

SprinklerScene

Volume VIII No.3 September – December 1999

Russell P. Fleming, P.E., Editor

IFSA Establishes New Member Classes

The Board of Directors of the International Fire Sprinkler Association, meeting in London on November 30, 1999, acted to establish membership categories and dues levels for the new organization as follows:

Manufacturer Member – A company that manufactures fire sprinkler, water spray or water mist systems equipment. The IFSA will be providing a service to all manufacturers of sprinklers beginning in the year 2000 through its website by serving as an official publisher of fire sprinkler model identification information. Manufacturer members will be provided with a link to their websites. Annual dues – US\$5000 per year.

Distributor Member – A firm or corporation that does not qualify as a manufacturer member, but is involved in the business of distributing automatic water-based fire suppression systems or their components. A roster of these members will be maintained on the IFSA website. Annual dues – US\$2000 per year.

Contractor Member – A firm or corporation that does not qualify as a manufacturer or distributor member, but is involved in the business of installing or maintaining automatic water-based fire suppression systems. A roster of these members will be maintained on the IFSA website. Annual dues – US\$1000 per year.

Professional Member – A firm or corporation that does not qualify as a manufacturer, distributor, or contractor member, but that provides design services or specifications for automatic water-based fire suppression systems. A roster of these members will be maintained on the IFSA website. Annual dues – US\$250 per year.

Individual Member – A person, such as a representative of the fire service, who supports the goals and programs of the association. Annual dues – US\$150 per year.

Association Member – An allied membership organization. Annual dues – US\$3000 plus \$US100 per addition to the roster.

Governing Member status will continue to be available to all organizations and individuals. Governing Members support the primary efforts of the IFSA by serving as a source of funding (US\$25,000 per year) for worldwide efforts to promote the use of water-based automatic fire suppression systems.



FM and UL Work to Improve Residential Sprinkler Fire Test

While the first residential sprinklers were developed on the basis of full-scale testing of upholstered furniture during a test series that took place in Los Angeles in 1980, the fire test used as the basis of most residential sprinkler approvals was later developed by Underwriters Laboratories to avoid burning real furniture. UL developed a foam pad arrangement that, in conjunction with wood paneling, combustible ceiling, a wood crib and excelsior, produced a heat release curve more challenging than the original furniture. The test, part of UL 1626, was believed to conservatively imitate the burning characteristics of a residential fuel package.

In January of 1999, Factory Mutual Research Corporation called a meeting of sprinkler industry representatives to announce that it had attempted to duplicate UL 1626 fire test results without success, and speculated on reasons that the test method might be deficient. This led to a substantial fire research investigation by both Underwriters Laboratories and Factory Mutual. Both laboratories ultimately found that at least two of the primary components of the fire test scenario, the wall paneling and the foam pads, produced a high degree of variability in terms of fire test severity. Obviously, such variability is not desirable if products are to have a consistent minimum level of performance.

Over the course of 1999 sprinkler manufacturer representatives attended a series of joint meetings with representatives of Factory Mutual and Underwriters Laboratories, and both laboratories undertook a considerable effort to improve the test. The intent of the laboratories was not only to develop a more consistent test method, but also “recalibrate” the test against a real furniture package similar to that used in the Los Angeles test series. As part of this effort, full-scale tests of real furniture packages were conducted under the large calorimeter at Factory Mutual. This type of fire measurement was simply not available back in 1980, and the sprinkler manufacturers are confident that the end result of the laboratory efforts will be a significant improvement in the technical documentation of the residential sprinkler fire test.

UL and FM have independently worked toward evaluating alternate materials and arrangements, and are reportedly nearing agreement on a new residential fire test configuration. The burning characteristics of the new configuration are expected to be much closer to the original furniture than the earlier UL 1626 simulation. Most importantly, the variability of the new field package will be substantially less.

U.S. Field Performance of Residential Sprinklers Surveyed

The National Fire Sprinkler Association, with funding support from Underwriters Laboratories, has recently completed a survey of fire and building officials in communities that have been using listed residential sprinklers in NFPA 13D systems. The 13D systems are the systems that involve the least water supplies for the residential sprinklers, and the survey was viewed as a means of evaluating the performance of these low-flow sprinklers in actual field situations.

The results have been encouraging in that there are virtually no reports of fires exceeding the capability of the sprinkler systems other than in the few instances where the system has been shut off or the fires began in areas not protected by sprinklers. The official report on the survey is expected to be issued early in 2000.

