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Society of
Fire Protection Engineers
New Jersey Chapter

FUSIBLE LINK

FEBRUARY 2010

President's Message...

Last month we were privileged to have Ken Isman, Vice President of Engineering for the National Fire Sprinkler Association, speak to us on updates to NFPA 20 – Fire Pumps. Ken gave us a good understanding not only of the relevant changes to the code but also some of the interesting background behind those changes, how the NFPA codes and standards process works and the science and engineering that went into it all. At the February meeting we will have an equally fascinating presentation on Earthquake - Construction and Mitigation Analysis. For those of you that have business or projects in EQ areas this should be of most interest to you. And for all, based on recent events in Haiti, it will be a most timely and relevant topic. Come out and hear from the experts in this very specialized field. For your calendars – our technical seminar is April 23rd and our golf outing is June 21st. See you all at our February meeting.

Rich Reitberger
NJ Chapter President

Minutes of January 4, 2009 SFPE Meeting

The January 4 meeting was called to order at 6:00PM by President Reitberger. There were 29 in attendance. Joe announced that the BoD has voted to raise the cost of meetings by $4; the increase will be used as a gratuity for the restaurant staff. Those present indicated agreement with the action (A vote of the membership was not required). The minutes of the December 7 meeting were accepted. The Treasurer's reports for December 7 and January 4 were read and accepted. Tom Khuta mentioned a NYMetro SFPE chapter meeting coming up at the NYC Fire Museum January 12 and passed an invitation to us. He also mentioned the NY chapter has a seminar coming up on February 27. You can contact Tom for further info. Paul McGrath of City Fire reminded us of the FireFacts Seminar coming up on January 15 at Seton Hall University. The topic is to be NFPA 25, Inspection Testing and Maintenance of Water Based Fire Protection Systems.

Ken Isman, VP of NFSA gave us a lively and enjoyable presentation of 'NFPA 20 (Stationary Fire Pumps)– changes for the 2010 Edition'. Ken opened by encouraging each of us to participate in the NFPA review process via their RoP. You don't have to be a dues paying member to make a comment. Ken discussed the new/reinstated chapter on High-Rise; including dual tanks/alternate supply requirements and the application of pumps in series. The new/reduced Maximum Flow requirement which is the greater of the rated flow of the fire pump or the flow demand of the fire protection system (no longer 150% of rated pump flow). Some other new/changes are: Pump rooms are now required to have 'protected access', being directly accessible from the outside or having a protected two hour fire rated passageway to a stairway or exit. Jockey pump requirements have been modified and the arrangement of sensing lines for the pump controller has been reaffirmed/clarified to avoid installation errors. The water level in wells for vertical shaft turbine pumps now must be detectable. Limited service pump controllers remain in the standard although the committee attempted to have them eliminated. A new section covers all the requirements for fuel storage tanks (up to 1320 gals) for diesel engine driven fire pumps, so you no longer need to cross reference NFPA 30. Diesel fuel tanks need to meet UL142. Sprinkler protection for diesel tank rooms should be to Extra Hazard Group 2 which equates to a .45 density.

Changes Approved to Canons of Ethics for Fire Protection Engineers by SFPE

The following is a summary of the ethics code changes recently made by SPPE National. For those of us that are Fire Protection Engineers, being aware of the code or rather guidelines of ethics is an important factor in the way that we conduct our business.
Posted: 08 Jan 2010 08:49 AM PST

The Society of Fire Protection Engineers (SFPE) Board of Directors has approved changes proposed by the SFPE Ethics Committee to the Canons of Ethics for Fire Protection Engineers. The complete text of the Canons can be found at http://www.sfpe.org/Profession/Canon.aspx. The changes can be summarized as follows:

In Canon 4, "respects the environment" was changed to "considers consequences to the environment." This change was made because "respects" is an undefined term which may be interpreted differently by different people.

In Canon 6, "their professional qualifications" was added to the list of items that fire protection engineers shall be honest and truthful in presenting. Misrepresentation of professional qualifications was the subject of a recent ethics complaint. In Canon 12, an editorial change was made to reflect that the Canons are not a "code." Canon 15 was deleted because it was redundant with Canon #5.

Assembly Bill No. 4305 State of New Jersey What are our Legislators Thinking !

