out the rights of children everywhere to survival; to develop to the fullest; to protection from harmful influences, abuse, and exploitation; and to participate fully in family, cultural, and social life.

In reality, many children only have access to varying degrees of these rights. Some children must bear arms to fight wars. Some lose families to AIDS. Some live in fear of terrorist attacks. Some go to bed hungry.

Children around the world are also exposed to many preventable injuries, including those caused by fires. Safety from these injuries should also be a basic right of a child.

Lack of safety programs

However, many countries, especially developing countries, have no formal fire-safety programs, either in schools or in communities. Increasingly, they are turning to the NFPA Public Education Division and the Center for High-Risk Outreach to provide the training techniques and basic content they need to develop such programs through our Learn Not to Burn® and Risk Watch® curricula.

How do these two programs teach fire and life safety? First, they emphasize positive, non-threatening messages, avoiding scare tactics, to instill fire-safety behaviors without creating fear.

Positive messages

I often use the following as an example of a positive message. When my nephews Tony and Zachary were little and just starting to run relays, my brother Greg wanted to teach them the importance of holding onto the baton and passing it to the next runner. To avoid scaring his sons by giving negative messages such as, “Don’t drop the baton,” he told them instead, “You have to have the baton in your hand to win.” This worked because it told my nephews what to do and why they had to do it.

Of course, not every child will learn safety behaviors in school. Like the UNICEF convention, Learn Not to Burn and Risk Watch encourage anyone who can positively influence a child to help teach him or her fire-safety behaviors. Family members, village elders, or religious leaders can all adapt and teach these programs.

In one of his visits to South Africa for the Center for High-Risk Outreach, for example, Fire Chief Ed Kirtley of Guymon, Oklahoma, worked with the staff of a mosque to teach children safety behaviors.

In reaching out to the global community, educators of all types can embrace the basic, positive principles established in NFPA public education programs by creatively improving outreach methods to all children, their families, and members of their communities. All children have a right to grow into adulthood free from fires and burns.

SHARON GAMACHE is the executive director of the Center for High-Risk Outreach.
Pinnacle™ Smoke Detection for critical process and equipment areas

Intelligent, addressable smoke detector has alarm settings to 0.02% per foot obscuration for ultra-high sensitivity. Provides earliest possible detection for critical process and equipment areas, such as:
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For all your building protection needs...

Think System Sensor

For all your building protection needs, System Sensor manufactures the highest quality fire detection and notification products available. We make it our business to develop advanced ideas that deliver advanced solutions so when you think of building protection, you think System Sensor. This type of forward thinking led System Sensor to develop the soon-to-be-available Eclipse™, a brand new industry-leading protocol with a complete line of products:
- Photoelectric Smoke Detectors
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- Photoelectric/Thermal Combination Detectors
- Input/Output Control Modules

Experience - System Sensor is a global manufacturer of fire detection and notification devices. For years, we have designed new products that utilize the most advanced technologies in the most inventive ways, yielding superior building protection products that are more convenient to install and more efficient to operate.

Quality - System Sensor places a high premium on research and development to offer products that provide the earliest detection of fire scenarios, as well as latest-technology audible and visible notification devices. The result is a line of products that is absolutely reliable for real-world applications.

Service - System Sensor is dedicated to meeting your needs. We have application engineers ready to help, a customer support department that is on call to support you, and technical documentation available 24/7 through automated FAX or CD-ROM.

For more information on System Sensor, circle the number on the reader service card for a free E-DOCS™ CD-ROM, a comprehensive resource of technical information, or call System Sensor at 800/927-6676.

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Innovair™ Low-Flow Smoke Detectors for your ducts

Low-flow duct smoke detector with the widest range of airflow speeds - 100 to 4,000 FPM. Specifically designed to meet Variable Air Volume systems. Eliminates need for in-duct, pendant-type detectors. Covers missing signal. Watertight and high temperature models available.

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Acclimate™ Smoke Detectors for your multi-use common areas

A detector with photoelectric and thermal inputs for complete protection.
- Equates multiple sensor inputs into predetermined responses to identify fire scenarios in the quickest manner.
- Self-adjusts to the local environment and sets sensitivity based on recorded data without a service call.
- Minimizes costly transient alarms.

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For more information, circle the number on the reader service card for a free E-DOCS™ CD-ROM, a comprehensive resource of technical information, or call System Sensor at 800/927-6676.
NFPA 140 provides a source for authorities having jurisdiction seeking guidance when production companies come to their community and want to film an epic. By Paul Ott

Quiet on the set

On January 9, 2003, flames erupted in the Situation Room of the White House, filling it with smoke. As people fled the building, the fire sprinkler system operated, containing the blaze until firefighters arrived and extinguished the remaining flames. Nobody was injured. >>

Composite photograph by Jon Chomitz
Reports of the fire didn’t appear on the front pages of the nation’s newspapers the next day, because it didn’t occur in the White House at 1600 Pennsylvania Avenue in Washington, D.C. It happened instead in Burbank, California, in a Warner Brothers soundstage used for the popular NBC television series *The West Wing*, and merited little more than a brief story by the Associated Press and an article in *Entertainment Weekly*.

Although the unexpected blaze, caused by a malfunctioning halogen light, wasn’t part of the *West Wing* script, fire is sometimes used deliberately in movies and television shows, and an intentional fire on a set can be as dangerous as an unintentional fire if certain precautions aren’t observed.

By their very nature, soundstages and production facilities present unusual fire safety challenges. Numerous variables contribute to their fire potential. Such facilities are found not only on studio lots, but in converted warehouses and high-rise buildings in metropolitan areas, as well. Structural changes can be frequent, involving the use of cutting and welding torches and combustible materials, and moveable walls and ceilings may inadvertently block fire sprinkler systems or equipment vents. Some sets use pyrotechnics, smoke, or flames for special effects, and some productions are filmed in front of live audiences.

Since many movies and television shows are produced in California, it’s no surprise that officials there were among the first to address the fire safety dangers posed by soundstages and production facilities. Article 40, “Motion Picture Production Studio Sound Stages,” was introduced into the California Building Code using guidelines developed by the California Fire Marshal’s Office.

As the production of movies and television shows moved to locations beyond California, however, the need for a national standard became apparent.

**As the production of movies and television shows moved to locations beyond California, however, the need for a national standard became apparent.**

Because studios didn’t require the same regulatory oversight as location shooting and because some studio work might endanger lives, fire officials became concerned, particularly when the work was done in vacant warehouses that were, in Parsons’ words, “a firetrap, with no fire sprinklers.”

“Filmmakers like to create and do things on a whim. One minute they could be doing something extremely docile, and the next they could be doing something extremely dangerous,” says Al Adams, deputy fire marshal for California. Adams, who coordinates the State Fire Marshal’s Motion Picture and Entertainment Unit, says California’s codes and NFPA standards provide consistent minimum safety requirements for converted warehouses and other buildings approved for use as studio soundstages and production facilities.

Article 40 also keeps cities in California from offering less-restrictive safety standards for such facilities than neighboring cities, according to Richard Schiehl, former Los Angeles County fire marshal and, later, a studio consultant. Mayors and city managers love the money production companies bring into their communities, but fire officials needed to make sure the work being done in their jurisdictions was safe, he says.

“Now that NFPA 140 is out there,” Schiehl says, “there’s an outlet for agencies from Kansas to Maine to seek out...
The fire hazards studio soundstages and production facilities pose are outlined in detail in the motion picture and television studio section of NFPA's Fire Protection Handbook.

Flexibility featured in design criteria
NFPA 140 provides minimum standards for fire-sprinkler and alarm-system design criteria; egress; the use of pyrotechnics and open flames; and the use of certain types of decorative materials in soundstages. It also regulates smoking on sets; the storage and use of flammable and combustible liquids; and the use of welders in the construction of soundstages. In addition, it lays out the electrical requirements for such facilities.

"It's not a long standard, but the committee identified..."
what the key protective features needed to be,” Côté says. Noting that the standard provides a flexibility that doesn’t interfere with day-to-day production techniques, he says, “the committee got creative and provided adequate ways to do fire and life safety.”

Because sets might include moveable panels and ceilings that are often in place for less than 90 days, Schiehl says, “fixed fire protection is cumbersome and difficult to apply.” “Additional requirements can be required on a case-by-case review of the needs of the production company, the severity of the hazard, and the duration of the filming,” he says.

The fire hazards studio soundstages and production facilities pose are outlined in detail in the motion picture and television studio section of NFPA’s Fire Protection Handbook.

The entertainment industry has been fortunate in that few major fires have occurred on sets. In 1994-1999, the last years for which national data are available, an average of nine reported structure fires per year on movie studio soundstages resulted in damages totaling $47,000 per year.

According to Grill, editor of that section, the significant technical achievements of NFPA 140 relate to design criteria for fire sprinkler systems that might be shielded from fires in certain areas of sets and fire alarm systems in areas with live broadcasting.

“Both of these areas of NFPA 140 allow unique solutions to issues that often lead to conflict between operators and enforcement authorities,” he says.

Fire sprinkler systems required by Section 4-2.2 of NFPA 140 must comply with NFPA 13, Installation of Sprinkler Systems, and with NFPA 25, Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems.

“This section basically requires new production facilities to be equipped with fire sprinkler systems,” Grill says. Exceptions are allowed if certain protective measures are used in areas shielded from fire sprinkler spray by ceilings or platforms, or if the fire sprinkler system in a building housing the production facility meets the criteria for Extra Hazard, Group 2, structures.

These protective measures include installing heat or smoke detectors beneath solid, hard ceilings and platforms; changing such ceilings after shooting is done for the day; establishing an on-site fire watch when the set is not in use; banning the storage of combustibles beneath platforms; and using fire retardants beneath combustible platforms and on hard, combustible ceilings.

“These are up to the operator, with the authority having jurisdiction, to agree on what mitigation would be necessary to allow for the obstruction of the fire sprinkler system,” Grill says. While the first exception to NFPA 140 allows AHJs and building operators to reach agreement on mitigation measures, he says, “the second exception takes some of that subjectiveness out of it.” The fire sprinkler system design for an Extra Hazard, Group 2, occupancy calls for a significant water-discharge requirement, Grill says.

Unique remedy addresses concerns

As for fire alarm system design criteria, Grill says that NFPA 140 recognizes the entertainment industry’s concerns about unwanted fire alarm activations during live productions.

While NFPA 140 doesn’t allow alarms on such a set to be deactivated, it does allow for the deactivation of notification appliances, under three conditions. First, the notification appliances must be in an area that is attended throughout the shooting of a program. Second, the attendant must be able to communicate with the building’s fire command center and soundstage occupants to initiate any emergency action. And finally, the deactivation of the notification appliances must activate an illuminated visual signal on the set.

At ABC, Moynihan, the network’s fire protection engineer, and the AHJ resolved the network’s concerns about unwanted fire alarm activations during live broadcasts by applying the fire alarm system design criteria in NFPA 140 to several of its broadcasting facilities.

“The bottom line is broadcasting and television production are our business, and our main objective is to accomplish this successfully. However, the safety of our people and our building occupants is always of paramount importance to us,” Moynihan says.

Aside from concerns about fire alarms during live broadcasts, Moynihan says NFPA 140 addresses means of egress, travel distances to exits within soundstages, smoking on soundstages, portable fire extinguisher installation, flame proofing, and storage.

“I believe that, in its present state, NFPA 140 provides the rudimentary guidelines to provide the necessary safety in motion picture and television production studio soundstages and approved production facilities,” he says. “This is a document not just for New York City or California. It’s a
NFPA video production is tops in training

NFPA has made several of its training videos available online to preview. The goal behind this is helping members deliver high quality instruction and enhance their training. The video previews are available in the following categories:

- Public Education Videos
- Emergency Response & Evacuation Videos
- SafeWork® Series
- Electrical Videos

For more information, go to www.nfpa.org.

Those wishing to preview the videos, which average three minutes in length, are asked to choose their Internet connection speed: Dial-up (56K), ISDN/LAN (150K), or Cable/DSL (300K).

The preview also requires a Windows Media Player, which can be downloaded at no cost.

The public education videos include “Where There’s Smoke, There’s Science” and “The Great Escape Challenge.” “Where There’s Smoke, There’s Science” is an animated video that helps kids understand the science facts behind fire safety behaviors.

“The Great Escape Challenge” helps families plan for a safe escape from their home using a fast-paced “reality game” where families take the challenge to see if they’re prepared to escape a home fire. Contestants race against the clock to score points while demonstrating good emergency response procedures.

The Emergency Response Video Set prepares safety and security personnel to respond effectively.

Two new videos from NFPA show safety concepts in action to teach safety and security personnel how to prevent and respond to fire plus how to plan for and conduct a safe evacuation.


NFPA’s Award Winning SafeWork video instructs employees about workplace hazards that require PPE, and how to use and maintain head, face, eye, foot, hand, and body protection equipment for different types of hazards. Instructional graphics clarify technical points and help you meet requirements of OSHA 1910.132, 133, 135, 136, and 138.

NFPA also offers the NEC® Expert 2002 Video Series.

Fully revised for the 2002 Code, this five-part video training course uses field demonstrations, graphics, and computer animations to explain NEC requirements relating to grounded systems...overcurrent protection of conductors...installing services...installing motors and transformers...and remote control and signaling circuits.

In addition, there’s the 2002 NEC Guide to the Major Changes.

