



# Society of Fire Protection Engineers

## New Jersey Chapter

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# FUSIBLE LINK

APRIL 2005

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## Message from Chapter President...

This month's meeting will include a fire test conducted at the Hanover Manor by NFSA and one of our Directors, Vinny Fichera. The fire test trailer is a demonstration of how an automatic sprinkler head operates in a real fire incident. The trailer is part of NFSA's continuing education program. The test will be conducted in the parking lot at the Hanover Manor followed by our regular dinner meeting and an analysis of sprinkler operation theory by some of our top notch member engineers. This meeting is also a warm up to our follow up visit to the Chubb sprinkler lab in May. See you all at the next meeting.

Rich Reitberger  
Chapter President

## NJ SFPE Membership Meeting Minutes March 7, 2005

The meeting was called to order at 6:00 by our President Rich Reitberger. A salute to the flag was followed by all attendees introducing themselves as is our custom.

The February minutes were approved as published in the Fusible Link. The treasurer's report was read and accepted as read.

Sarge introduced a new member whose application had not gotten to the board prior to the general meeting, however, after his introduction Mike Argenziano of FM Global was accepted for membership by the Board and general membership.

Ed spoke briefly about S-2176, informing the membership of its changes and that the board still felt it was a very poor piece of legislation. Ed informed membership that Rich Reitberger would be preparing a new letter for their editing and sending by fax to their local State Senators. As outlined, the changes are the rewriting the section on "Layout" by adding the word physical before the word layout. This does not make a terrible bill smell sweet as "Physical Layout" can still be misinterpreted to read design. Also is the exclusion from the bills requirements for those "in house employees of a facility in which the work is being performed where such employees have experience or training in the maintenance of fire suppression systems". (see Rich Ravaioli's report on the current law below as well).

Rich Ravaioli provided the membership with an update of the Fire Equipment Advisory Board's activities. First and due in large part to our past president Joe Janiga's efforts, an amendment is under consideration to allow daily,

weekly and monthly inspection and test of fire alarm and suppression equipment by competent in-house technicians with the following caveats:

- Forms for testing must be those found in NFPA 25 and 72
- All individuals performing the test and inspection must be fully trained.
- The site must provide a document of service verifying that proper quarterly, semi-annual and annual inspection and test will be performed by a fully Certified Fire Alarm Company that must be approved by the Director of the Department of Consumer Affairs.

Another amendment will allow non-certified people to perform certain functions such as silencing alarm systems and turning off supply valves when responding to emergency situations. This as well came with a caveat in that there must be a follow up by a Certified Contractor the next day. Other important changes Rich finished by telling us about a reconsideration of the need for 3 inch lettering on the outside of vehicles and a move toward standardized forms by the DCA - DFS.

Vinny Fichera spoke to the membership about the High Rise Fire Safety Coalitions efforts to have fire sprinklers installed in all high-rise buildings in New Jersey. Stevens Institute is currently performing a survey of all high rises in New Jersey to determine how many will require retrofit and provide cost estimates. The NJ SFPE is in support of the Coalition and Vinny asked for additional members and support from our

general membership. This is truly a life safety issue that impacts all of us whenever we or our loved ones are inside a building that is greater than 75 feet above fire department vehicle access.

Our first presentation this evening was a reading of the changes to the NJ Chapter of the Society of Fire Protection Engineers By-Laws by Jim Tolos. Jim informed us that the By-Laws had not been updated in over five years and proceeded to review the changes to them. As the changes are a part of this months FusibleLink they will not be discussed further in the minutes. I wish to remind the membership that to truly be a member of an organization you must actively participate and your review and input are important to the society.

Tonight's second presentation was by our President Rich Reitberger of Affiliated FM entitled "Mitigating Earthquake Damage - Reinforcing Techniques". After a brief discussion about who present has been through an earthquake and what transpired Rich showed us that although as we know earthquakes are prevalent on the West Coast there are many areas in the country that are subject to earthquakes. We learned that the physical damage and related business impact from the shaking, damage to piping (sprinkler in particular), fires, soil and geological failures and conditions beyond our properties can be quite extensive.