The 213th Legislature states that it "Concerns apprenticeship programs and other standards for public works contractors. However what it really does is favor union labor, raise the cost of all municipal work concerning fire alarm and hurt the smaller contractors, as they will not be able to compete!

Please read the bill, you can download it at the below URL;
http://www.njleg.state.nj.us/2008/Bills/A4500/4305_I1.PDF

Once you read it please go the below URL to locate your State Representatives and Senators, call them and tell them what you think, write them and tell them what you think and email them and again tell them what you think!
http://www.njleg.state.nj.us/members/legsearch.asp

Many NJ State Representatives are also subcode officials or fire marshals', if you know any these are the first you should contact as they will be able to understand the issues and relate to the problem.

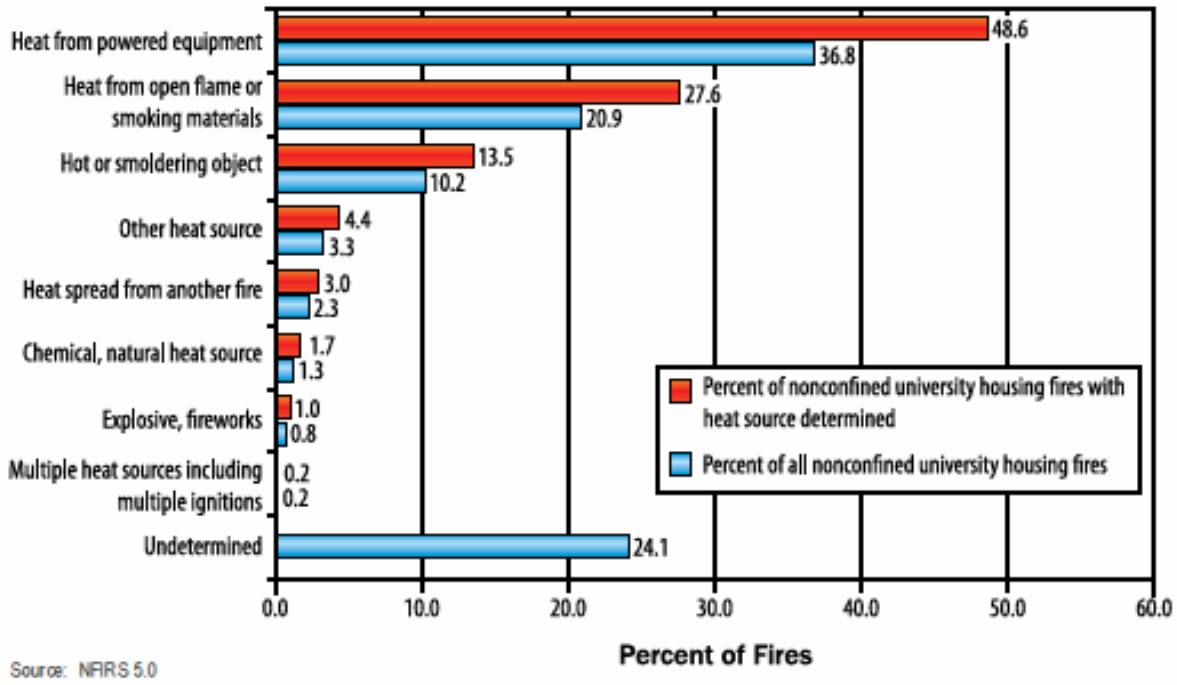
This bill is bad for our industry as well as the life safety of people in public buildings. Speak now or be quiet later!

TOPICAL FIRE REPORT SERIES Volume 10, Issue 1 / November 2009

Univeristy Housing Fires

(Continued from the January Fusible Link)

Figure 4. Sources of Heat in Nonconfined University Housing Fires (2005–2007)



As a third of the causes of nonconfined university housing fires specifically include equipment, it is not surprising that the leading heat source for those fires is heat from powered equipment (92 percent).[8] Of the 23 percent of the fires that occur in bedrooms (Table 5), 10 percent are started by heat from powered equipment, 19 percent are started by radiated or conducted heat from operating equipment, and 12 percent are started by electrical arcing. Interestingly, 20 percent of non-confined university housing fires in bedrooms are started by candles (these data are not available for confined fires). This finding supports the policies enforced by several universities to prohibit candle usage in dormitories and other campus housing.