Through live visuals and high quality graphics, NEC specialists have created clear explanations of the revisions in the 2002 edition.
In the face of a new national threat, NFPA again embraces the accelerating demand for consensus-based guidance, comprehensive training, and life-safety education. By John R. Paradise

Homeland security, while a relatively new term for many Americans, has been among the core missions of NFPA since the organization's founding more than a century ago.

At its most basic level, homeland security is about preserving public safety. It's about bolstering the nation's protective infrastructure, including its disaster-management network, and improving first responders' equipment and training. It's about building safer structures. It's about saving lives. >>

ILLUSTRATION BY WILLIAM RIESER
An awful lot of homeland security issues rely on the first-responder community and the safety and integrity of the built environment,” says Arthur Cote, NFPA executive vice-president and chief engineer. “We’ve been working in that arena for a long time. That’s who we are.”

So it’s no surprise that at the request of the U.S. Air Force NFPA formed a technical committee project to develop a standard for “Mass Notification Systems” for buildings, says Robert Vondrasek, NFPA vice-president of Codes and Standards Operations.

“This is the 21st-century version of the air raid signal of the 1950s,” Vondrasek says. “At a time when we’re just taking down the last of the old air raid sirens, relics of the Cold War, and putting them into museums, we suddenly find ourselves faced with the need to alert the public in the face of a new threat.”

Threats and instruction

“The mass notification system’s purpose is to notify occupants of threats and instruct them as to what actions to take. These new signaling systems would interface with the building fire-alarm system and would permit communication with building occupants in the event of a terrorist incident. In some cases it may suppress the fire-alarm evacuation signaling, as evacuation of the building may not be the advisable course of action,” he says.

“Though the attack on the World Trade Center towers was a large incident, it remained localized from an emergency management standpoint,” he says. “The New York attack was roughly limited to lower Manhattan and remained fairly confined to the attack site. But that may not be the case when dealing with a large-scale chemical, biological, or radiological attack. If you have a large radioactive, biological, or chemical plume moving across municipal or state boundaries, you must be concerned about response ahead of the cloud. Who do you notify? How? When? Who has the authority to make these decisions? The application of public warning systems and protocols is directly tied to these timely communication decisions. This is another challenge for us.”

At a time when we’re just taking down the last of the old air raid sirens, relics of the Cold War, and putting them into museums, we suddenly find ourselves faced with the need to alert the public in the face of a new threat.

NFPA is also participating in the American National Standards Institute’s (ANSI) Homeland Security Standards Panel.

“What the panel is doing is identifying where the gaps lie in standards as they relate to homeland security and trying to decide how to fill them,” Vondrasek says.

In addition, NFPA is working with the Department of Homeland Security to identify, develop, and reference standards in the chemical-biological-radiological-explosive hazard area and NFPA is participating with over 50 other organizations—federal, state and local—on the Interagency Board for Equipment Standardization and Interoperability.

This panel is charged with identifying equipment needed to respond to terrorist incidents and coordinating local, state and federal standardization of safety equipment and systems for emergency responders.

In a recent, proposed tentative interim amendment to NFPA 1994, Protective Ensembles for Chemical/Biological Terrorism Incidents, Jeffrey Stull, president of International Personnel Protection, Inc. and a member of NFPA’s Hazardous Materials Protective Clothing and Equipment Technical Committee, states, “NFPA 1994 is now being specified as the minimum standard for domestic preparedness by several organizations, including the Interagency Board for [First Responder] Equipment Standardization and InterOperability. Furthermore, federal organizations providing grant funds for the purchase of personal protective equipment, including protective ensembles, are now beginning to mandate that protective ensembles purchased with grant monies be compliant to NFPA 1994.”

And in December, the Department of Homeland Security and the Technical Support Working Group awarded the first contract— to North Carolina State University—to develop the next generation of structural firefighting, personal protective equipment, which will be consistent with NFPA standards and include chemical and biological-agent protection.

Big-picture planning

“Most, if not all, of our codes and standards can be seen as directly or indirectly touching the concept of homeland security by either addressing emergency preparedness and response or improving the design of the built environment,” says Casey Grant, assistant chief engineer for NFPA and secretary of the Standards Council. Grant says NFPA’s codes and standards address the nation’s emergency-preparedness community on two levels.

“They’re focused on ‘big-picture’ subjects, such as disaster response, and on more specific but just as critical operations-level matters, like training and equipment,” he notes.
NFPA 1600, Disaster/Emergency Management and Business Continuity Programs, and NFPA 1561, Emergency Services Incident Management System, are two prime examples of NFPA’s preparedness efforts on the macro level, he says.

NFPA 1600 provides guidance that cities and towns can use to develop their own disaster programs, allowing them to coordinate and manage their resources when preparing for, responding to, and recovering from large-scale emergencies and disasters. NFPA 1561 specifically spells out the roles and responsibilities of the emergency responders in the field at both the strategic and tactical levels.

Other examples of macro-level planning documents are NFPA 99, Health Care Facilities, which addresses how medical facilities should respond to mass-casualty incidents; NFPA 1710, Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments; and NFPA 1720, Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments. These last two standards provide detailed information for the deployment of fire-service and emergency medical resources.

Emergency response and preparedness has been in the spotlight ever since September 11, 2001, Grant says. “Those events made the entire public-safety community sit up and take stock,” he says. “There was suddenly a new focus on codes and standards that support disaster preparedness. There was, and most assuredly still is, a push from many sectors to make sure that these standards are the best they can be. People were asking, ‘Are we really prepared to respond?’”

Aiding first responders

Of NFPA’s 300-plus codes and standards, approximately 200 apply to safety in the built environment, while the rest apply directly to the first-responder community—their training, methods, and equipment.

For instance, NFPA 471, Recommended Practice for Responding to Hazardous Materials Incidents, provides specific operational and equipment information on responding to hazardous materials incidents, including acts of terrorism. NFPA 472, Professional Competence of Responders to Hazardous Materials Incidents; NFPA 473, Competencies for EMS Personnel Responding to Hazardous Materials Incidents; NFPA 1951, Protective Ensembles for USAR Operations; and NFPA 1994 are also examples of NFPA’s more operational-focused standards.

Immediately following 9/11, NFPA decided to provide first responders with free access on our Web site, www.nfpa.org, to these five standards, as well as excerpts from NFPA’s Hazardous Materials Response Handbook.

“We felt these were the most germane standards to this particular incident,” says Vondrasek. “I think all of us here agreed that we have an obligation to support and assist these first responders in every way we can, especially when they’re dealing with new and unique challenges. If we have the information, it behooves us to get it out there.”

In the weeks that followed, NFPA also produced a building-evacuation fact sheet that spells out the actions to take in the event of a large-scale emergency and provides building managers with information about disaster-preparedness plans. It also recommends which emergency messages to broadcast over a building’s public-address systems.

In December, North Carolina State University received a contract to develop the next generation of structural firefighting, personal protective equipment, which will be consistent with NFPA standards.

In addition, NFPA conducted a series of free, one-day, evacuation-safety workshops for building safety personnel and building managers in 15 cities around the United States, Vondrasek says.

“We proposed these seminars for the Federal Emergency Management Agency (FEMA) regions, and they supported the idea. We see this as another part of our public safety mission.”

Shaping public policy

Even before the dust settled over New York City, many groups in the private sector, as well as state and federal government officials, entered the debate about national standards for emergency preparedness. FEMA, the National Institute of Standards and Technology, and the Centers for Disease Control and Prevention were among the federal agencies involved in the push.

Congress also addressed the issue of preparedness standards in the discussion leading up to the creation in January 2003 of the U.S. Department of Homeland Security.

“Suddenly, everyone was jumping on the emergency-preparedness bandwagon,” Vondrasek says. “From the very start, we knew we had an important role to play because of our collective experience with standards related to emergency preparedness and emergency responders. We were in a perfect position to help the process evolve, but we wanted to be sure that no one was trying to reinvent the wheel.”

Among the groups currently working toward defining a baseline level of national emergency preparedness is the ANSI Homeland Security Standards Panel.

Among the topics the panel is examining is the issue of biological agents. What biological or chemical weapons are the biggest threats to the U.S. public? What’s the best way to treat...
The needs assessment NFPA did at the request of the U.S. Fire Administration dramatically demonstrated how much must be done to ensure that our nation's first responders are ready to respond to a terrorist attack. NFPA has long urged that firefighters be trained to deal with issues like the collapse of a building with more than 50 occupants.

exposed victims? What kinds of detection devices are available to alert first responders when they’ve been exposed? What kind of decontamination procedures should they use?

The group's biggest concern in this area, Vondrasek says, are the devices for detecting biological, chemical, and radioactive agents that have flooded the market.

"Everyone is claiming theirs is the best all-purpose detection device for biological, chemical, or radioactive agents," he says. "But some of them are being manufactured and tested to no known standards. We're worried about the possible consequences."

In response to this concern, the Department of Homeland Security sponsored legislation in July that would limit a company's liability if it agreed to build biochemical detection devices to nationally recognized standards.

"This is one way the group feels we can ensure we're getting the best devices possible for the emergency responders to use," Vondrasek says.

Other key topics the panel is examining regarding standards gaps include biometrics for identifying and tracking individuals; emergency-responder training and certification programs related to tactics and the proper use of equipment; and standard-messaging, mass-communication protocols agencies can use to alert the public. Also being considered are risk-assessment models that can be used to assess the possible effects of a disaster, including geographic range and timelines, as well as the possibility of adopting security standards and protocols used in other countries, and cyber security to protect electronic communication systems, equipment, software, and data.

"It's a work in progress," Vondrasek says of the group's efforts. "We've focused and refocused ourselves several times. I think it's the nature of the beast. The issue of homeland security is huge. When you take a close look at it, you see that it has a lot of twists and turns."

NFPA also focused the Fall Education Conference held last November in Reno, Nevada, on homeland-security preparedness and response. Among the topics discussed were how to manage a chemical, biological, or nuclear incident affecting the commercial transportation industry, "best practices" for responding to homeland-security threats, and the role of public/private partnerships in restoring business and government services before, during, and after a disaster.

Homeland security theme
In addition, Donald Schmidt, senior vice-president and managing consultant with Marsh Risk Consulting, moderated a panel discussion on homeland-security preparedness and response.

Eleven emergency-response and -management experts offered their perspectives on the most important and challenging issues currently facing the public and private sectors.

"Homeland security encompasses a great deal, and this discussion was designed to emphasize the most important points," said Schmidt. "There's much that needs to be done to institute safety measures and, by establishing public-private partnerships, both sectors can benefit."

Panel attendees learned how to perform a gap analysis of their existing emergency-management programs to incorporate lessons learned from 9/11 and were introduced to strategies their organizations can use to enhance preparedness. There was also discussion of developing a comprehensive industrial emergency-management program.

"There is always the threat of someone sabotaging your business," said instructor Richard Anderson, CFPS, of Merck & Co., Inc., who has more than 28 years of experience in industrial and emergency-services management.

"You must be prepared to evaluate the effectiveness and centralization of your business-continuity planning and crisis communications."

The panel discussions included:

• planning for effective responses to emergencies, including terrorist threats to public and private locations;
• review of emergency-response protocols involving rail-transportation systems, including derailments, station emergencies, and acts of terrorism;
• analysis of effective local emergency-planning efforts with a community perspective;
• review of hospital emergency-incident, command-system protocol and its relationship to other emergency responders serving public health needs in times of crisis;
• analysis of the impact of homeland-security threats on health-care providers and their readiness to respond to emergencies or disasters in their community;
• review of public emergency-operations planning using an all-hazards approach, focusing on terrorism threats to demonstrate common and unique planning strategies;
• analysis of legal issues in the preparation and implementation of emergency-actions plans.
History of involvement

“There is a great overlap between activities in which NFPA has always been engaged and the challenges posed by homeland security,” says NFPA President James Shannon. “But the threat of terrorism has made us and the whole first-responder community seriously prepare for events that would have seemed pretty far-fetched just two and a half years ago.

“The needs assessment NFPA did last year at the request of the U.S. Fire Administration dramatically demonstrated how much must be done to ensure that our nation’s first responders are ready to respond to a terrorist attack,” he says. “NFPA has long urged that firefighters be trained to deal with issues like the collapse of a building with more than 50 occupants; that protocols be established to deal with chemical, biological, and radiological incidents; and that protective clothing and equipment that complies with our latest standards be used. All of these efforts and others have taken on new urgency since September 11. There is a new sense of priorities and a greater demand for training and information than existed before.”

Both Vondrasek and Grant admit that defining a baseline of preparedness at the national level is a daunting—but fascinating—task in which to be involved.

“And in the end, the actual process of discussing the issues and making advances in some areas might just serve as a deterrent to future attacks,” Vondrasek says. “Someone might just feel the United States is too well-prepared for a certain kind of incident. That is an encouraging thought in and of itself.”

NFPA's free online access for first responders

NFPA is making several key documents available for online review.

“It has always been important for first responders to have the tools they need to do the job, but the job has gotten more challenging since September 11 and the resources have become scarcer,” says NFPA President James M. Shannon. “It’s troubling to NFPA that U.S. fire departments lack the training, personnel and equipment necessary to properly do their jobs,” says Shannon. “We’re working with federal officials to turn that around. Meanwhile, offering on-demand access to key consensus codes and standards and other NFPA information is one way that we can help fire departments bridge their resource gaps.”