Rich ran very informative movies showing exactly what happens during an earthquake to both unbraced and braced sprinkler piping. The movie showed quite clearly the advantage of bracing sprinkler piping. Extensive data gathered by FM after the 1994 Northridge Quake dramatically

shows that much of the damage can be mitigated. Very simply put sprinkler piping that is braced did not break, this allows them to function in the likelihood of fire starting as a second result of the earthquake. Rich's presentation clearly showed fire to be almost expected after an earthquake due to rubble, combustible materials thrown from storage areas, ruptured gas and flammable liquid piping damage and electrical damage and sparking. This is compounded by the fire service being overtaxed and subject to roads that may be impassable. As the intensity of an earthquake increases the likelihood of a fire increases dramatically.

Rich explained the difference between the magnitude of an earthquake which is measured by the Richter scale and the intensity which is measured in the Modified Mercalli Intensity (MMI) scale. Rich also explained liquefaction which can occur in loose, water-saturated soils when strongly shaken. He went on to explain methods to control or mitigate the effects of

earthquakes. It appeared that we were in a real estate seminar because location, location, location was the key to loss mitigation. Construction both new and the evaluation of existing was second to location in the mitigation of loss.

Rich showed us a valve that when used on gas lines shuts off the flow when it senses an earthquake. Seismic shutoff valves are important parts in the prevention of fires as we know that even if our sprinkler piping remains intact the availability of water becomes questionable after an earthquake. Sufficient freeboard and/or internal baffling of dip tanks, avoidance of automatic-starting process equipment, flexible couplings on both the intake and discharge of fire pumps and adequately braced pumps, controllers and fuel tanks are also important factors in mitigation of building fires and fire loss. The use of electrical fire pumps without back up power was discussed and should be avoided. Additional slides showed proper bracing for space heaters, hot water heaters,

boilers and furnaces. Proper bracing is also necessary for hazardous material storage and all piping including the use of flexible connections at all piping connections.

Rich ran another movie showing the amount of water that can spill from ruptured pipes of various sizes and the damage that can be caused both in the area of the rupture as well as in areas below the rupture. The presentation progressed to methods that will help minimize the damage to building contents some as simple as Velcro under computer equipment on desks to the anchoring of large shelving and mechanical apparatus. Rich closed with a discussion of Emergency Response Teams, the need for preparation prior to earthquakes and the inspection of all earthquake protection/control equipment.

After a short Q & A session the meeting was adjourned at 8:15.

**EDWARD B. ARMM, SET** 

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## CAREER OPPORTUNITIES

Multinational engineering consulting firm, specializing in fire protection, is seeking a fire protection oriented CAD contractor, in the NY, NJ, PA area, to produce insurance type diagrams on a contract basis. Please contact P. Rullo @ (732)827-4400.

### Loss Prevention Consultant

The Loss Prevention Consultant will be responsible for conducting field inspections of existing and potential risks for insured hospitals, physician practices and healthcare facilities. They will assist with the coordination and provision of safety-related in-service education and training to policyholders. Participate in fee-for-service work. They will write comprehensive reports for policyholder and fee-for-service clients. Track all loss prevention activities in the activity tracking system. The ideal candidate will have 3 or more years experience with federal, state and local Loss Prevention standards, preferably in the healthcare industry. They will have good knowledge of OSHA, Joint Commission and the National Fire Protection Association standards. A bachelor degree in a related field is preferred. A valid driver's license is necessary and the ability to receive designation as a CSP, CIH, or other professionally recognized certification. We offer a competitive salary and comprehensive benefits package. Please send your resume by e-mail: hrjobs@pinsco.com or fax to: (609) 951-5823.