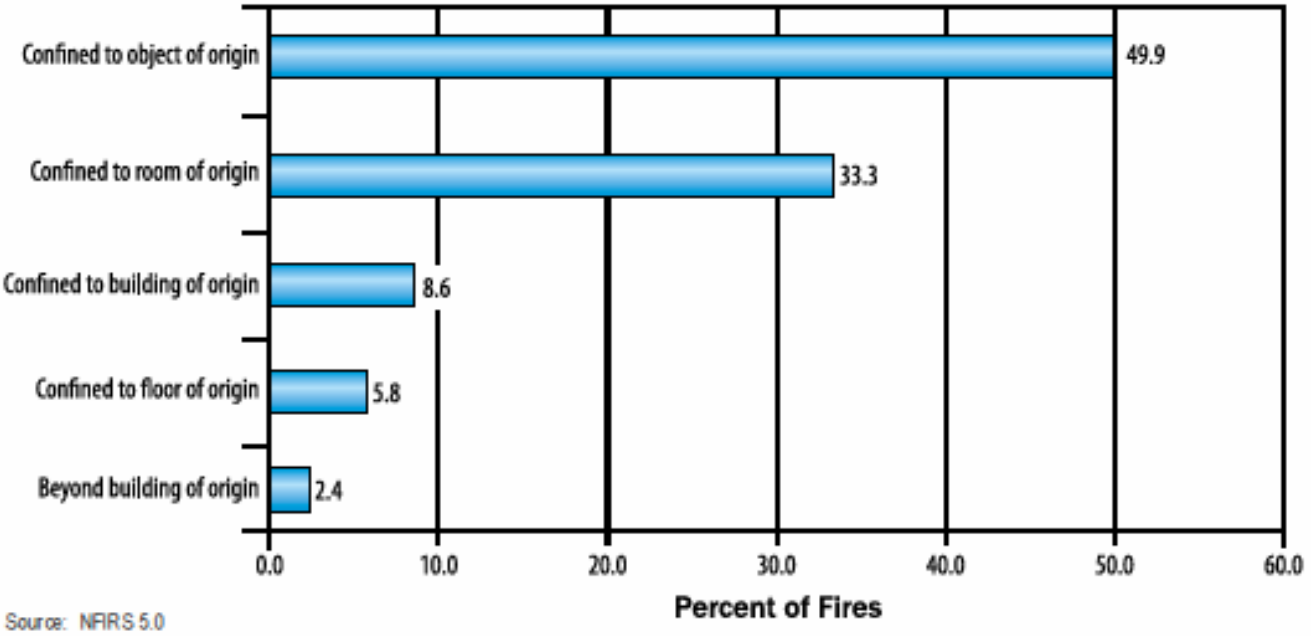
For the 20 percent of non-confined university housing fires that occur in kitchens or cooking areas, 37 percent are started by radiated or conducted heat from operating equipment, 27 percent are started by heat from powered equipment, and 5 percent are started by electrical arcing

Fire Spread in Non-confined University Housing

Fire spread in non-confined university housing is generally contained to the object of fire origin (50 percent) or to the room of fire origin (33 percent) as shown in Figure 5.

When these statistics are combined with the implied fire spread for confined fires (that is, confined fires are implied to be confined to the object of origin), over 90 percent of all university housing fires are confined to the object of origin.

Figure 5. Extent of Fire Spread in Nonconfined University Housing Fires (2005–2007)



Factors Contributing to Ignition

Table 6 shows the leading factors contributing to ignition of non-confined university housing fires. Placing a heat source too close to combustible objects is the leading contributing factor (17 percent). Abandoned or discarded materials are a contributing factor in 16 percent of non-confined university housing fires and the general misuse of materials or products is a contributing factor in 13 percent of the fires. These 3 contributing factors play a role in 45 percent of non-confined university housing fires.[9]

Table 6. Leading Factors Contributing to Ignition for Nonconfined University Housing Fires (Where Factor Contributing Specified, 2005-2007)

Factors Contributing to Ignition	Percent of Nonconfined University Housing Fires (Unknowns Apportioned)
Heat source too close to combustibles	16.8%
Abandoned or discarded materials or products	15.5%
Unspecified misuse of material or product	12.9%

Source: NFIRS 5.0
Notes: Includes only incidents where factors that contributed to the ignition of the fire were specified. Multiple factors contributing to fire ignition may be noted for each incident.

Smoke Alarms

Smoke alarm data are available for both confined and nonconfined fires although for confined fires, the data are very limited in scope.