The following documents related to the fire service are available for free:

- NFPA 1403, Live Fire Evolutions
- NFPA 471, Recommended Practice for Responding to Hazardous Materials Incidents
- NFPA 472, Professional Competence of Responders to Hazardous Materials Incidents
- NFPA 473, Professional Competence of Emergency Medical Responders to Hazardous Materials Incidents
- NFPA 1951, Protective Ensembles for USAR Operations
- NFPA 1994, Protective Ensembles for Chemical/Biological Terrorism Incidents
- NFPA 1995, Protective Ensembles for Chemical/Biological Terrorism Incidents
- NFPA’s goal is to support the public safety mandate of first responders while at the same time reinforcing the importance of their own safety from occupational hazards,” says NFPA’s public fire protection chief Gary Tokle.

“Chemical and biological terrorism are high-profile topics today; yet fire and emergency response personnel deal with common hazardous materials on the job every day. It is essential that they understand and adhere to the established standards of haz-mat response.”

In addition, as part of its commitment to enhancing public safety through the adoption and enforcement of key ANSI codes and standards, NFPA is making the following documents available for review online by the public:

- NFPA 30, Flammable and Combustible Liquids Code
- NFPA 30A, Motor Fuel Dispensing Facilities and Repair Garages Code
- NFPA 909, Protection of Cultural Resources
- NFPA 914, Fire Protection of Historic Structures
- NFPA 1144, Fire Protection of Life and Property from Wildfire
- NFPA 5000™, Building Construction and Safety Code™

“On-demand review of NFPA’s consensus documents conveniently places important safety information on the desktops of traditional users as well as others who have a keen interest,” says NFPA President Shannon. “NFPA is committed to serving the public’s increasing interest in technical information, and online access to these key codes is a valuable resource.”

You’ll be asked to register or log-in before viewing any standard.

The standards can be viewed online only — there are no “print,” “save,” “cut and paste,” or “search” options. You can use the Table of Contents to navigate through the document. Viewing the standards requires a minimum of Netscape 5.0 or Microsoft Internet Explorer 5.0.
Known as SAFER, the Staffing for Adequate Fire and Emergency Response Firefighters Act aims to help local departments pay to add some 75,000 firefighters to their ranks over the next decade. By Pam Weiger

SAFER beginning

Nearly two and a half years after NFPA issued a first-of-its-kind standard for fire-department staffing requirements, Congress has taken steps toward helping communities increase the number of firefighters needed to meet industry minimum standards. Known as SAFER, the Staffing for Adequate Fire and Emergency Response Firefighters Act won approval last November as part of the National Defense Authorization Act for FY 2004. The legislation aims to help local departments pay to add some 75,000 firefighters to their ranks over the next decade. >>

ILLUSTRATION BY KATHERINE MAHONEY
"The SAFER legislation was probably not directly related to NFPA 1710, but there's recognition that a standard has been established through 1710," says John Biechman, NFPA vice-president of Government Affairs. "Put simply, if you don't have enough bodies, it will be tough to meet those goals."

NFPA 1710, Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments, has caused fire chiefs across the country to evaluate their own organization and deployment levels, functions and objectives, and resources and systems management. And while no jurisdiction has formally adopted the standard, many are regrouping their resources and re-examining their objectives in an effort to comply with the provisions, or at least the intent, of NFPA 1710.

"It's starting to show up in regular communications in fire-service talk about deployment and resources," says Phoenix, Arizona, Fire Chief Alan Brunacini, who chairs the NFPA Technical Committee on Fire and Emergency Service Organization and Deployment-Career. "That's how a new standard gets implemented; it becomes part of our mentality, a piece of our software that describes how we operate."

Controversial beginning
The standard, somewhat controversial in its wide-ranging effect on the nation's 3,000 to 3,500 career fire departments, was issued in July 2001, with an effective date of August 2, 2001. It was the result of expert judgment, research, and empirical studies conducted in North America that used over 1,000 years of firefighting experience to define levels of service, deployment capabilities, and staffing for fire departments that consist "substantially" of career personnel. The result is a document that describes accepted best practices in deployment without addressing tactical operations at specific incidents.

Standard requirements
NFPA 1710 requires fire departments to evaluate their levels of service and deployment and their response-time objectives and to report to their governing bodies how they are complying with the standard. Because the report is required every four years, many departments are halfway through their analysis and planning process.

Among them is the Phoenix Fire Department, which has begun to measure its compliance with NFPA 1710 and will issue its report "as soon as we can," although it's not common practice in Phoenix to formally adopt such standards.

"We adopt in concept and principle," says Brunacini. The chief maintains that most of the city's developed areas are close to complying now, and the department is committed to meeting the national standard.

"We're building 10 new fire stations as fast as we can afford them," Brunacini says.

Many departments that agree with the concept and principle of NFPA 1710 nonetheless balk at the millions of dollars they would need to implement the staffing component, which, if adopted, requires that fire companies be staffed with a minimum of four on-duty personnel or a response of two apparatus that carry a minimum of four personnel.

Support in the budget
Even in affluent areas such as Fairfax County, Virginia, money is a major obstacle to compliance. Recently retired Fire Chief Edward Stinnette, who served on the NFPA 1710 committee, says the Fairfax County Fire and Rescue Department needs 78 new positions, at a cost of more than $5 million annually, to comply fully with the standard's staffing requirements. But he believes the requirements are sound.

"I don't think four people is extravagant when you look at the tasks. We asked for four-person staffing on all our squads and trucks even before 1710 came out," Stinnette says. "It just hasn't been supported in the budget."

And it probably won't be any time soon. That's where the federal SAFER funding can help. The act authorizes the U.S. Fire Administration to award $7.6 billion in grants over seven years to career, volunteer, and combination departments to hire additional firefighters. Under the program, grants will be awarded on the basis of need through a competitive peer-review process modeled after the highly successful Assistance to Firefighters grant program for equipment and training that was established by the Firefighter Investment and Response Enhancement (FIRE) Act.

The SAFER grants will be awarded directly to local departments for a four-year period, up to a total of $100,000 per firefighter. They require an overall minimum local match of 37.5 percent, with the percentage increasing...
NFPA President testifies on the need for sufficient staffing

On June 4, 2003, NFPA President James Shannon testified before the Committee on Science, United States House of Representatives, Washington, D.C., in support of the SAFER Act. Included in his testimony was the following information on NFPA 1710, Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments, and NFPA 1720, Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments. The full text of his comments can be found at www.nfpa.org/Research/FireInvestigation/Homeland/homeland.asp.

“Our research found that the areas of greatest concern are a shortage of fire stations to provide emergency response times that meet the guidelines of the Insurance Services Office (ISO) and NFPA 1710; and insufficient staffing on responding fire apparatus for safe and effective firefighting inside a building, in accordance with NFPA Standards 1710 and 1720.

“Simply stated, at least 65 percent of our nation’s cities and towns don’t have enough fire stations to achieve the widely recognized ISO response-time guidelines. Those guidelines recommend that first-call companies in ‘built-upon’ areas of the city be located to ensure travel distances within 1 1/2 miles. That guidance is consistent with the requirements of NFPA 1710 that firefighters respond within four minutes, 90 percent of the time. However, arriving on scene in time isn’t enough if you arrive without the necessary resources to make a difference.

“NFPA Standards 1710 and 1720 define safe and effective response to structure fires in the 21st century. Both standards are developed through the voluntary consensus process, a process that Congress mandated for standards used by federal agencies, with the enactment of the National Technology Transfer and Advancement Act of 1995. All NFPA standards developed through this process are accredited by the American National Standards Institute.

“The needs-assessment survey found fire departments protecting communities of at least 1 million citizens had at least four career firefighters assigned to engines. But the numbers break down in smaller communities: Only 60 percent of departments protecting communities of 250,000 to 1 million had four career firefighters assigned to engines. In departments serving populations of 100,000 to 250,000, only 44 percent could make that claim. And in communities between 10,000 and 100,000, just 20 to 26 percent of departments offered that necessary coverage.

“With regard to NFPA 1720, most smaller communities protected by an all-volunteer or mostly volunteer fire department responded with four or more firefighters to a midday house fire, but for many, the total response was only adequate for two functional crews on the scene. What remains unclear and unmeasured is how long it took to assemble those firefighters.”
NFPA 1710 requires fire departments to evaluate their levels of service and deployment and their response-time objectives and to report to their governing bodies how they are complying with the standard. Because the report is required every four years, many departments are halfway through their analysis and planning process.

from 10 to 70 percent over the four years to reduce local government dependence on the federal funds. Recipients are required to retain new hires for at least a year after the federal funding ends.

“Problems might arise at the end of the grant, when local governments will have to step up to the plate and keep the firefighters on staff,” says Jerry Ross, NFPA’s director of Government Affairs. “I look at this as Congress beginning on the road to funding the need.”

Indeed, the passage of the act authorizing the money is only the first step. Now, Congress must appropriate an actual dollar amount each year, depending on how much money is available in the federal budget.

“We’ve introduced a new idea for an area of need for our country,” says Pasadena Fire Chief Ernest Mitchell, president of the International Association of Fire Chiefs (IAFC). “Unfortunately, we started behind, instead of in advance of, a problem.”

Mitchell says the terrorist attacks of September 11, 2001, played a tremendous part in putting the spotlight on the fire service, calling the public’s attention to the fact that fire departments respond to all risks, not just fires.

“We’re the first of the first responders,” he says. “We’re an integral part of this country’s security and homeland defense.”

Fire service needs
Other elements of the post-September 11 environment also played a role in bringing attention to the needs of the fire service. For example, military call-ups have left some departments struggling to fill positions left empty by troop deployments overseas.

“Fire departments have increased staffing needs particularly in times of raised alert levels,” says Stacy Barnard, IAFC Government Relations manager. “Preparing fire departments for their everyday duties always better prepares them in the event of a terrorist attack.”

Impact on volunteers
A volunteer component was added to the SAFER Act during committee negotiations between the House and Senate. Under the agreement, 10 percent of funds appropriated will be set aside for departments with all-volunteer personnel or a majority of volunteer personnel. Additional funds will be appropriated to recruit and retain volunteer firefighters who are involved with, or trained in, firefighting and emergency-response operations. The act also prohibits firefighters hired with the funds from being discriminated against for, or prohibited from, engaging in volunteer activities in another jurisdiction during off-duty hours.

That could be good news for volunteer departments, which saw the total number of volunteer firefighters drop by 3 percent between 1986 and 2001. During that time, the number of career firefighters increased by 23 percent, according to testimony NFPA President James Shannon delivered before the House of Representatives Committee on Science on behalf of the SAFER Act.

“Career fire departments need more firefighters, even as they’ve experienced some success in adding firefighters to meet new assignments, standards, and guidelines over the past 15 years,” Shannon said. “There is nothing to suggest recruiting qualified firefighters would be an obstacle if departments were properly authorized and funded to do so.”

“Career fire departments are lucky. They don’t have a difficult time recruiting,” says Ross. “The positions can be filled if they’re funded.”

Chief Mitchell and others hope that SAFER will receive at least partial funding next year. If not, fire departments might not be equipped to handle large-scale emergencies.

“We’ll do the best we can with what we have because that’s what we do,” Mitchell says. “But we’ll struggle in some areas on large, disaster-type incidents that have additional response needs.”

Head start
Some departments aren’t waiting for the federal funding. The Kansas City, Missouri, Fire Department took NFPA 1710 to its governing body as soon as the standard was issued in 2001. Using the department’s own EMS ordinance goals along with NFPA 1710, Fire Chief Richard “Smokey” Dyer convinced the city council to pass a sales tax increase to fund a five-year strategic plan for compliance. The quarter-of-a-cent sales tax increase was approved by 57 percent of the voters, despite a barrage of newspaper editorials opposing the plan, and raised $15 million the first year.

The fire department is using the money from the 15-year tax to comply with NFPA 1710, renovate the city’s 34 existing fire stations, and build two new stations. Additional personnel are being deployed this month in the first round of phased-in staffing increases to meet the minimum standards.

“Our strategic plan has a five-year phase-in, and we’re operating our training academy as fast as we can,” says
Dyer. “We know we’ll need 135 additional firefighters, and we’re in the third year of hiring those now.”

Nonetheless, Dyer credits the existence of the standard with his ability to win approval for the special tax. He says the city’s police department went before the city council six months after he did with a similar request for a tax increase, but was awarded just a seven-year tax to fund only brick-and-mortar expenses.

“Nobody says 1710 did it, but when you compare the same plea at the same time, ours was more effective,” he says. “It wasn’t just my opinion when I went before the council, because I was using a document that had been reached by consensus by experts in the field.”

Disagreement with the standard

However, not everyone has greeted NFPA 1710 with open arms. The staffing issues have stirred the ire of some local fire and government officials who say they should be able to decide how to allocate their own resources.

“How localities prioritize funding and service delivery should be their decision, based on the needs of the community,” says Valerie Lemmie, Cincinnati’s city manager, who served on the NFPA 1710 committee while she was city manager in Dayton, Ohio. “Issues of expenditures, staffing, types of equipment, and response times should all have community input.”

Before NFPA 1710, Cincinnati established its own Standard of Excellence, which Lemmie says is basically in line with NFPA 1710, but she stresses that the decision was a community call.

“Our citizens want us to be the fastest, most available, and best able to meet their needs,” she says. “Sixty percent of our billion-dollar budget goes to public safety. Smaller communities may not have the resources.”