If you should have any questions, please call:

Corinne M. Pecht  
HR Generalist  
Princeton Insurance Company  
746 Alexander Road  
Princeton, NJ 08540  
Phone: (609) 452-9404 x306

## By-Law Changes to the Fusible Link

During the executive committee meeting of March 7, the Board of Directors had approved the following changes to the NJ Chapter SFPE Constitution & By-Laws. A first reading was also made that date to the general membership. A second reading and approval from the general membership will be requested at the April 4 meeting.

Items with brackets surrounding the word are those words/sections that are to be changed or eliminated, e.g. [strikeout]. New words/sections will be underlined, e.g. underlined. Editorial changes are not listed but will be presented at the general membership reading.

**Section 3.1.1** No person shall be eligible for membership to the Chapter unless he/she hold membership in the Society.

**Section 3.2** Chapter Supporters shall be persons [in] from groups in related fields of endeavor or interest who do not hold Society membership but who subscribe to the objectives of the Chapter.

**Section 3.5** Each Fellow, Honorary Member, Professional Member, Associate Member, and Affiliate [, and Chapter Supporter] is entitled to one vote in the affairs of the Chapter. Chapter Supporters and Student Members [may not] are not entitled to vote.

**Section 3.9** Any Member of any grade or Chapter Supporter who retires from all professional income producing activity, and upon completion of the dues notice indicating "retired", shall be exempt from paying annual dues/fees provided that they have a membership record in good standing for five years.

**Section 3.10** Any Member or Chapter Supporter may be expelled for cause after a 2/3 vote of the Board. The Secretary shall send a letter to the individual indicating the reason he/she is to be voted upon for expulsion, and he/she may appear at the voting meeting to defend himself/herself.

**Section 4.6** Any Member of the Board of Directors may be expelled for

cause (including unacceptable amounts of meeting absences) after a 2/3 vote of the Board. The Secretary shall send a letter to the Board member indicating the reason he/she is to be voted upon for expulsion, and he/she may appear at the voting meeting to defend himself/herself. The voting rights of that Board member are suspended during that meeting.

Change current Section 4.6 to 4.7

**Section 5.4** (Add additional duty of the Secretary) - maintain records of electronic voting.

**Section 5.5** (Add additional duty of the Treasurer) - issue notice of membership renewal.

**Section 6.3** Generally, the awards shall have a generic name and not a proper name (such as a past or present member of the Chapter, or other proper name).

**Section 6.4** (Add two new awards)

- Hats Off Award: The Hats Off Award is given to recognize a Chapter Member or a Chapter Supporter who, in the course of their Chapter assignment, have put forth that extra effort....walked that extra mile....to ensure that the effort expended was the absolute best.

The John V. Kelly Excellence in Government Award: The Excellence in Government Award is given in recognition to a public official's accomplishments, contributions and achievements in the promotion of public awareness of fire protection and prevention concepts and ideals.

**Section 8.2** (Add to Program Committee) - This committee, in conjunction with the Communications Committee, shall issue all notices (announcements) of any special meeting.

(Add to Auditing Committee) - The committee shall document the results of such audit in a letter to the president and make a report to the membership at the start of the following year.

# The Case for Performance Metrics for Fire Protection Devices

## Part V

*The following technical article was written by John M. Cholin, P.E., M.E.E., F.S.F.P.E., J.M.Cholin Consultants, Inc. 101 Roosevelt Dr., Oakland, NJ 07436 This is the fifth and last installment.*

The benefits of a system of performance metrics would benefit all who participate in the delivery of fire alarm systems to the ultimate user. The availability of validated performance metrics would provide an environment where system performance can be predicted, thereby reducing the probability and occurrence of system failures. The availability of performance metrics would enhance the liability management of both manufacturers and installers. Performance metrics are also critical to improving the product. These are important intangible benefits that are currently denied the fire alarm community.