In 9 percent of non-confined university housing fires there were no smoke alarms present (Table 7). In another 9 percent of these fires, firefighters were unable to determine if a smoke alarm was present. Smoke alarms were present in 82 percent of non-confined university housing fires.

Smoke alarms are known to have operated in 63 percent of non-confined university housing fires. In 6 percent of non-confined university housing fires where smoke alarms were present, the alarms failed to operate.

In 13 percent of confined university housing fires, the smoke alarm effectiveness was unknown (Table 8). Smoke alarms operated and alerted occupants in 83 percent of these confined fires. In 4 percent of confined university housing fires, the occupants were not alerted by the smoke alarm.[10] Note that the data presented in Table 7 and Table 8 are the raw counts from the NFIRS data set and not scaled to national estimates of smoke alarms in university housing fires.

Table 7. NFIRS Smoke Alarm Data for Nonconfined University Housing Fires (NFIRS, 2005-2007)

Presence of	Smoke Alarm	Smoke Alarm Effectiveness	Count	Percent
Present	Fire too small to activate smoke		107	9.4
		Smoke alarm alerted occupants, occupants responded	617	54.0
		Smoke alarm alerted occupants, occupants failed to respond	36	3.1
		No occupants	37	3.2
		Smoke alarm failed to alert occupants	6	0.5
		Undetermined	20	1.7
	Smoke alarm failed to operate		53	4.6
	Undetermined		60	5.2
None present			99	8.7
Undertermined			108	9.4
Total Incidents			1,143	100.0

Source: NFIRS 5.0
Notes: The data presented in Table 7 are raw data counts from the NFIRS data set. They do not represent national estimates of smoke alarms in university housing fires. They are presented for informational purposes. Total may not add to 100 percent due to rounding.

Table 8. NFIRS Smoke Alarm Data for Confined University Housing Fires (NFIRS, 2005-2007)

Smoke Alarm Effectiveness	Count	Percent
Smoke alarm alerted occupants	4,828	83.1
Smoke alarm did not alert occupants	209	3.6
Unknown	772	13.3
Total Incidents	5,809	100.0

Source: NFIRS 5.0
Notes: The data presented in Table 8 are raw data counts from the NFIRS data set. They do not represent national estimates of smoke alarms in university housing fires. They are presented for informational purposes. Total may not add to 100 percent due to rounding.

Examples

The following are some recent examples of university housing fires that were reported by the media:

- May 2009: Two Central Connecticut State University students were accused of setting off the fire alarms with burning popcorn after they tied the doors shut to several dorm rooms. Their intent was to pull a prank in the residence hall. Police and firefighters secured the scene. No one was injured during the incident. 11

- May 2009: Several Northern Illinois University students were displaced after a fire broke out in their fraternity house. One person was taken to a hospital with non-life-threatening injuries. The cause of the fire is unknown, but it started on a sofa on the front porch of the house. Smoking materials have not been ruled out as the cause of ignition.[12]

- April 2009: Beaumont firefighters determined that a Lamar University residence hall fire was caused by a bathroom vent fan that was left running while no one was in the room. It appears that the motor had shorted or overheated, caught on fire, and burned a portion of the bathroom. The fire was confined to the bathroom, and the residence hall's sprinkler system activated, putting out the flames. The fire alarms alerted students and staff, and everyone evacuated the residence hall.13

- May 2009: Quick responses by the local fire department and employees of the University of the Cumberlands attributed to containing a small fire in a residence hall caused by a burning stove and microwave oven. No one was hurt during the fire, and the building sustained only minor damage.[14]

Conclusion

University housing fires have become the focus of increased attention within the State and Federal governments, local and State fire departments, affected neighborhoods and communities, and the criminal justice system. This is largely because they account for and cause injuries and deaths as well as property damage. An estimated 3,800 university housing fires occur each year in the United States. The challenge for communities and the fire service is to pinpoint the reasons why university housing fires occur and to address these issues to prevent future fires, deaths, injuries, and severe property damage. Providing students with fire safety education upon their arrival to the universities may help increase awareness and prevent fires.

NFIRS Data Specifications for University Housing Fires

Data for this report were extracted from the NFIRS annual Public Data Release (PDR) files for 2005, 2006, and 2007. Only version 5.0 data were extracted.