There’s no question it’s easier for large metro departments to come into compliance,” says Philadelphia, Pennsylvania, Fire Commissioner Harold Hariston, who represented the Metro Fire Chiefs on the NFPA 1710 committee.

But Hariston believes that’s one reason the standard is so valuable: it gives fire chiefs something to take to their governing bodies as a standardized method necessary to operate safely with good quality tactics.

“NFPA 1710 standardized ways of deployment and put teeth in the department’s arguments to keep from losing people,” Hariston says. “It was something we sorely needed. We finally got it, and it works.”

Matching your neighbor

Departments that already have four-person staffing in place may still benefit from the SAFER Act. Pasadena, for example, uses four-person staffing, but some of its neighboring jurisdictions do not.

“We may not be direct recipients of the money,” Chief Mitchell says, “but for mutual-aid response, it would be beneficial to us if everyone around us had the staffing.”

The recently published Needs Assessment of the U.S. Fire Service, a study authorized by Congress and conducted by NFPA in cooperation with the Federal Emergency Management Agency, found that only 60 percent of departments protecting communities of 250,000 to 1 million people had four career firefighters assigned to engines. It’s estimated that 50,000 career officers are needed to address the staffing needs of existing departments, with perhaps another 25,000 to 35,000 needed to staff new fire stations required to meet response-time guidelines.

COPS

The SAFER Act isn’t the first time the federal government has stepped in to help local communities hire personnel. In addition to the administrative components of the FIRE Act, the SAFER legislation was modeled after the Community-Oriented Policing Services (COPS) program established in 1995. Since its inception, COPS has provided more than $6.9 billion in federal money to fund the hiring of more than 118,000 police officers. It’s estimated that SAFER could help fund as many as 75,000 firefighting positions.

Of course, personnel needs aren’t the only issues facing fire departments. Training, equipment, and facilities are all pressing issues that SAFER won’t address.

“Cities can build fire stations,” Brunacini says. “The expensive part is staffing them, because that’s a recurring cost. The main objection to 1710, I think, wasn’t that people are opposed to having an adequate number of firefighters, but that they couldn’t afford them.”

NFPA’s Biechman agrees.

“This is priming the pump,” he says of the federal funding. “They’ll need training, equipment, and so on, but this will get them started and help with both basic response needs and homeland security issues.”
IN THE YEAR SINCE THE FIRE AT THE STATION NIGHTCLUB, NFPA HAS MADE SWEEPING CHANGES TO THE CODES GOVERNING SAFETY IN ASSEMBLY OCCUPANCIES TO ENSURE SUCH A TRAGEDY DOESN’T HAPPEN AGAIN. BY SHELLY REESE

IF ONLYS
BECOME
NEVER AGAINS

JUST AFTER 5 A.M. LAST FEBRUARY 21, NFPA Director of Public Affairs Margie Coloian turned on the radio in her car. As she made her way through the dark streets near her Rhode Island home toward NFPA’s Quincy, Massachusetts, headquarters, she heard the news.

A fire the night before had destroyed a night-club in West Warwick, Rhode Island, and killed nearly a dozen people.

“I knew that area fairly well,” she recalls. “At that point, there were only about 11 fatalities [reported], and I remember thinking, ‘There’s no room for a big club over there. How could there be so many fatalities at a small club?’”

But the tragedy was much worse and would lead to historic changes in fire and life safety codes. >>
In the year since the inferno at The Station nightclub claimed 100 lives in the fourth-deadliest nightclub fire in U.S. history, NFPA and several New England states have worked hard to ensure such a tragedy doesn’t happen again. NFPA has enacted tough new code provisions for fire sprinklers and significant these changes are,” says Casey Grant, secretary of NFPA’s Standards Council. “I believe they provide us with some manner to ensure that these types of disasters don’t happen again and that the people who suffered and died did not do so in vain.

“It’s difficult for people not involved in codes and standards to understand how far-reaching these changes can be; they really do have an effect on tomorrow’s world. Unfortunately, it often takes a disaster to serve as a wake-up call in the court of public opinion to make lasting changes occur.”

**Recap of that night**

February 20, 2003, was a frigid night. Snow dusted the ground outside The Station Concert Club, where more than 400 fans had gathered to hear Great White, a heavy-metal band from the 1980s.

Around 11 p.m., during the band’s opening number, a stagehand at the back of the stage ignited a “gerb,” a pyrotechnic canister that releases a fountain of sparks, and the walls and ceiling above the stage caught fire instantly. Confused as to whether the fire was part of the band’s act or not, many patrons delayed heading for the
exits for precious moments, a decision that proved fatal.

Within three minutes, the club was engulfed in flames. The lights didn’t go out initially, but the thick smoke gave the appearance that they did, and pandemonium reigned. Blinded by the smoke, patrons couldn’t see the illuminated exit signs. As the frightened crowd rushed toward doorways and windows, people fell and were trampled. Others fled into the bathrooms, which offered no escape.

Dozens of fire crews from all over Rhode Island and southeastern Massachusetts responded to the blaze, rushing to the aid of victims jammed in the club’s doorway. Firefighters made their way into the building to search for survivors and extinguish the fire, but they were soon ordered to evacuate. Not long after, the roof caved in.

Across the street from the club, a triage center was established at the Cowesett Inn to evaluate the extent of victims’ injuries. Some 30 ambulances and a bus lined up outside the bar like taxis. In all, the victims filled 15 medical centers.

By 2 a.m., the ambulances had stopped coming, and hearses began pulling in. Ladder trucks continued to pour water on the flaming skeleton of the building where bodies were still “stacked inside like cordwood,” as one West Warwick firefighter told a reporter.

The next morning, as newspapers landed on front doorsteps and clock radios spouted the morning headlines, the nation focused its horrified attention on the Rhode Island mill town. Although a formal investigation would be months in the offing, media reports immediately focused on the interior of the unsprinklered club, which contained highly flammable soundproofing foam and plastic, and on whether management had given the band permission to use pyrotechnics.

A task force convened by the Commonwealth of Massachusetts’ Department of Public Safety to study Massachusetts’ building and fire codes in light of the Station fire summarized the situation:

“Each of these elements contributed to the tragedy: the proximity of pyrotechnics and foam insulation in a wood-frame building, the crowd’s initial lack of awareness of an emergency situation, untrained staff, too many people with insufficient exits, and, most important, the lack of a potentially life-saving sprinkler system. Individually, they presented a danger. Together, they formed a ‘perfect storm’ of events that precipitated the catastrophe.”

As people across the country wondered how this could happen, NFPA staff had already convened to tackle the greater question: “How can we keep this from happening again?”

**NFPA’s response**

By the time Coloian reached NFPA headquarters the morning after the fire, colleagues had gathered around a television, watching as the death toll continued to climb.

NFPA’s Executive Vice-President and Chief Engineer Arthur Cote joined the group. Cote, who’d heard the news before he left the house, had already called NFPA Vice-President for Building and Life Safety Gary Keith, who was

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**TIMELINE**

**February 17, 2003** A massive crowd crush at Chicago’s E2 nightclub kills 21 and injures others.

**February 20, 2003** A pyrotechnic display at a Great White concert at The Station in West Warwick, Rhode Island, kills 100 and injures more than 187. The fire ranks as one of deadliest assembly-occupancy fires in U.S. history.

**March 13, 2003** NFPA sponsors a public forum and special meeting of the Technical Committee on Assembly Occupancies in Boston. The meeting is held in response to the Rhode Island fire and a February 17, 2003, crowd crush at Chicago’s E2 nightclub, which left 21 dead. A number of Tentative Interim Amendments (TIAs) are proposed to prevent similar tragedies in the future.

**July 9, 2003** At a meeting at NFPA’s Quincy headquarters, the NFPA Technical Committee on Assembly Occupancies and Membrane Structures votes to support amendments requiring fire sprinklers for all new nightclub-type facilities that accommodate 50 or more occupants and for similar existing facilities that accommodate more than 100 occupants. The committee sends its final recommendation to the NFPA Standards Council.

**July 28, 2003** The NFPA Standards Council, meeting in Portland, Oregon, issues TIAs to take effect the following month that will strengthen requirements of NFPA 101®, Life Safety Code®, and NFPA 5000™, Building Construction and Safety Code™. The new TIAs are among the nation’s most stringent.


**January 30, 2004** NFPA completes, at no expense to the state of Rhode Island, multiple five-day training sessions in NFPA 1 and NFPA 101 for more than 250 Rhode Island fire marshals.

**February 20, 2004** The provisions of the Rhode Island Comprehensive Fire Safety Act of 2003, which adopt the occupancy sections of the NFPA codes, take effect. The Rhode Island fire marshal must submit a five-year plan for improving state fire safety.

**July 1, 2004** Rhode Island requires municipally connected fire alarm systems for all special amusement buildings with concentrated crowds and capacities of 150 or more, or the state will automatically reduce the occupancy limits of the building.

**July 1, 2005** The fire sprinkler installation deadline in Rhode Island for all places of assembly with more than 300 occupants, except fully alarmed places of worship and government buildings.

**July 1, 2006** The sprinkler installation deadline in Rhode Island for all special amusement/concentrated occupancy places of assembly with capacities of 150 or more patrons.
Investigators and fire personnel can be seen in front of the burned-out shell of The Station nightclub.

arranging to get an investigator to the site.

By 7 a.m., NFPA staff were hashing out the most pressing issues of the day. What information and statistics would the public and the media need? What relevant codes and standards should be published on the NFPA’s Web site for public access and how should they be explained to reporters? How could NFPA best fulfill its mandate as a fire-safety advocate?

“I joined NFPA 26 years ago, just before the Beverly Hills Supper Club fire,” says Cote. “I was on staff during the MGM Grand fire and the first World Trade Center bombing in 1993. This ranked right up there as one of the more intense episodes we’ve had to contend with.”

Fortunately, NFPA had a new communication tool in the form of the Internet. Within hours, staff began posting relevant contributions from colleagues throughout the organization, including safety tips for club-goers compiled by the Public Education Division staff, statistical and historical information about other major nightclub fires from the Fire Research and Analysis group, NFPA journal® articles, and links to NFPA products that were linked to the tragedy. In addition, the Codes and Standards Administration staff made relevant codes available free online. In the 10 days following the fire, these free-access codes and other information about nightclub fires were requested more than 6,000 times, according to NFPA Web Publisher Mike Hazell.

The Web site was instrumental in helping get information out in a timely fashion, says Coloian, whose group fielded about 125 media-related calls on the day after the fire alone.
"We were taking calls as fast as we could," she remembers. "All six lines coming into the Public Affairs office were lit up, and all of the major media outlets were trying to get through. We were farming the calls out to four or five staffers, who were walking the reporters through the standards. They were literally on the telephone all day, and those calls would have taken even longer if we hadn't had the Web site to direct people to."

By 12:30 p.m., NFPA Senior Fire Investigator Robert Duval had made his way to the scene of the fire, in response to an appeal for help by the Rhode Island Fire Marshal's Office. "I was in Chicago for a presentation and I was then to fly to Hong Kong for another presentation. Upon hearing of the fire and speaking to Gary Keith and then the RI FM Office, I flew back from Chicago and went to the fire scene directly from the T.F. Green airport," Duval says.

The first outside investigator on the scene, Duval's job wasn't to assess blame but to construct a narrative of what happened. "Our investigation group doesn't study origin and cause," he explains. "We're there to tell a story about what happened and to see how our codes would have affected the situation had they been followed."

For the better part of two weeks, Duval immersed himself in the fire.

"By studying fires that occur, we get to see if our codes are working in situations where they are used and if they would have made a difference in situations where they weren't in place," he says. "The process enables NFPA to make sure our codes are working properly or to draft amendments when necessary. That's how some of our codes evolve."

**Evolutionary codes, revolutionary speed**

Understanding the evolutionary nature of NFPA codes, Cote set the wheels in motion to call a special meeting of the Technical Committee on Assembly Occupancies and Membrane Structures even before Duval began sifting through the facts of the fire. As the death toll climbed to 95 confirmed dead by day's end—it would ultimately reach 100—Cote realized that "there was no way we could remain quiet on this issue. We had a responsibility in our role as a safety advocate to look at the situation and act."

Three weeks after the last smoldering ember was extinguished, the technical committee held an emergency meeting.

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**Technical Committee members perform egress-modeling analysis**

**WHEN IT COMES TO** public safety, best guesses aren't good enough. So when the Technical Committee on Assembly Occupancies and Membrane Structures sat down last spring to consider revising the code governing nightclub safety, member Greg Miller, P.E., president of St. Louis-based Code Consultants, Inc., volunteered to perform a dynamic fire-simulation and egress-modeling analysis that would provide an engineering basis for the committee's decision.

"The committee was considering some pretty sweeping changes," says Miller, who represents the National Association of Theatre Owners on the committee. "If we were going to establish new thresholds for sprinkling, I felt we needed a scientific basis for them."

So Miller's company spent several weeks conducting two separate analyses: a fire-dynamic simulation and an egress model. Designed by the National Institute of Standards and Technology, the Fire Dynamic Simulator is a computational fluid-dynamic model program designed to show how quickly heat, smoke, and carbon monoxide can spread in a burning building. The egress model, known as SIMULEX, shows how long it takes crowds of different sizes to leave a structure before conditions become untenable.

Even with the latest fire-modeling tools at its disposal, Code Consultants had to make some preliminary assumptions, Miller acknowledges.