The availability of validated performance metrics for heat and smoke detectors also would provide reduced costs to the purchasers of fire alarm systems as well as improved profitability to the suppliers of those systems. Consider a fire alarm project requiring smoke detection throughout the facility. There are two options, using a smoke detector according to the prescriptive spacing implied in the National Fire Alarm Code or detectors on a spacing based upon a performance-based approach. The Model "C" detector has a published performance metric that is used to predict that the detector will detect the design fire at a 42-foot spacing. Using this spacing 250 detectors are needed and for the sake of this example assume these detectors cost \$200 each. The alternative is to use the Model "X" detector that lacks a published performance metric on the implied

prescriptive spacing of 30 feet. The building requires 500 of these detectors but they can be purchased at \$100 each.

In this scenario the customer gets equivalent protection with half as many detectors. This provides the customer with an improvement in system reliability. Even though the detector has a higher unit cost, the building owner benefits. Assuming the two brands of detectors are equally reliable, the building owner has a lower probability of device failure because there are fewer devices installed. Assuming the spurious alarm susceptibility of both detectors is the same, the owner enjoys a reduced spurious alarm exposure because of the smaller population of detectors.

The manufacturer also benefits. The fact that a detector has a published performance metric does not make that detector more expensive to produce. Most current commercially available detectors can achieve response to most design fire scenarios at expanded spacings. Thus detector C and X could be physically identical. But when a performance metric is developed for the detector we are able to use that detector more efficiently, maximizing the value of the investment in equipment. If the smoke detector represents \$33 in direct material and labor and another \$57 in G&A expense the Model C detector provides a \$110 profit while the model X detector only provides a \$10 profit. Most manufacturers would welcome a five-fold increase in percentage profit as it immediately increases the productive capacity of the manufacturing operation.

The installation firm also benefits. Since there are few devices to install the installation contractor can charge more per device even though the total

installed cost to the customer is lower and thus operate with better profit margins. Likewise, with the system maintenance, the reduced number of detectors provides the contractor with the opportunity to adjust the cost per unit while still delivering the service to the owner at a price that is lower than the prescriptively designed alternative.

It is clear that the time has come for the fire alarm community to embrace the concept of performance metrics for both heat detectors and smoke detectors. The benefits are too compelling to ignore. Performance metrics provide an unprecedented opportunity to increase the productivity of our current fire alarm community. The adoption of performance metrics for heat and smoke detection also provides a means to defend manufacturers, installers and maintainers in litigation. They provide the design community the means to make better use of current technology. Performance metrics provide an environment that is conducive to the development of new and potentially more effective technologies.

The benefits of leaving the old, prescriptive environment for a new design environment in which fire protective systems are designed to achieve an objective are too great to ignore any longer. The promise of performance-based design hinges upon the existence of performance metrics for the fire detection devices. Indeed our reliance upon smoke and heat detectors for the initiation of life-safety responses to a fire cannot be justified unless and until we can measure the performance of the systems we design against the objectives we have adopted. Clearly, the time for performance metrics has come.

## Meeting Dates/Program 2004-2005

**(Programs Subject to Change)**

**Watch web page concerning cancellation in case of possible inclement weather conditions**

- April 4 "Fire Trailer & Dynamics" - NFSA Fire Burn Trailer & Fire Burn Dynamics
- May 2 "Chubb Lab" - Visit and Demonstration of Chubb's Fire Protection Systems Lab in Warren, NJ.
- June 13 **NOTE: DATE HAS BEEN CHANGED -**  
"Annual Meeting - Election of Officers  
Topic: Loss Lessons by John Cholin of JM Cholin Associates.
- June 27 Joint NY/NJ Chapter Joint Scholarship Golf Outing at West Point

**POSITIONS TAKEN BY SPEAKERS ARE NOT NECESSARILY THE POSITION OF THE NJ S.F.P.E.**

All meetings are held at the Hanover Manor, Eagle Rock Road, Hanover, NJ (approximately 1½ miles west of Eisenhower Parkway). Get Acquainted Hour 5:00-6:00 p.m. Adjournment is usually before 8:30 p.m. The Executive Committee meets at 4:00 p.m.

Editors Note--If you would like to advertise your company and help offset the cost of this publication, as well as having your business card in front of over 150 Fire Protection Professionals please call John Cholin at (201) 337-8621 for further information. The cost is \$100 for fiscal year.