University housing fires were defined as:

Incident types 111 to 123:

Incident Type	Description
111	Building fire
112	Fires in structure other than in a building
113	Cooking fire, confined to container
114	Chimney or flue fire, confined to chimney or flue
115	Incinerator overload or malfunction, fire confined
116	Fuel burner/boiler malfunction, fire confined
117	Commercial compactor fire, confined to rubbish
118	Trash or rubbish fire, contained
120	Fire in mobile property used as a fixed structure, other
121	Fire in mobile home used as fixed residence
122	Fire in motor home, camper, recreational vehicle
123	Fire in portable building, fixed location

Note that incident types 113 to 118 do no specify if the structure is a building.

Incidents type 112 is included as previous analyses have shown that incident types 111 and 112 are used interchangeably.

- Aid types 3 (Mutual aid given) and 4 (Automatic aid given) were excluded to avoid double counting of incidents

- Property use 400 to 464:

Property Use	Description
460	Dormitory-type residence, other
462	Sorority house, fraternity house
464	Barracks, dormitory

and,

- Structure type:
  - 1—Enclosed building
  - 2—Fixed portable or mobile structure
  - 3 Structure type not specified (null entry)

The USFA cause hierarchy was used to determine the cause of university housing fire incidents:15 http://www.usfa.dhs.gov/fireservice/nfirs/tools/fire_cause_category_matrix.shtm

To request additional information or to comment on this report, visit http://www.usfa.dhs.gov/applications/feedback/index.jsp

Notes:

1 National estimates are based on 2005-2007 native version 5.0 data from the National Fire Incident Reporting System (NFIRS) and residential structure fire loss estimates from the National Fire Protection Association's (NFPA's) annual surveys of fire loss. Fires are rounded to the nearest 100, deaths to the nearest 5, injuries to the nearest 25, and loss to the nearest $million.

2 University housing consists of college and university residential buildings that include dormitories and barracks (a combined category), sorority houses, and fraternity houses.

3 In the National Fire Incident Reporting System (NFIRS), version 5.0, a structure is a constructed item of which a building is one type. In previous versions of NFIRS, the term "residential structure" commonly referred to buildings where people live. To coincide with this concept, the definition of a residential structure fire for NFIRS 5.0 has, therefore, changed to include only those fires where the NFIRS 5.0 structure type is 1 or 2 (enclosed building and fixed portable or mobile structure) with a residential property use. Such fires are referred to as "residential buildings" to distinguish these buildings from other structures on residential properties that may include fences, sheds, and other uninhabitable structures. In addition, incidents that have a residential property use, but do not have a structure type specified are presumed to be buildings.

4 "News from CPSC, U.S. Consumer Product Safety Commission: Increase in College Dorm Fire Prompts Officials to Issue Warning," cpsc. gov, August 21, 2007. http://www.cpsc.gov/cpscpub/prerel/prhtml07/07279.html (accessed June 10, 2009).

5 NFIRS distinguishes between "content" and "property" loss. Content loss includes loss to the contents of a structure due to damage by fire, smoke, water, and overhaul. Property loss includes losses to the structure itself or to the property itself. Total loss is the sum of the content loss and the property loss. For confined fires, the expectation is that the fire did not spread beyond the container (or rubbish for incident type 118) and hence, there was no property damage (damage to the structure itself) from the flames. There could be, however, property damage as a result of smoke, water, and overhaul.

6 The average fire death and fire injury loss rates computed from the national estimates above will not agree with average fire death and fire injury loss rates computed from NFIRS data alone. The fire death rate computed from national estimates would be (1000*(5/3,800)) = 1.3 deaths per 1,000 university housing fires and the fire injury rate would be (1000*(50/3,800)) =13.2 injuries per 1,000 university housing fires.

7 For the purposes of this report, the time of the fire alarm is used as an approximation for the general time the fire started. However, in NFIRS, it is the time the fire was reported to the fire department.

8 These causes are: heating, cooking, electrical malfunction, appliances, other equipment, and equipment misoperation. Other causes may also have had equipment involved.

9 Percentages cited in the text may not add to 100 due to rounding.

10 In confined fires, the entry "smoke alarm did not alert occupants" can mean: no smoke alarm was present, the smoke alarm was present but did not operate, or the smoke alarm was present and operated but the occupant was already aware of the fire.