"We tried to be conservative, but we also tried to be reasonable," he says. For example, Miller's group initially assumed medium and fast fire conditions and later revised the model, based on committee input, to include ultra-fast fires, which reach 1,000 BTUs in 75 seconds. It also assumed that one of the hypothetical 5,000-square-foot (465-square-meter) club's two required exits was blocked and that the crowd would not try to evacuate until the flames were 5 feet (1.5 meters) high. Modelers also assumed a 10-foot (3-meter) ceiling. Although current standards allow a lower ceiling height, Miller points out that a nightclub with such a low ceiling would be unable to accommodate an elevated stage.

Once Miller's team established how quickly the building would become untenable, it began reducing the size of the crowd until it found the number of patrons that could all exit the building safely before the situation became untenable: 100. On the night of the Station fire, there were more than 400 people in the club.

Miller's analysis proved to be an important tool in the committee's decision to recommend a 100-person fire-sprinkler threshold for existing structures, rather than a 50-person threshold, a recommendation the Standards Council ultimately adopted in NFPA 101®, Life Safety Code®.

Although "the modeling wasn't an absolute means for determining the threshold," Miller says, "it was a useful tool for providing the committee with a scientific and engineering basis for discussion."
in Boston. Some 30 committee members and alternates, as well as Station survivors, victims’ families, and members of the fire-safety community, gathered to discuss the fire and a similar crowd-crush incident not long before at Chicago’s E2 nightclub. That incident left 21 people dead.

The conversation focused on whether the 2003 editions of NFPA 5000™, Building Construction and Safety Code™, and NFPA 101®, Life Safety Code®, should be amended immediately in response to the tragedies or whether possible changes should be considered later, when the 2006 editions of the codes are drafted.

Participants quickly agreed that the situation was too critical to risk waiting any longer and proposed that NFPA issue emergency code amendments, called Tentative Interim Amendments (TIAs). TIAs, which are processed in accordance with Section 5 of NFPA’s Regulations Governing Committee Projects, haven’t gone through the full codes- and standards-making process that includes public proposals and comments in a Report on Proposals and a Report on Comments. They’re effective only between editions of a document and automatically become a proposal for the next edition of the document, when it’s then subject to all of the procedures of the full codes- and standards-making process.

The committee reviewed numerous TIA proposals submitted by groups such as the International Fire Marshals Association (IFMA) and drafted its own proposals, based on suggestions voiced at the meeting.

Ron Farr, chief/fire marshal with the Kalamazoo Township Fire Department in Michigan and immediate past president of IFMA, submitted a number of TIAs recommending sprinklering new and existing nightclub-like buildings. The challenge, he recalls, lay in differentiating places of public assembly where people were most at risk from those less dangerous.

“We were after the occupancies where people wouldn’t be able to get out in a timely manner. Situations where there might be loud music, flashing lights, large crowds, and alcohol,” recalls Farr, who was later appointed to the committee along with other representatives of the fire-service and sprinkler-manufacturing communities.

The group was also torn as to what the occupancy threshold for sprinklering such buildings should be. Farr initially argued that all existing nightclub-like occupancies with 50 or more occupants should be sprinklered but was ultimately convinced, after subsequent fire modeling, that only existing facilities with more than 100 occupants needed to be sprinklered because smaller crowds would have time to exit a burning building, such as a nightclub.

On July 25, the Standards Council reviewed and issued the technical committee’s recommended TIAs for NFPA 101 and NFPA 5000. The TIAs, which went into effect August 14, require fire sprinklers in new nightclubs and similar assembly occupancies and in existing facilities that accommodate more than 100. They also require building owners to inspect exits to ensure they’re free of obstructions and to maintain records of each inspection. The presence of at least one trained crowd manager is required for all gatherings, except religious services, with more than 250 people, with more than 250 people, unless the authority having jurisdiction makes an exception. For larger gatherings, additional crowd managers are required at a ratio of 1:250. Finally, the TIAs prohibit festival seating for crowds of more than 250 unless a life-safety evaluation approved by the authority having jurisdiction has been performed. Festival seating, according to NFPA 101, is a “form of audience/spectator accommodation in which no seating, other than a floor or ground surface, is provided for the audience to gather and observe a performance.”

“I think the process worked very well and spoke well of NFPA’s ability to respond to input and implement TIAs in a timely way,” Farr says. “The organization moved fast to come up with a solution to the problem. Everyone realized the importance and the value of what had to be done.”

Investigators carry away one of the burned front doors from The Station nightclub.
The states take action

NFPA wasn’t the only organization that saw the fire as a call to arms. Rhode Island and Massachusetts, the states whose residents were most affected by the disaster, also set about reviewing their fire and building codes.

The Rhode Island General Assembly created a 17-member special commission to study the state laws concerning pyrotechnics and public safety. NFPA staffers testified twice before the commission and provided technical support to the state fire marshal’s office, which listened to two months of testimony from fire and crowd-control experts, business owners, the public, and survivors of the fire.

On July 7, less than five months after the Station blaze, Rhode Island Governor Donald L. Carcieri signed the group’s recommendations into law. As a result, Rhode Island adopted NFPA 1, Uniform Fire Code™, and NFPA 101, as amended by the Rhode Island Fire Safety Board, for new and existing buildings. The law eliminated a “grandfather” clause that previously exempted older buildings from meeting current building code requirements.

“That was probably the biggest thing to come out of that legislation,” says Tom Coffey, executive director of the Rhode Island Fire Safety Board. “Prior to that, we could only adopt NFPA 1 and NFPA 101 for new construction. Now, new and existing structures will be covered.”

The new standards go into effect February 20, the first anniversary of the Station fire.

Rhode Island also adopted NFPA 1126, Use of Pyrotechnics Before a Proximate Audience, which restricts the indoor use of pyrotechnics to the largest facilities. Holders of pyrotechnic licenses issued or renewed after February 20, 2004, must demonstrate satisfactory knowledge of NFPA standards for the use of pyrotechnics.

Finally, the law requires that fire sprinklers be installed in all “special amusement buildings” with occupancy levels of 150 or more by July 1, 2006. Public-assembly spaces with occupancy loads of more than 300 must comply by July 1, 2005. The only exception is fully alarmed places of worship and crowd-control experts, business owners, the public, and survivors of the fire.

In Massachusetts, home to about a third of the people killed in the fire, the Task Force on Fire and Building Safety presented Public Safety Secretary Edward A. Flynn and Governor Mitt Romney with its report in September. The committee recommended eliminating the grandfather clause that permits existing public-assembly buildings to operate without fire sprinklers.

In addition, the 32-member task force recommended fire sprinklers be installed within three years in all nightclubs, discos, bars, and dance halls that hold more than 50 occupants. To improve emergency egress, it recommended that such facilities improve exit identification, invest in automatic music-shutdown devices, and install main exit doors 72 inches (188 centimeters) wide. The group’s report recommends banning pyrotechnics in such facilities and prohibiting the use of foam plastics on interior finishes in unsprinklered clubs. Changes suggested by the task force are being drafted into legislative statutes and will be submitted to the General Court and regulatory agencies.

Connecticut also passed legislation imposing harsher penalties for the kinds of safety violations that fueled the fire. A newly enacted law empowers local fire marshals and law enforcement officials to shut clubs down immediately if they feel overcrowding, blocked exits, or indoor use of pyrotechnics pose a risk of death or injury. The law also requires club owners and managers to make an announcement identifying emergency exits before a performance or event.

Monday-morning quarterbacking

The code changes made by NFPA and these states may provide little solace to families of the victims and those injured in the Station and E2 incidents. They certainly won’t restore lost lives. But next time music lovers step into a nightclub to hear a band, the public-safety tips posted on the NFPA Web site may inspire them to locate the nearest emergency exits before a performance or event.

As for the code amendments themselves, they will undoubtedly save lives. Grant says NFPA demonstrated the effectiveness and flexibility of the code-amendment process in the wake of the two incidents.

“From the perspective of the families of the victims, nothing is ever fast enough,” he says. “But people in the code-writing community know you can’t write codes over night. Codes are a reflection of the will of society on a technical topic, and we have to go to lengths to ensure their restrictions make sense. For NFPA, it’s generally a three-year cycle. We don’t want to repeat the E2 and The Station nightclub incidents.”
Over 25 years ago, the portable fire extinguisher industry learned that certain chemicals could damage the integrity of pressurized stainless-steel cylinders that were internally exposed to them. Because the damage wasn’t obvious, it wasn’t until a weakened cylinder ruptured as it was being recharged and pressurized that the problem became obvious.

Several deaths and injuries ultimately led to changes in the standards governing portable fire extinguisher hardware designs. NFPA 10, Portable Fire Extinguishers, was revised to address issues associated with inspection, maintenance, recharge, and hydrostatic test requirements and to prohibit the use of substitute recharge materials or extinguishing agents. In addition, the American National Standards Institute and Underwriters Laboratories, Inc. (UL) tightened the material construction requirements of their extinguisher cylinder design standard and established long-term material-compatibility exposure tests.

Since that time, equipment manufacturers and third-party testing and listing agencies have been thorough in examining the various extinguishing agents and additives permitted in listed portable fire extinguishers. Some manufacturers even specify that recharge solutions should use only fresh, potable water to make the mixtures.

The current edition of UL’s Equipment Listing Directory for water (GNFV), foam (GJZT), and antifreeze (FWTX) extinguishers contains specific references designed to alert local authorities to the limitations of these products. Among other things, it notes that the “reliability of operation may be endangered by use of charges other than those furnished by the manufacturer,” and “operation of these units may be affected by the use of foam concentrates or components other than those specified and furnished by the manufacturer of the device.”

In the directory’s liquid-additive approval category for wetting agents (GOHR), it even states that “their corrosive action has not been determined on other metals, such as stainless-steel alloys. Therefore, the use of wetting agent solutions should be limited to equipment where the suitability of the wetting agent for use in that equipment has been determined.”

The newest version of NFPA 10 guides users and the portable fire extinguisher industry on the practices that could damage and weaken the integrity of pressurized stainless-steel cylinders during routine recharge.

By J.R. Nerat
formed and documented an extensive metallurgical review and a long-term material-compatibility test under pressure on a cylinder, substituting extinguishing agents or additives can be a recipe for disaster.

While many water-based portable fire extinguishers can be charged with compressed air, some models specifically require dry nitrogen or argon. Contaminated or improper sources of expellant pressure may also harm the cylinder.

For safety reasons, NFPA 10 specifically requires all fire extinguisher pressurization sources to use properly calibrated pressure gauges to determine an extinguisher's charge pressure. NFPA 10 also requires the use of regulated pressure sources with settings limited to 25 psi over the intended charge pressure.

Problems may also arise when a stainless-steel fire extinguisher is modified for other uses, such as solution dispensers or sprayers. Some units even have modified add-on labels, creating confusion about their intended function or proper use. Such labels may also violate federal "right to know" regulations that require properly identifying extinguisher contents.

The method of pressurizing extinguishers has also raised some concerns, since untrained personnel account for many of the problems and injuries related to extinguisher pressurization incidents. To discourage untrained personnel from recharging certain stainless-steel water-type fire extinguishers, manufacturers recently began eliminating the fixed air-pressurization adapter on the side of the extinguisher valve that accommodates the same pressurization sources used to inflate automotive tires.

**Awareness problem**

However, untrained personnel aren't the only culprits. Most fire-service personnel aren't familiar enough with fire extinguisher service regulations to understand how material-compatibility exposure issues can affect pressure vessels over time. Unlike other types of extinguishing-agent tanks the fire service uses, portable fire extinguishers contain extinguishing solutions under pressure for extended periods.

Unfortunately, this lack of awareness may not only compromise personnel safety, it may also expose the department or municipality to liability.

Last year, a fire extinguisher service company in Pennsylvania received several extinguishers from the local fire department for periodic maintenance. When the service technician examined the inside of the extinguishers, he smelled what he thought was a combustible odor in one unit. Further investigation revealed that fire-department personnel had filled it with a mixture of fuel and paint thinner to help them ignite training fires.

A closer internal and external visual examination of the five-year-old extinguisher didn't indicate a potential problem, but subsequent integrity testing revealed that it had been severely weakened. When the cylinder was subjected to a pressure-test evaluation, it burst at a point just above its normal operating pressure.

Not only did this fire department violate the codes pertaining to portable extinguishers, but it unknowingly compromised the safety of its own personnel and the extinguisher service company employee.

**Code compliance**

Hand-portable fire extinguishers should never be filled or recharged with any material, additive, or agent but that for which they have been specifically designed and tested. Substituting recharge materials or using additives in a hand-portable fire extinguisher is a direct violation of both NFPA standards and federal regulations.

The 2002 edition of NFPA 10 specifically states in Paragraph 6.4.1.4 that "no fire extinguisher shall be converted from one type to another, nor shall any fire extinguisher be converted to use a different type of extinguishing agent. Fire extinguishers shall not be used for any other purpose than that of a fire extinguisher." Paragraph 7.1.4(9) further states that "where a fire extinguisher has been used for any purpose other than that of a fire extinguisher . . . it shall be condemned or destroyed by the owner or at the owner's direction."

Those responsible for enforcing safety regulations should be aware of these potential problems and should never permit anyone to modify or alter portable fire extinguisher hardware or agent charge solutions. Such practices may endanger people, compromise insurance policies containing omission clauses, and raise other liability exposure issues.