## PE EXAM TRAINING

The NJ Chapter has historically supported our membership in preparing for the Professional Engineering License test in Fire Protection. Preparing for this course takes an enormous amount of time on behalf of the instructors and a minimum number of students are required to make this worthwhile. If anyone is interested in taking this course, they should contact John Cholin at [jmcholin@bellatlantic.net](mailto:jmcholin@bellatlantic.net) as soon as possible. There is very little time left for candidates to submit their applications (with the materials required) to one of the states in our area that recognize the Fire Protection PE (PA or CT).

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## MEETING NOTICE

- Date:** April 4, 2005
- Place:** Hanover Manor  
16 Eagle Rock Avenue  
East Hanover, NJ
- Price:** In Advance - \$22 At door - \$25
- Dinner:** 5:00-6:00 (Cash bar for mixed drinks)  
Dinner at 6 PM
- Speaker(s):** Vinnie Fichera, National Fire Sprinkler Association, John Cholin, JM Cholin Associates, Joe Janiga, FM Global
- Topic:** "Fire Trailer & Dynamics" - NFSA Fire Burn Trailer & Fire Burn Dynamics - An actual fire burn and sprinkler operation demonstration will be run in the NFSA Fire Burn Trailer, followed by a presentation on the dynamics of the test.

**Please note for this meeting:**

All officers, directors and committee chairman are requested to attend a meeting at 4:00 p.m. at the Hanover Manor.

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PLEASE COMPLETE AND RETURN WITH YOUR CHECK PAYABLE TO  
"SFPE NJ CHAPTER" TO:

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Affiliated FM  
400 Interpace Parkway, Bldg C - 3rd Floor  
Parsippany, NJ 07054-1196  
vicki.serafin@affiliatedfm.com

NAME: \_\_\_\_\_  
COMPANY: \_\_\_\_\_ TELEPHONE: \_\_\_\_\_

ALL RESERVATIONS SHOULD BE RECEIVED BY FRIDAY, APRIL 1, 2005. TELEPHONE RESERVATIONS OR CANCELLATIONS SHOULD BE RECEIVED BY NOON OF THE MEETING DAY.



Fusible Link Editors NJSFPE  
C/O Rich Reitberger  
Affiliated FM Ins. Co.  
400 Interpace Parkway, Bldg. C, 2nd Floor  
Parsippany, NJ 07054

## 2004-2005 Chapter Committees

### STANDING COMMITTEES

#### Program

Mike Newman, Chairman  
Consulting - Nick Chergotis & Peter Rullo

#### Arrangements

Vicki Serafin, Chairwoman

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Glenn Deitz, Chairman

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Sarge Slicer, Chairman  
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Bob Murray

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Rich Reitberger (FM Global Library)

#### Historian

Jim Tolos

#### Communications

Vicki Serafin

#### Fusible Link

Brad Hart, Editor  
Dave Gluckman, Asst. Editor  
Ana Crisostomo, Publishing  
Vicki Serafin, Distribution

### SPECIAL COMMITTEES

#### Special Executive Assistant to the Board

Vicki Serafin

#### Bylaws

Jim Tolos, Chairman  
Joe Janiga - Co-Chairman

#### Career Recruitment

Al Dopart, Chairman  
Glenn Deitz  
Dave Gluckman

#### Golf Outing

Richard Reitberger, Chairman

#### Awards

Rich Reitberger, Chairman  
Mike Newman

#### NY Chapter Liaison

Tom Kuhta (Pat Egan back-up liaison)

#### PE Examination

John Cholin, Chairman  
Joe Janiga  
Mike Newman  
Chuck Gandy

#### Joint Seminar/Chapter Seminar

Richard Reitberger, Chairman  
Vinnie Fichera  
Dave Gluckman

#### Legislative

Rich Reitberger, Chairman  
Vinnie Fichera  
Jerry Naylis

#### P.E. Test Questions

Chuck Gandy, Chairman