11 Lisa Backus, "CCSU athletes arrested for popcorn fire prank in dorm," bristolpress.com, May 12, 2009. http://www.bristolpress.com/ articles/2009/05/12/news/doc4a08a5386398f485964256.prt (accessed May 28, 2009).

12 "Fire breaks out at NIU frat house," chicagobreakingnews.com, May 6, 2009. http://www.chicagobreakingnews.com/2009/05/firebreaks-out-at-niu-frat-house.html (accessed May 28, 2009).

13 Scott Lawrence, "Investigators determine cause of LU residence hall fire," kfdm.com, April 23, 2009. http://www.kfdm.com/common/printer/view.php?db=kfdm&id=31329 (accessed May 28, 2009).

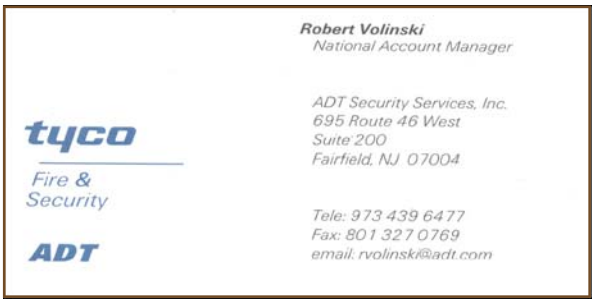
14 Mark White, "Fire damages University of the Cumberlands building, Quick response by local firefighters contain blaze," thenewsjournal.net, May 12, 2009. http://www.thenewsjournal.net/details.cfm?id=2413 (accessed May 28, 2009).

15 USFA's cause hierarchy is designed for structure fires of which buildings are a subset.

NJ Chapter SFPE By Law Change

The Chapters Board has proposed a change/amendment (per Section 10.1) to our bylaws that requires a reading of the proposed change at two successive membership meetings with a vote at the second meeting. The first reading to be December 7 and the second reading with a vote on January 4. The By-Laws proposed change/amendment is as follows:

The last sentence of Section 3.4 states of our By Laws states, "Dues and fees are payable immediately upon election for a new Member or a new Chapter Supporter and for all Member/Supporters on or before August 1st of each fiscal year thereafter." The proposed change/ amendment is as follows, ".....all Member/ Supporters on or before the first Chapter meeting of each fiscal year thereafter." This essentially means that the dues are due prior to our first meeting for the season which is held in September.



February Chapter Meeting—Earthquake and Windstorm – Mitigation Techniques and Analysis of Buildings

Given the significant devastation from the 7.0 earthquake in Haiti, our topic for the Feb Chapter meeting will be both timely and informative. We are fortunate to have Dr. Nathan C. Gould, P.E., S.E.-Director and Chief of Technology for ABS Consulting to address the Chapter on this important topic. ABS is the parent Company of EQE CAT whom many of you may recognize as one of the preeminent Earthquake and Windstorm modeling and structural analysis companies in the world. Those attending should come away with a much better understanding of susceptible building construction and ways to reinforce them to greatly mitigate damage to both the buildings and operational equipment. This is a session that should not be missed. The following is a brief bio of the speaker.

Dr. Nathan C. Gould, P.E., S.E.
Director and Chief of Technology
ABS Consulting
77 Westport Plaza, Suite 210
St. Louis, MO 63146
Phone: 314-819-1550
Fax: 314-819-1551
ngould@absconsulting.com

Dr. Nathan Gould, Chief of Technology for the ABS Consulting Extreme Loads and Structural Risk Division, also serves as the General Manager of the St. Louis office of ABS Consulting. He is a practicing structural engineer with over 19 years of experience in the design, construction and rehabilitation of major structures in all regions of the United States. Dr. Gould is active in the utilization of performance based seismic design criteria and methodology for the design of new buildings and the retrofit of existing structures. He is the technical leader for ABS Consulting in the implementation of state-of-the art seismic analysis and design criteria for both buildings and equipment. Dr. Gould is the author of numerous technical papers including recent articles on Performance Based Seismic Design, Progressive Collapse of Structures, Managing Extreme Wind Losses, and Terrorism Risk. He currently serves on serves on several National technical committees and organizations related to seismic analysis, design and retrofit, including the ASCE 7 Seismic Subcommittee. He is a licensed Professional and Structural Engineer in several states.