Fire extinguisher recharge information is clearly specified on the extinguisher's original nameplate under "recharge instructions," as required by the listing agency's labeling requirements. For additional information on the proper service of portable fire extinguishers, you may refer to the manufacturer's service manual and the following sections of NFPA 10, CFR-29 OHSA regulations, and National Association of Fire Equipment Distributors publications:

- 2002 edition NFPA 10 paragraphs: 1.3.1, 1.3.2, 1.3.3, 1.6, 6.1.3, 6.1.4, 6.4.1.2, 6.4.1.4, 6.4.2.2, 6.4.2.3, 6.4.3.1, 6.4.4.1, 7.1.4(5), 7.1.4(9), 7.1.5, A.1.2, A.1.5.14 (1)(2), A.6.4.3.1 and A.6.4.4.1
- NAFED: industry informational pamphlet "When fire extinguishers are dangerous"
- 2002 OSHA:
  - CFR-29 part 1910.1200 Hazard Communication
  - CFR-29 part 1910.157 Portable Fire Extinguishers (c) (2), (e) (1)
  - CFR-29 Appendix to Subpart L 1910.156 (6) fire fighting equipment

J.R. Nerat is the NFPA Industrial Section representative on the Portable Fire Extinguisher Technical Committee.
More than 800 professionals from a wide cross-section of disciplines gathered in Reno for the 2003 NFPA Fall Education Conference. What they experienced can only be described as astounding!

The immensely popular pre-conference seminars attracted over 200 professionals who learned about the latest developments in building construction and safety, fire and explosion investigation, and the uniform fire code among other subjects. As an added bonus, attendees took home valuable workbooks, handbooks, and copies of the relevant codes.

The special homeland security track also proved to be popular with attendees. Among the highly regarded sessions offered in this track was *Special Events in Your Town: What Do We Do Differently Now That We Have Homeland Security?* presented by T.J. Kennedy, who is the program manager, safety and security at the 2004 Summer Olympics in Athens.

Many NFPA members took advantage of their opportunity to shape the direction of the codes and standards they use on a regular basis by participating in the Technical Committee Report Session at which proposed NFPA codes, standards, recommended practices, and guides are voted upon by the membership. Among the items on the agenda for Reno, was NFPA 70E, the standard for electrical safety requirements for employee workplaces.
The Fall Education Conference, once again proved to be an amazing opportunity to learn from renowned experts, network with colleagues from around the world, and take home knowledge that can be readily implemented in the workplace.

“I cannot express in words what a thrill and pleasure it was to attend the Fall Educational Conference in Reno. The conference and the attendees were beyond my expectations. I have been a member of several associations during my career, and none matched the caliber of this group. I look forward to a long relationship with the NFPA.”

Deborah Parz, College of Hotel Administration Student
University of Nevada – Las Vegas

If you missed this event or wish to reinforce what you learned during the 2003 NFPA Fall Education Conference, audio transcripts are available for purchase in cassette, CD, or MP3 format. Visit www.nfpa.org/meetings to make your purchase today!
SECTION NEWS

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HOT ISSUES
Committee Meetings
The Technical Committee on Aircraft Rescue and Fire Fighting met on October 28 and 29 in Montreal, Canada, to act on public comments on NFPA 405, Recurring Proficiency of Airport Fire Fighters, and NFPA 422, Aircraft Accident Response. The committee is also revising NFPA 408, Aircraft Hand Portable Fire Extinguishers, but has received no comments on the Report on Proposals.

The Airport Facilities Committee, which met in Miami on November 11 and 12, acted on public comments on NFPA 409, Aircraft Hangars. The committee didn't receive any comments on the other document it is revising, NFPA 423, Construction and Protection of Aircraft Engine Test Facilities.

No one submitted comments on the proposed revision of NFPA 410, Aircraft Maintenance, so the Aircraft Maintenance Operations Committee did not meet.

The revisions of all six documents will be proposed for adoption at the technical sessions at the NFPA World Safety Conference and Exhibition this May in Salt Lake City, Utah.

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HOT ISSUES
Writing Successful Grant Proposals
GERRI PENNEY, M.Ed. AND
PAUL G. KUSROW, PH.D.
There was a time when the fire service said, "The cops get all the money they ask for, and they have lots of grants available to them." Since the passage of the Assistance to Firefighters Grant in 2001, however, we can no longer fall back on that rationalization. All fire departments are now eligible to receive money for needed equipment, operations, training, emergency medical services, and fire prevention.

These days, we tend to hear comments like, "My department must be on the black list. This is the second time I've applied, and we still didn't get a grant."

In reality, of course, there is no black list. There are just good grant writers and bad grant writers. And chances are an unfunded grant application could have become a fundable application with a better-written grant proposal.

Start with the fact that funders want you to give them money. That's their job. They know you need the equipment or programs you're requesting, but they can't give you the money unless you follow the program guide. If you don't follow the guidelines, you don't get the money.

The single most important rule in writing a successful grant is to do what's asked of you. Read the rules and do what you're told. As the old saying goes, "When all else fails, read the directions."

If you feel you're out of your element when you sit down to write your grant proposal, you might want to consider calling an expert. Some grants actually fund a grant writer as a pre-award expense. If the grant for which you're applying doesn't, you might seek help from your local school board or business community. Or you can take a grant-writing class. Local community foundations often offer training in grant writing. Or drop into your local library and peruse the reference section for books on government funding, foundations, and grantor associations. You can even search the Web for how-to articles on grant writing.

Grant-Writing Tips
If you decide to go it alone, here are some tips that will help.

The Introduction: Be brief. Introduce your fire department as it is today. The reviewer doesn't need to know its history. Highlight the division that will administer the grant and build its credibility by citing awards, honors, years of service, and so on.

The Need: Be specific. Explain your needs using exact statistics whenever possible. Make it "78 juvenile fire setters," not "many juvenile fire setters."

The Narrative: Be concise. Lay out the solution to your needs, including the grant project's objective, methods, and evaluation criteria.

The Objective: Be measurable. Detail who will do what, when they'll do it, and how you're going to measure the results. These areas must be covered. If you can't define the project, you can't evaluate or budget for it.

The Methods: Be logical. Explain the program you've devised and convince the funders your methods are the best available to respond to the problem in your needs statement. Use proof. Cite examples of the way this method worked...
In a similar community, and be clear. A confused reviewer is not a happy reviewer. Be concise. The funder may have to read thousands of grant proposals, so try to say what you have to say in 2 or 3 pages, not 10. But do not leave anything out or any questions unanswered. The reviewer can't score your application if he or she has questions.

The Evaluation: Be sure. The reviewer wants to know your program will solve the problem. Make sure you can collect the process and product data you'll need to gauge the successful completion of your objective. You can use standardized evaluation instruments or design your own, but you must be able to measure your results.

The Budget: Be fiscally responsible. Don't pad your budget. Good proposal reviewers know the cost of the items you'll be using, and they're being trusted to get the biggest bang for their buck. Don't put anything in the budget, particularly large items, that you haven't explained in the narrative. Use exact numbers in dollars, without cents. This is especially important in electronic applications. Do not round up to the nearest hundred dollars. Be accurate and remember there is no such thing as "miscellaneous" cost.

The Financial Need: Be explicit. Explain exactly why your department or community cannot fund this program and give examples that support your statements. Show how your community has searched for funds, donations, and in-kind services and tell the grantor why you're approaching him or her for assistance.

There are many sources of information available to the grant writer who wants to perfect his or her skills. All you need to do is take advantage of them. For further information, contact either of us at (561) 616-1120 or fussrow@fau.edu.

Gerri Penney, community education coordinator with Palm Beach County, Florida, Fire Rescue, has been a peer reviewer for the Assistance to Firefighters Grant for two years. Paul G. Kussrow is professor of leadership at Florida Atlantic University, where he teaches grant and proposal writing to doctoral students.

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Electrical
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HOT ISSUES
Fire Protection Research Foundation to Manage Two New Electrical Projects
The Fire Protection Research Foundation recently launched a project to evaluate the relationship of electrical component aging and the residential electrical fire problem in response to the electrical community's concerns that aging residential electrical systems may result in electrical fires. Project participants hope to determine why there is a residential electrical fire problem in the United States, despite our comprehensive electrical code.

Among the potential reasons may be that electrical components, like all products, age over time. Coupled with this, residential electrical systems are seldom inspected once they've been installed.

The project will follow two tracks: an enhanced electrical fire investigation program and a sampling and analysis of installed components. These data-gathering initiatives will provide code writers with critical information, especially those revising NFPA 73, Electrical Inspection Code for Existing Dwellings, and NFPA 70, National Electrical Code® (NEC®), as well as authorities having jurisdiction (AHJs), electrical manufacturers, installers, property owners, and insurers.


Electrical Arc Blast Measurement Project Launched
The Foundation is also undertaking a new consortium-based project to measure the explosive, thermal, and spectral effects of arcing electrical faults, with the goal of improving the safety of individuals exposed to them. Project participants will develop independent data to characterize hazards, document potential standardized measuring protocols, and identify personal protection methods.

Phase I, conducted by the National Institute of Standards and Technology's Electronics and Electrical Engineering Laboratory, will consist of a literature review and technical analysis. Phase II, designed by the project's technical advisory committee, will be the test and analysis program to rate arc fault phenomena.

Members of the NFPA 70E, Electrical Safety Requirements for Employee Workplaces, Technical Committee requested the project in light of a growing number of injuries caused by arc faults. The information will help NEC code-writers quantify the hazard and NFPA 70E standards-identifiers methods to protect electrical workers. The research will provide independent documentation to AHJs, manufacturers, utility companies, chemical companies, protective clothing manufacturers, regulators, insurers, and approvals organizations.

Inquiries about, and participation in, the project's technical advisory committee and sponsorship consortium are welcome. Call Steve Hanly at (617) 984-7284 for information.

2005 NEC Revision Update
The 19 NEC code-making panels met in San Diego, California, from December 1 to December 13, 2003, to act on an impressive number of public comments.
submitted on the 2005 NEC Report on Proposals (ROP). The NEC Technical Correlating Committee is scheduled to meet in Biloxi, Mississippi, from February 23 to 27 to review the actions taken on public and code-making panel comments, and the 2005 NEC Report on Comments (ROC) will be available in print and electronically in April 2004.

The ROP and ROC will be presented to NFPA members at the Technical Committee Report (TCR) session on May 26, 2004, at the NFPA World Safety Conference and Exposition® in Salt Lake City, Utah, to be held from May 23 to 26.

If the 2005 NEC is approved for adoption, the NFPA Standards Council will adopt it at its July 2004 meeting in San Francisco, California. The first printing of the document is scheduled to be available in September 2004.

Committees Seeking Members
The Committee on Electrical Systems Maintenance is seeking members in all interest categories, except special experts. The committee is responsible for NFPA 73, Electrical Inspection Code for Existing Dwellings.

The Committee on Electrical Systems for Manufactured Housing also needs members in all interest categories, except manufacturer and enforcer. This committee is responsible for chapters in NFPA 501, Manufactured Housing; NFPA 501A, Fire Safety Criteria for Manufactured Home Installations, Sites, and Communities; and NFPA 225, Model Manufactured Home Installation Standard.

Finally, the Committee on Single- and Multiple-Station Alarms and Household Fire Alarm Systems, responsible for chapters in NFPA 72®, National Fire Alarm Code®, is seeking members in all interest categories, except manufacturers and labor.

Tentative Interim Amendments Proposed
The following tentative interim amendments (TIAs) were proposed to the NFPA, and the NFPA Standards Council will determine whether to issue them at its January meeting. The Standards Council reviews the technical committees' or code-making panels' ballots and, where applicable, the ballots of the technical correlating committee, as well as public comments and any other information submitted to determine whether to issue a TIA. NFPA solicits public comment for all proposed TIAs, and the deadlines and call for comments are published in NFPA News.

Proposed TIA to NFPA 70-2002, National Electrical Code®

TIA Log No. 724
Reference: Title of Part II of Article 600, and Section 600.30
Submitter: Randall Wright, RKW Consulting

1. Revise Article 600.30 to read as follows:
   II. Field-Installed Sign Wiring and Skeleton Tubing 600.30 Applicability. Part II of this article shall apply only to field-installed sign wiring and skeleton tubing. These requirements are in addition to the requirements of Part I.

Proposed TIA to NFPA 110-2002, Emergency and Standby Power Systems

TIA Log No. 764
Reference: A.7.9.1.2

**Fire Service Exams**

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- The firefighter entry-level exams are designed to assess cognitive skills necessary for successfully performing as a firefighter.
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International Public Management Association for Human Resources
The Standards Council's decision will be published in NFPA News and in "Section News" in NFPA Journal. TIAs are tentative because they are not processed through the entire codes- and standards-making procedures and interim because they are only effective between editions of the document. TIAs automatically become proposals for the next edition of the document, when they are subject to all the codes- and standards-making procedures.

The complete technical background of, and substantiation for, these proposed TIAs are available at www.nfpa.org/Codes/NFPANews.asp.

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Health Care
WEB SITE: http://www.nfpa.org/healthcare
CHAIR: Richard Strub, Life Care Centers of America, Cleveland

HOT ISSUES
Chair's Corner by DICK STRUB
The NFPA Journal staff extended the deadline for this issue to allow us to include in "Section News" timely information from the Fall Education Conference, held in Reno, Nevada, from November 16 to 19. We thank them for their consideration.