World Sprinkler News

- ◆ The 1999 editions of NFPA 13 – *Installation of Automatic Sprinklers*, NFPA 13D - *Sprinkler Systems for One- and Two-Family Dwellings and Manufactured Homes*, and NFPA 13R - *Sprinkler Systems for Residential Occupancies Up to Four Stories in Height* were approved on the floor of the NFPA World Fire Safety Congress and Exposition in May of 1999 and officially issued by the NFPA Standards Council with an effective date of August 13, 1999.
- ◆ Arson fires in bin rooms (trash collection rooms) are reported to be a growing problem in the 4500 local authority “tower block” residential buildings over eight stories in height in the United Kingdom, costing an estimated \$US 3 million each year. In West Midlands, automatic sprinklers are helping to reduce both the number as well as the damage. Since 1991, nearly half the 815 high-rise blocks have had automatic sprinklers installed in their bin rooms. In a recent survey, building caretakers reported a 90% reduction in the number of fires, and substantially lower repair bills.
- ◆ On August 4, 1999, the U.S. Consumer Product Safety Commission announced an agreement with Mealane Corporation for the voluntary recall of "up to 1 million" dry type fire sprinklers produced by Star Sprinkler between 1961 and 1976. The models being recalled are dry models D-1, RD-1, RE-1, E-1, and ME-1. The announcement came as somewhat of a surprise, since Star Sprinkler had previously announced a voluntary recall of these sprinklers in 1990, and tens of thousands have already been replaced. The original recall notice included model ME-1 dry sprinklers manufactured through 1981, but the new agreement between CPSC and Mealane apparently does not cover that time period due to a change of ownership in 1976.
- ◆ The Australian Minister for Financial Services & Regulation, Joe Hockey, has ordered a compulsory product safety recall of 4,500 fire doors. The doors, manufactured and supplied by Theo Holdings Pty Ltd and Barok Industries Pty Ltd between January of 1993 and September of 1998, use a "pyrokor" core. The doors were installed primarily in the Australian states of Queensland and New South Wales. When tested, the doors failed to achieve their claimed fire resistance level ratings. Priority for the recall will be given to doors installed in nursing homes, hospitals, and other buildings in which occupants might require assistance to evacuate. Authority for the recall was based on Section 65F of the Trade Practices Act of 1974. The suppliers are being required to identify buildings in which the doors were installed, and to arrange with building owners and/or original builders to repair or replace the doors at the suppliers' cost. "Best endeavors" are to be made to have the recall program completed within six months.
- ◆ The National Fire Sprinkler Association has reported that its new series of television and radio public service announcements (PSAs) have had 35, 258 combined broadcast airings in the United States through October 18, 1999. The television PSA aired on 147 stations, including thirteen stations in four of the top five American markets. The PSAs focus on “Highrise Fire Safety”.
- ◆ Standards Australia has indicated its intent to consolidate the series of documents that address the maintenance of fire protection equipment. Currently, the AS1851 series that addresses fire protection system maintenance is contained in 16 separate parts. The consolidation effort is expected to highlight the need to coordinate the maintenance functions of various systems, particularly when such systems are part of an integrated fire engineering solution. The revised standard will be titled AS1851: Fire Protection Equipment Maintenance compendium. A decision will be made later as to whether the standard will continue to be written by multiple committees or whether a new consolidated committee will be formed.

- ◆ The U.S. Bureau of Alcohol, Firearms and Tobacco (ATF) is currently building a new Fire Research Center and Fire Research Laboratory in Maryland. The new facility will have multiple calorimeters, including one believed to be the largest in the world, capable of measurements up to 14 MW. The facility itself will be capable of withstanding a sustained 100 MW fire. ATF is the agency within the U.S. Treasury Department that undertakes fire and arson investigations.
- ◆ In a paper published in the most recent SFPE *Journal of Fire Protection Engineering*, researchers from Lund University in Sweden state that while experimental studies and thermal extinction theory suggest that water mist is twice as efficient per unit weight as Halon 1301, only mists with droplet sizes less than 20 microns in diameter (preferably 10 microns) are able to follow air currents and avoid obstacles. The researchers noted that no commercially available water mist nozzles have such small droplets, making it very difficult to develop a total flooding water mist system.
- ◆ The Fire Protection Association Australia has received funding from the International Decade for Natural Disaster Reduction Coordination Committee to assist in a research effort aimed at exploring the effectiveness of "bushfire sprinklers". At present, most such sprinklers are of the "garden variety", and are not addressed in *AS3959: Construction in Bushfire-Prone Areas*. More information is available at the FPA Australia website at www.fpaa.com.au.
- ◆ In the East African nation of Tanzania, a seminar was recently organized by the Architectural Association of Tanzania to highlight the fact that most countries in that part of the world have no fire codes. Provision of fire safety in new buildings depends on the knowledge or goodwill of the architect. More high-rise buildings are being constructed for residential and office use, but there is a reluctance to install fire safety measures for the use of firefighters due to a lack of confidence in the fire service.
- ◆ The proposed year 2000 edition of NFPA 750 - *Water Mist Systems* was approved without amendment at the NFPA Fall Meeting in New Orleans, LA on November 17, 1999. It is expected to be officially issued by the NFPA Standards Council in January of 2000.

Upcoming Meetings, Seminars, and Exhibitions of Interest

February 23-25, 2000 – "Suppression and Detection Research & Practice: Bridging the Gap", Fire Suppression and Detection Research Application Symposium, Orlando, Florida, USA, The Fire Protection Research Foundation (Fax 1-617-984-7010 or www.nfpa.org)

May 14-18, 2000 – NFPA World Fire Safety Congress and Exposition, Denver, Colorado, USA (Fax 1-617-984-7030 or www.nfpa.org)

June 15-17, 2000 – Third International Conference on Performance-Based Codes and Fire Safety Design Methods, Lund, Sweden, c/o SFPE (Fax 1-301-718-2242 or www.sfpe.org)

June 20-25, 2000 – Interschutz 2000, Augsburg, Germany, (Fax 1-609-987-0092 or www.hfusa.com)

October 15-18, 2000 – NFSA Annual Seminar, Aruba (Fax 1-914-878-4215 or www.nfsa.org)