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Phone: (973) 541-6771
Fax: (973) 541-6909

MEETING NOTICE

Date: February 1, 2010

Place: Hanover Manor
16 Eagle Rock Avenue
East Hanover, NJ

Price: $30.00

Dinner: 5:00-6:00 (Cash bar for mixed drinks)
Dinner at 6 PM

Topic: Earthquake & Windstorm - Construction and Mitigation Analysis—ABS/EQE CAT—Nathan Gould, Director and Chief of Technology, P.E., S.E.

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.

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

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

OR PAY AT THE DOOR

NAME: _____

COMPANY:_____TELEPHONE:_____

Meeting Dates/Programs 2009-2010

DATE	TOPIC
February 1	Earthquake & Windstorm Design - Construction and Mitigation Analysis—Dr. Nathan Gould, Director and Chief of Technology—ABS Consulting
March 1	HVLS (High Volume Low Speed) Fan Update—Peter Wilse, XL GAPS
April 23	Annual Technical Seminar (possibly joint with AFAA)
May 3	Pop up Curbs—Flammable Liquids
June 14	FM Global Standards Update
June 21	Golf Outing—West Point

2008-2009 Chapter Committees

STANDING COMMITTEES

Program
Ed Armm, Chairman
Consulting - Peter Rullo
Richard Ravaioli
Arrangements
Vicki Serafin, Chairperson

Membership
John Cholin, Chairman

Nominating
Dave Gluckman, Chairman
Glenn Dietz
Chuck Gandy

Scholarship Fund
Chuck Gandy, Chairman
Ed Armm
Mike Machette
Alternates: Rich Reitberger, Jim Tolos

Auditing
Joe Janiga, Chairman
John Warnet

Archivist
Rich Reitberger, Chairman
Nicole Smith

Historian
Jim Tolos

Communications
Fusible Link—Brad Hart
Ana Crisostomo—Coordinator
Mailing/Automation/e-mail—Vicki Serafin, Chairperson
Website—Joe Janiga
Facebook & Twitter Coordinator—Todd Vazquez

SPECIAL COMMITTEES

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Jim Tolos, Chairman
Joe Janiga - Co-Chairman

Career Recruitment
Al Dopart, Chairman
Glenn Deitz
Dave Gluckman
Glen Buser

Golf Outing
Richard Reitberger, Chairman
Joe Janiga

Awards
Rich Reitberger, Chairman

PE Examination
John Cholin, Chairman
Joe Janiga
Mike Newman
Chuck Gandy

Chapter Seminar/Field Trip
Richard Reitberger, Chairman
Dave Gluckman
Joe Janiga

Legislative
Rich Reitberger, Chairman
Vinnie Fichera
Jerry Naylis
Dave Kurasz

Finance
Rich Reitberger - Chairman
John Cholin
Bob Murray

HELPFUL LINKS

ADAAG http://www.access-board.gov/adaag/about/index.htm
AFAA National http://www.afaa.org/
AFSA http://www.firesprinkler.org/
ANSI http://web.ansi.org/
ASHRAE http://www.ashrae.org/
Campus-Firewatch http://www.campus-firewatch.com/
Coffee Break Training http://www.usfa.dhs.gov/nfa/coffee-break/
CPSC http://www.cpsc.gov/
CSAA http://www.csaaul.org/
Municipal Codes (E Codes) http://www.generalcode.com/Webcode2.html
FDNY http://nyc.gov/html/fdny/html/home2.shtml
FM Global http://www.fmglobal.com/
FSDANY http://www.fsdany.org/regs.htm
FSI http://www.firesprinklerinitiative.org/
FSSA http://www.fssa.net/
Fire Tech Productions—Nicet Training (FTP) http://www.firetech.com/
Home Fire Spklr Coalition http://www.homefiresprinkler.org/
HVAC Bld. Control Fire Safety http://www.iklimnet.com/hotelfires/hotelfiresmain.html
AFAA-NJ http://www.afaanj.org/
International Code Council - http://www.iccsafe.org/
International Code Council Residential Sprinkler Exam - http://www.iccsafe.org/news/nr/2009/0709_ResidentialSprinklerExam.pdf
The Joint Commission (JCAHO) - http://www.jointcommission.org/www.JointCommission.org/
Material safety data Sheets (MSDS-OSHA Site) - http://www.osha.gov/SLTC/hazardcommunications/index.html
National of Fire Equipment Distributors (NAFED) - http://www.nafed.org/index.cfm