A two-day pre-conference seminar on NFPA 99, Health Care Facilities, was held on Friday and Saturday, November 14 and 15, before the conference began. On Sunday morning, the section's Codes and Standards Review Committee presented a well-organized session addressing the proposed codes and standards that would affect health-care professionals. As a result of the efforts of the committee chair, vice-chair, and NFPA staff, we've gotten approval to award CEUs for this session in the future.
The standing committees met on Monday morning to continue planning for the World Safety Conference and Exposition, to be held in Salt Lake City, Utah, from May 23 to 26. There was a good deal of discussion about the fact that the 2004 Fall Education Conference in Miami will be the last NFPA fall meeting. The consensus on going to a single meeting per year seemed to be positive as it will enable more of us to attend in person and result in improved educational programs. Many details are still being worked out, but we hope the bumps we encounter will be minimal.

During the conference, Tom Bulow presented a session on health care emergency preparedness and NFPA 1600, Disaster/Emergency Management and Business Continuity Programs. Section members also participated in a panel discussion of fire modeling alcohol-based hygiene solutions and attended several other educational sessions, including one aimed at the hospital emergency incident command system.

In addition, the Executive Board finished an executive session that began in Baltimore in August to update the section mission statement. It now reads:

"The NFPA Health Care Section exists to serve the health-care industry and those who support that community by providing quality/affordable education; influence and harmony in the development and application of effective codes and standards; and a forum for information exchange."

In addition, the Board addressed the deliverables the section should provide its members and discussed creating a mechanism to measure our effectiveness in revitalizing the section. In conjunction with Business Meeting attendees, the Board also decided to combine the Executive Board meeting and the Business Meeting, starting in Salt Lake City in May.

Finally, the Technical Report Session on Wednesday was a near record-breaker for brevity, winding down well before 3:30 that afternoon.

NFPA 99, Health Care Facilities, Being Revised

The 2002 edition of NFPA 99, Health Care Facilities, is currently being revised for the 2005 code cycle. The technical committees have finished processing the public and committee proposals, which can be downloaded from www.nfpa.org/Codes/index.asp, and are now awaiting public comments. The comment closing date is April 2, 2004. When the Report on Proposals and Report on Comments are completed, NFPA members will vote on the document in Miami in November 2004.

Codes and Standards Review Committee News

by MIKE DANIEL, COMMITTEE CHAIR

I'd like to start by thanking the section membership for your support during the past year. As a result of your time and effort, the Health Care Section remains active in the code-making process and a leading proponent of quality educational programs. Although the year has just begun, it's not too early to start planning for the 2004 World Safety Conference.
and Exhibition to be held May 23 through 26 in Salt Lake City.

Once again, the Health Care Section will sponsor the Codes and Standards Review Forum to discuss documents, proposals, and comments that might affect the health-care industry. There are always opportunities at the forum for discussion to ensure a clear understanding of the issues and to help formulate positions for the Executive Board's consideration.

Documents up for adoption at the meeting include:

- NFPA 45, Fire Protection for Laboratories Using Chemicals;
- NFPA 70, National Electrical Code®;
- NFPA 241, Safeguarding Construction, Alteration, and Demolition Operations; and
- NFPA 780, Installation of Lightning Protection Systems.

With these documents on the agenda, the discussion is sure to be lively, especially those dealing with NFPA 70 and NFPA 96.

The Committee will also review documents reporting to the 2004 Fall Education Conference in November, topics of interest to the section, and critical reporting to future meetings, as time permits.

Don't miss this opportunity to stay up-to-date on issues that could affect you and your organization. On behalf of the Executive Board, I look forward to seeing you in May and November.

NFPA President Calls for Fire Sprinklers in all Nursing Homes

In a statement released on October 16, NFPA President Jim Shannon called for all U.S. nursing homes to be equipped with fire sprinklers in the wake of two recent nursing home fires in Hartford and Nashville that killed 24 people. A quarter of all nursing home fires in the United States occur in unsprinklered facilities, and it's estimated that 10 to 15 percent of all U.S. nursing homes are unsprinklered.

For a full copy of the news release, go to http://www.nfpa.org/MemberSections.

HOT ISSUES

IFMA Welcomes Two New Chapters

On November 15, the NFPA Board of Directors approved two new IFMA Chapters, bringing the total number of chapters to 23. Please welcome the Southern Nevada Fire Prevention Association and the Wisconsin Fire Marshals Association, to which IFMA Chapter Charters were presented at the IFMA Business Meeting in Reno, Nevada, last November.

IFMA Proposes TIA to Life Safety Code® Based on Nursing Home Fire

In the wake of the tragic nursing home fire in Hartford, Connecticut, last year, IFMA submitted a tentative interim amendment (TIA) to the Life Safety
Welcome to the New Year! Your Section WEB SITE: jurisdic-
tion who must approve or review training programs, the "Management
The International Fire Marshals Association
Chair's Corner
HOT ISSUES
by MIKE NEWMAN
The Board has worked actively with NFPA's Marketing Department to
improve your situational awareness, and "opt-in" if you wish to include your
name in the 2004 Directory. We're notifying members through NFPA Journal,
on the Web page, and by e-mail for those of you for whom we have contact information. If all goes ahead as planned, we expect to have the first updates available during the World Safety Conference and Exposition in Salt Lake City next May. So keep looking for the message inviting you to opt-in—and come visit the IFPS booth in Salt Lake City.
Thanks for your support!

Board Welcomes Christina F. Francis
During the IFPS Board meeting last September, Board members voted to fill the vacant position left by Dave Phillip, formerly with Nestle Purina, who changed jobs and was unable to fulfill his term. The Board is pleased to announce that it has appointed Christina Francis of Procter & Gamble Co. (P&G) to fill the open slot. We appreciate Dave's contribution, and we welcome Christina to the group.
Christina is a fire protection engineer with experience in design, construction management, and loss prevention for a variety of industrial projects throughout the world. Her primary responsibilities include developing and managing P&G's Global Fire Protection Program, which oversees more than 140 global manufacturing sites and technical centers.
She has a bachelor's degree in Mechanical Engineering from Auburn University and is a registered professional engineer in fire protection and a Certified Fire Protection Specialist. She is also a member of the Society of Fire Protection Engineers, currently serving as vice-president for the local chapter.

Diesel Engine Longevity: What You Should Know
by RONALD A. STEIN, P.E., CSP
It's not unusual to see a 15-, 20-, or 25-year-old diesel-engine-driven fire pump in an industrial setting, where a 20-year-old installation may have less than 600 hours on the meter. The same may be true for emergency generator applications, too.
Although diesel engines aren't designed to last forever, many seem to. Sometimes, however, they're neglected and a lot of fire protection equipment is—not necessarily through lack of inspection, testing, and maintenance, but through a lack of regular refurbishment. In reviewing 5- and 10-year capital plans, we often see line items for roofing and for mechanical and life extension and replacement, but we rarely see diesel engine driver overhauls or fire pump and emergency generator replacements.
Another issue is the availability of parts for older models. Diesel engines have "wear-out" parts, such as filters and gaskets, and "core" parts. If needed wear-out parts aren't available during a major overhaul, you may be vulnerable. Even if you stock the recommended spares, many have a shelf life of less than 10 years.
While we may not need to rally for the wholesale replacement of diesel drivers nationwide, we do need, as industrial fire protection professionals, to recognize that these things have a finite life cycle, one we don't want to end unexpectedly during an emergency.
At what point in a diesel driver's lifetime does one need to think about replacing it? There's no universal answer.
Rather than counting the rings in the cast iron, perhaps we should look closer at things such as fuel quality and oil analysis. NFPA 20, Installation of Stationary Pumps for Fire Protection, recently added language requiring that stored fuels be sampled and tested to promote fuel stability, control microbial growth, and
remove free water and particulate matter. You may want to add these provisions to your own checklists.

Identifying the predominant sources of engine failure may also prove valuable in determining the life-cycle equation. Are the core engine components themselves the culprit, or are the culprits ancillary components, such as filters, heat exchangers, and fuel injectors?

Regardless of the fire pump or generator installation’s age, it must be inspected, tested, and maintained in accordance with the requirements of NFPA 25, Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems. This appears to be the only way we can gauge the reliability of our diesel-engine-driven fire-safety installations.

Ronald A. Stein, P.E., CSP, is assistant director of Property Risk Control for Aon Risk Services in Kansas City.

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Latin American
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SECTION CHAIR: Eduardo Abé, Tecin Rosenbauer S.A., Buenos Aires, Argentina

HOT ISSUES
NFPA’s Latin American Chapters
NFPA’s Board of Directors recently approved a Colombian Chapter, the second NFPA chapter in the region. Chairing the chapter is NFPA Board member Jaime Moncada-Pérez, founder and president of OPCI, the Latin American Association for Fire Protection. OPCI has been responsible for translating more than 30 NFPA codes and standards into Spanish.

At the first meeting of the Argentinian Chapter’s Board of Directors, which took place on November 21, the group began drafting the bylaws and business plan to present to the NFPA Board of Directors at its March 24 meeting. The goal is to develop NFPA objectives in Argentina.

Work is also under way to establish Puerto Rican, Dominican, and Venezuelan chapters. For more information, visit www.capitulosnfpa.org.

Americas’ Fire Expo Web Site
In preparation for the fourth annual NFPA Americas’ Fire Expo from July 20 to 22, we’ve redesigned the show’s Web site to make it even more useful. We’ve added a Passport/Visa Center, providing information attendees will need to obtain a visa, including a visa letter request form. We’ve also added a Press Center and a Vacation Center, where attendees who want to extend their stay in Miami can research available activities and attractions, and link to travel agencies with which we are partnering.

As in past years, we also provide an overview of the show, the conference, and the speakers. And as of February, you’ll be able to register online, too.

Visit us at www.nfaamericasfire.com, and start preparing your trip to Miami!

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Saturday’s program continued with more excellent speakers. IAFC Government Relations Director Alan Caldwell and Chief Jim Broman spoke on communication challenges and leadership, respectively. And just as the participants were beginning to tire, Dr. Steve Long-Nguyen Robbins energized the group with an entertaining presentation on cultural competence and inclusiveness. The program concluded with a discussion of volunteer and combination departments led by Chief Larry Curl, communications solutions presented by Nextel, and a look at state fire chiefs associations and mutual-aid systems facilitated by IAFC Second Vice-President Bill Killen. IAFC Executive Director Garry Briese and President Mitchell wrapped up the program with a presentation titled “Who Is the Fire Service,” followed by a town hall meeting hosted by Bob DiPoli.

The Metro delegation, led by Chair Wes Shoemaker from Winnipeg, Manitoba, included Secretary Kelvin Cochran of Shreveport, Louisiana; Board Member Bobby Ojeda of San Antonio, Texas; IAFC/NFPA Board Member Luther Fincher of Charlotte, North Carolina; and Executive Secretary Russ Sanders of Louisville, Kentucky, retired. Joining the executive team were Metro Section members Ray Alfred of Jacksonville, Florida, and Washington, D.C., retired; Ray Barnes of Aurora, Colorado, retired; Stephen Dean of Mobile, Alabama; Al Connors of Grand Rapids, Michigan, retired; Mary Beth Michos of Prince William County, Virginia; USFA Administrator Dave Paulison of Miami-Dade, Florida, retired; Mark Light of Henrico County, Virginia, retired; Bill Peterson of Plano, Texas; Ed Wilson of Portland, Oregon; and Shimon Romach and Moshe Vardi, retired, both from Israel.

The two-day program proved to be a microcosm of the three-week Kennedy School fellowship program. Intense, controversial, challenging, and rewarding, the course led many of us to question our personal (and sometimes parochial) views of leadership by the middle of the first session.

“If came here with a clear understanding of what leadership is,” said one chief during the first break, “but now the entire concept seems more like an enigma packaged in a riddle.” Nonetheless, we accomplished a lot in two days. We debated challenges facing the fire service, discussed the difficulties and dangers of exercising leadership, and examined technical and adaptive solutions to problems. We looked at the consultant’s roles and responsibilities and the importance of identifying and including stakeholders in the decision-making process. And in a series of creative exercises, we discussed, debated, and argued many of our personal leadership beliefs and strategies before we finally re-defined them. By the end of the program, we’d finally exposed the enigma and solved the riddle!

For many years, NFPA alone underwrote the tuition and housing costs for the chiefs attending the fellowship program, while the International Association of Fire Chiefs assisted with travel expenses, and the United States Fire Administration provided in-kind support. Today, these three organizations, along with the International Fire Service Training Association, share all program expenses. They also sponsored the two-day workshop.

Special thanks go to U.S. Fire Administrator R. David Paulison for having the vision to organize the work-
Denis Onieal, Training Specialist Chuck Burkell, and Mrs. Roxane Deardorff for making it the special program it was.

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SECTION CHAIR: James Gourley, Fire Protection Engineer, Glenside, Pennsylvania

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Research
WEB SITE: http://www.nfpa.org/researchsection
CHAIR: Samuel Dannaway, Dannaway and Assoc.

HOT ISSUES
Research Foundation Launches Electrical Projects
The Fire Protection Research Foundation has initiated two new projects in the electrical arena, the Electrical Arc Blast Measurement Research Project and the Residential Electrical System Aging Research Project.

The Electrical Arc Blast Measurement Research Project is intended to gauge the explosive, thermal, and spectral effects of arcing electrical faults and help improve the safety of those exposed to them. The project will develop independent data to characterize the hazards, document potential standards and technology’s electronics and electrical engineering laboratory to facilitate planning new tests. Based on these findings, the project’s Technical Advisory Committee will design a testing and analysis program of optimum value. Phase II will be the test program to measure arc fault phenomena.

This project was initially requested by members of the NFPA 70E, Electrical Safety Requirements for Employee Workplaces, Technical Committee, following a growing number of injuries from arc faults. The information will help NEC® code-writers quantify the hazard, and writers of NFPA 70E to identify methods of protecting electrical workers. It will also provide valuable independent documentation to authorities having jurisdiction (AHJs), manufacturers, utility companies, chemical companies, protective clothing manufacturers, regulators, insurers, and approvals organizations.

The Residential Electrical System Aging Research Project is intended to help determine why there is a residential electrical fire problem in the United States, despite our good code, by evaluating the relationship between the aging of electrical components and the fire problem. Among the potential answers may be that electrical components, like any product, age over time. Coupled with this, residential electrical systems are rarely inspected after they are installed.

The project will follow two tracks, an enhanced electrical fire investigation program and a sampling and analysis of actual installed components. These data-gathering initiatives will provide critical information to code-writers, especially for NFPA 73 and the NEC, as well as AHJs, electrical manufacturers, installers, property owners, and insurers.

For details on either of these projects, contact Project Manager Steve Hanly at shanly@nfpa.org or (617) 984-7284.

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Wildland Fire Management
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CHAIR: Bill Terry, USDA Forest Service

HOW TO REACH US: Jim Smalley, Executive Secretary, +1-617-984-7483, jsmalley@nfpa.org
Is the adoption of NFPA 5000 in California the beginning of other adoptions of the code across the United States?
To have one of the nation’s largest states adopt our building code as law is a great testament to the importance of the NFPA process. I was involved with our staff and supporters in California in making the argument for NFPA 5000 before the Building Standards Commission. One of the most persuasive arguments was that the Building Code, like all our other codes, is the product of a consensus process. Another important factor was making the commitment to stay there and work closely through the amendment process with officials in California, to be available to answer their technical questions and provide code books to enforcement officials and training. It’s not enough just to issue a code. You must make sure that it’s implemented properly, particularly in these times, when jurisdictions are strapped financially. The fact that NFPA can give so much assistance is, I think, one of the things that make the use of our codes so effective.

Can NFPA balance the new demands of homeland security with the traditional goal of protecting home and workplace?
As society has developed, NFPA has faced challenges we couldn’t have imagined 100 years or even 20 years ago. Homeland security is a huge challenge, but it’s a natural one for NFPA. First, it directly affects the first-responder community, which we work with all the time. We’ve already been involved in many areas that are of great importance to homeland security. These include the development of codes and standards that address the deployment of first-responder resources and protective clothing, as well as those detailing how to deal with building collapses and chemical and biological hazards.

Much of the information needed to advance the cause of homeland security includes recommendations NFPA has urged people to follow for years, such as making and practicing evacuation plans for all types of buildings. This is something we have done and urged people to do, but it has taken on a new urgency since September 11, 2001.
Responding to this new situation is going to be an additional challenge for us, as it has been for the first-responder community.

Is NFPA particularly well suited for dealing with homeland security issues?
Many organizations can play an important role, but NFPA is in a position to bring together different elements and different disciplines to look at some of the questions surrounding building safety and evacuation and other aspects of homeland security. That’s why we’re doing whatever we can to participate in homeland-security preparation efforts.

Can home fire deaths be eliminated?
Some would say it’s impossible, but I don’t accept that. We’ve brought down the number of deaths from home fires in this country by 50 percent in the last 25 years. Look at the high percentage of deaths that take place in homes that are unprotected by smoke alarms. Then ask yourself how difficult it would be for every home in America to have a smoke alarm. If we could do that, we’d put a substantial dent in the number of home fire deaths. I think it’s a goal we should shoot for. Clearly, we have an unacceptably high rate of home fire deaths in this country, and I think eliminating them is achievable.

NFPA took a step toward this goal last fall when we joined the U.S. Fire Administration and the Mississippi High-Risk Fire Safety Task Force to provide and install nearly 9,000 smoke alarms in homes throughout Holmes County, Mississippi.
The county is one of the poorest areas in the nation and has been hit hard by fire deaths in homes without working smoke alarms. If we can target those very high-risk areas, educate people, and bring basic protection to their homes, I think we can bring that fire rate down substantially and quickly.

How can NFPA members get involved?
The only way it can be done is with the help of our members through community-based programs. Working through local fire departments and civic groups or businesses to establish community-based programs that identify very high-risk areas, we can bring very basic fire protection to these areas that can have a tremendous impact. Members can initiate those programs in their communities.
NFPA’s Public Education Department already has the message and the resources. What we need to do now is broaden their application.

Any thoughts on 2004?
I think 2004 is going to be another challenging year. We’ll continue to face the demands of homeland security, and our public education efforts will focus more closely on protecting high-risk populations. We’ll continue to explore answers to questions involving our movement as a publisher to the digital age. And we’ll keep up the momentum we gained in the building-code arena with California’s adoption of NFPA 5000.

I think it will be another important year for NFPA, and I’m looking forward to it.
CONTINUED FROM PAGE 24

Gases, or Vapors

NFPA 499, Recommended Practice for the Classification of Combustible Dusts and of Hazardous (Classified) Locations for Electrical Installations in Chemical Process Areas

NFPA 70E, Electrical Safety Requirements for Employee Workplaces

NFPA 906, Guide for Fire Incident Field Notes

NFPA 921, Guide for Fire and Explosion Investigations

NFPA 551, Guide for the Evaluation of Fire Risk Assessments

NFPA 12A, Halon 1301 Fire Extinguishing Systems

NFPA 2001, Clean Agent Fire Extinguishing Systems

NFPA 82, Incinerators and Waste and Linen Handling Systems and Equipment

NFPA 59, Utility Liquefied Petroleum Gas Plant Code

NFPA 1925, Marine Fire Fighting Vessels

NFPA 140, Motion Picture and Television Production Studio Soundstages and Approved Production Facilities

NFPA 53, Recommended Practice on Materials, Equipment and Systems Used in Oxygen-Enriched Atmospheres

NFPA 101A, Guide on Alternative Approaches to Life Safety

NFPA 36, Solvent Extraction Plants

NFPA 1975, Station/Wear Uniforms for Fire and Emergency Services

NFPA 1670, Operations and Training for Technical Rescue Incidents

NFPA 58, Liquefied Petroleum Gas Code, was accepted as amended.

CONTINUED FROM PAGE 28

and their installation will run $275,000. Asked why he decided to install them anyway, he responds, “Did you read about that fire in Chicago?”

He was referring to the October fire in a Cook County office building that killed six people. The building had no fire sprinklers above the first floor.

Congressman Bob Filner (D-CA) says he’s excited to see the goals of the Vietnam Veterans of San Diego being realized with the upgrading of its buildings in Escondido and southeast San Diego.

“I have worked to help the Vietnam Veterans of San Diego receive grants for expansion and improvement of their facilities serving homeless veterans,” Filner says. “I am gratified to know that our veterans will be safe with the installation of fire alarms and sprinklers.”

Hickman says, “The vets we serve here in San Diego served our country. We need to do the best we can for them.”

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Tony Snow, best known for hosting FOX network's Sunday morning public affairs program, FOX News Sunday with Tony Snow, will deliver the keynote address at Tuesday's general session. Mr. Snow offers audiences rich new insights into the relationship between the press and the president, reveals the chaotic roots of governmental procedure, and chases the shadows from the dark corridors of power. He reveals Washington from the inside out, with candor, humor and insight.

Affect change in the industry and cast your vote on the codes and standards you use every day. Attend the Technical Committee Report Session where the National Electrical Code will figure prominently among the documents reporting.

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Steve Ataste, Director of Government Relations
International Assn. of Arson Investigators

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TRANSMITTER
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FIRE CHIEF
City of Hemet, CA (population 62,500). Salary: $7,946 - $10,141/month, plus excellent management benefits package. Seeking seasoned professional to provide vision, leadership, and direction to the fire department's 52 sworn and 3 civilian personnel. Responsible for administering $7.0 million budget to operate 4 fire stations, covering 26-square-mile response area. Department provides emergency medical services, fire suppression and prevention, HAZMAT; mutual aid service to CDF, public education, and safety and training. Candidate will embrace future challenges, including construction of new fire station, location study, response-time issues as they relate to growth, union negotiations, communication system improvement project, and developmental impact issues.
Qualifications: BA degree (Master's preferred) in fire technology, public administration or related field, and 5 years progressively responsible fire service management experience, including 2 years battalion chief or higher-level supervisory experience, or an equivalent combination of education and experience; ability to obtain CA Class C driver's license and maintain satisfactory driving record; possession of State of CA Chief Officer Certification; local area response time within 15 minutes is required within 3 months of appointment. Submit application by 5:00 p.m. on March 1, 2004: City of Hemet, Human Resources Department, 445 E. Horida Ave., Hemet, CA 92543-4209; www.cityofhemet.org.

FIRE PROTECTION ENGINEERING
Resume to: G. Johnson, Schirmer Engineering Corporation, 707 Lake Cook Road, Deerfield, IL 60015-4997; Fax: (847) 272-2365; e-mail gail_johnson@schirmereng.com.

FIRE SAFETY ENGINEERING TECHNOLOGY
UNC Charlotte Department of Engineering Technology invites applications for the position of Assistant/Associate Professor of Fire Protection/Safety. Reporting to the Chairman of the Department of Engineering Technology, the person selected will develop and deliver courses in fire protection and safety, as well as teach and perform research in the discipline. State-of-the-art fire research laboratories are under construction, providing a unique opportunity for cutting-edge material-flammability research. With a current student body of over 19,000, UNC Charlotte is experiencing rapid growth in programs and enrollment. UNC Charlotte is consistently ranked as one of the top academic institutions in the Southeast. The University is located in an attractive suburban setting on a 1,000-acre wooded campus in the largest city in the Carolinas.
Candidates should hold a minimum of a Master's degree in Fire Protection or Safety Engineering or related appropriate degree, and five years relevant experience. A record of scholarly achievement, ability to attract external funding, and Distance Education experience are desirable.
Nominations and applications, including a letter of interest that addresses the qualifications, curriculum vitae, and a list of five professional references with addresses and phone numbers should be sent to: Department of Engineering Technology, Faculty Search Committee, The University of North Carolina at Charlotte, The William States Lee College of Engineering, 9201 University City Blvd., Charlotte, NC 28223-0001.

DATEBOOK
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WE-ELL... YOUR MOTHER AND SISTER WILL PROBABLY BE PRETTY BUSY WITH YOUR AUNT HELEN AND UNCLE CHARLEY AND I WILL BE AWAY IN THE AFTER-NOON... I GUESS IT WILL BE ALL RIGHT, BILLY!

WHEEE!

SO, NEXT MORNING...

SURE YOU WON'T TAKE A LOOK AT THIS LIST OF CIVIL DEFENSE JOBS, PHIL? ONE OF THEM MIGHT SUIT YOU?

CIVIL DEFENSE GROUPS

MEN
- FIRE-FIGHTING
- RESCUE WORK
- MEDICAL TEAMS
- CAR DRIVERS
- AIR RAID WARDEN
- RADIATION MONITORING CREW
- STREET CLEARING
- POLICE AUXILIARY
- HOSPITAL WORK
- EMERGENCY FEEDING

WOMEN

- FIRE-FIGHTING
- MEDICAL TEAMS
- CAR DRIVERS
- AIR RAID WARDEN
- RADIATION MONITORING CREW
- STREET CLEARING
- POLICE AUXILIARY
- HOSPITAL WORK
- EMERGENCY FEEDING

A GOOD TIME / AND WAR MIGHT COME AT ANY TIME... I KNOW! I JUST HOPE, FOR THE SAKE OF ALL THE PHIL SMITHS IN OUR COUNTRY THAT IT NEVER DOES! THEY WOULDN'T HAVE A CHANCE!

AND PERHAPS WAR NEVER WILL COME! PERHAPS! BUT THAT EVENING...

WELL, BILLY, HERE WE ARE! QUITE A DAY, EH? DID YOU HAVE A GOOD TIME?

I HAD A SWELL TIME, MISTER SMITH! GOING TO THE ZOO... SURE BEATS HEARING THE SAME OLD THINGS ABOUT CIVIL DEFENSE OVER AND OVER AGAIN! BUT IT'S SO LATE! MOM AND AND DAD WILL BE WORRIED!

IT'S ALL RIGHT, BILLY! WE CALLED AND TOLD THEM YOU'D HAVE YOUR DINNER WITH US... WE...

PHIL! LOOK! PHIL! LOOK!

AN A-BOMB! WHAT... WHY...

GET DOWN! ON YOUR STOMACHS! HIDE YOUR FACES! DON'T LOOK AT IT!

WHEN YOU HAVE BEEN TRAINED TO MEET AN EMERGENCY, YOU MEET IT... BUT IF YOU ARE UN- TRAINED...

DAD! BILLY'S RIGHT! THAT'S WHAT THEY TAUGHT US IN SCHOOL! GET DOWN!

DOWN! AND NOT A SECOND TOO SOON!
Finally, products to fight sprinkler system corrosion from a company that knows sprinkler systems.

Over 10 years ago, Potter Electric Signal Co. recognized the problems corrosion can cause in a sprinkler system. Since then, Potter has been the exclusive provider of a Vane Type Flow Switch (VSR-F) that includes corrosion proof wetted materials, eliminating potentially catastrophic problems.

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