

## ***AGENDA***

### **NFPA High-Rise Building Safety Advisory Committee (HRB-SAC)**

July 12-13, 2005  
National Institute for Standards and Technology  
Gaithersburg, MD

1. Call to Order – 8:30 AM
2. Introduction of Members and Guests.
3. Approval of December 14-15, 2004 meeting minutes – **Agenda Attachment A.**
4. Review meeting schedule and key dates - **Agenda Attachment B**
5. WTC presentations by NIST Staff
6. Develop recommendations and comments for NFPA's response to the NIST-WTC report
7. Status report on incentives to exceed minimum building regulations.
8. Adjournment – 5:00 PM, July 13, 2005.

# **Agenda Attachment A**

## ***MEETING MINUTES***

### **NFPA High-Rise Building Safety Advisory Committee (HRB-SAC)**

December 14-15, 2004  
Sheraton Hotel  
Boston, MA

1. **Call to Order.** Chair Quiter called the meeting to order at 8:30 am.
2. **Introduction of Members and Guests.** Members and guests provided self-introductions. All principle members of the committee were in attendance as follows:

<b>Name</b>	<b>Representing</b>
James Quiter (chair)	Arup
Richard Bukowski	National Institute of Standards and Technology – Building and Fire Research Laboratory
Jon Magnusson (December 14 only)	Magnusson Klemencic Associates / National Council of Structural Engineers
Jack Murphy	JJM & Associates, LLC / Fire Safety Directors Association of Greater New York
Steven Nilles	Lohan Caprile Goettsch Architects / Council on Tall Buildings & Urban Habitat
Jake Pauls	Jake Pauls Consulting Services on Building Use and Safety / American Public Health Association
Sally Regenhard	The Skyscraper Safety Campaign
Wesley Shoemaker	Winnipeg Fire Paramedic Service
Milosh Puchovsky (non-voting staff liaison)	NFPA

The following guests were also in attendance:

<b>Name</b>	<b>Representing</b>
Sharon Gamache (December 14 only)	NFPA
Casey Grant (December 14 only)	NFPA
Gary Keith	NFPA
Nadine Post (December 14 only)	Engineering News Record (Press)
Robert Solomon	NFPA
Gary Tokle (December 14 only)	NFPA

3. **Welcome/Overview Remarks.** Chair Quiter welcomed everyone to the meeting and reviewed the agenda. The primary purpose of the meeting was to establish the objectives of the committee and to confirm the procedures under which the committee will operate.

It was indicated that meetings are open to the public, in accordance with NFPA policy, and that any member of the public or press is welcome. There was some discussion about fairness and objectivity of press coverage, and Chair Quiter and staff agreed that they would work with any press who are present to try to assure un-biased coverage.

4. **NFPA Programs, Projects and Process.** Robert Solomon, Assistant Vice President in charge of NFPA's Building Fire Protection and Life Safety Department, provided an overview of NFPA's programs, projects and process as indicated in Minutes Attachment A.
5. **NFPA Codes, Standards and High Rise Buildings.** Milosh Puchovsky, Principle Fire Protection Engineer in NFPA's Building Fire Protection and Life Safety Department, provided an overview of NFPA codes and standards pertaining to high-rise buildings as indicated in Minutes Attachment B.
6. **NFPA Public Fire Protection Division: High Rise Buildings and Fire Fighter Safety Issues.** Gary Tokel, Assistant Vice President in charge of NFPA's Public Fire Protection Department, indicated that a specific NFPA document does not exclusively address fire fighter safety in high-rise buildings, but that portions of some documents address such issues in part. Mr. Tokel indicated that, in addition to safety concerns, some NFPA document address fire fighter operational issues. Related issues currently being addressed by projects within Mr. Tokel's department or issues associated with fire fighter safety and operations in high rise buildings include building breathing air systems (currently being considered for the Uniform Plumbing Code), application of NFPA 1600, *Standard on Disaster/Emergency Management and Business Continuity Programs*, for high rise buildings, and inter-operability of fire fighter communication equipment and fire ground communications in general.
7. **NFPA Center for High Risk Outreach.** Sharon Gamache, Director of NFPA's Center for High Risk Outreach, provided an overview of NFPA's Center for High Risk Outreach as indicated in Minutes Attachment C.
8. **NIST Update on the WTC Investigation.** Richard Bukowski of NIST's Building and Fire Research Laboratory provided a status report of NIST's soon to be published WTC study. It was indicated that the draft report, which is approximately 10,000 pages in length, is planned for issuance on March 1, 2005. The report will contain 8 technical topic reports and will provide a summary of key findings and recommendations. Because of constitutional and state rights issues, the NIST report will recommend rather than mandate changes to building and fire regulations. Upon release of the draft report, a 4 month public review period will follow with a NIST sponsored workshop scheduled for June 2005 in Gaithersburg, Maryland. Based upon receipt of public input, a final report will be issued later in 2005.
9. **HRBSAC: Discussion of Function.** It was noted that the committee officially reports to NFPA's Standards Council and is to serve as a resource to the Council, NFPA's Technical Committees and the public at large. The group is charged with identifying needs and emerging issues associated with high-rise buildings as indicated in the committee's charter,

and developing recommendations as to how NFPA can provide leadership on such issues. It is expected that the committee will review pertinent information about high rise buildings, such as the soon to be published NIST-WTC investigation report, and provide key input with regard to the development and revision of codes and standards, research initiatives and education and public awareness efforts. The group can address issues that directly relate to NFPA activities as well as those that are initiated by other groups. At times the committee may also receive specific directives from NFPA's Standards Council.

The following remarks were also made:

- a. The World Trade Center disaster should not be the only basis for decisions and recommendations. Other high-rise incidents should also be considered.
- b. The committee should work toward providing measured, capable, intelligent responses and recommendations.
- c. The committee should be mindful of economic and other restrictions its recommendations may place on society.
- d. The committee should take a proactive rather than reactionary role.
- e. The committee should assist in specifying the hazards to be protected against.
- f. Providing for effective changes regarding the safety of occupants in high-rise buildings is a shared responsibility.
- g. The committee should identify both long-term and short-term goals and objectives.

#### **10. HRBSAC: Priorities/HRBSAC agenda setting for Immediate/Future Actions.**

- a. **Revisions to Operating Procedures.** The committee refined its operating procedures with respect to voting as indicated in Minutes Attachment D (Committee Charter). Because this group is an Advisory Committee rather than an NFPA Technical Committee, both the Chair and NFPA staff are expected to more actively participate.
- b. **Subjects for consideration.** The committee revised the subject areas of interest as indicated in Minutes Attachment D (Committee Charter, Attachment A)
- c. **Code changes regarding wider stairs.** The committee discussed the proposed changes currently being considered for NFPA 101 and NFPA 5000 regarding minimum requirements for wider stairs (comments 101-46, 101-56c, 101-353, 5000-323, 5000-331c). The committee agreed to table any action on this subject until after the responsible technical committees and technical correlating committees have completed their balloting. However, the committee agreed that the respective TCC's should be notified about the need to correlate any changes to the minimum requirements for stair width with the requirements for minimum door width for the exit discharge door from the stairs. A verbal notice to the staff liaisons of the responsible TCC's will be provided.

- d. Incentives to voluntarily exceed minimum building regulations.** The concept of developing an incentive-based building certification program for safety, similar to the LEEDS program for sustainable building design, was discussed. The concept includes the identification and listing of safety features in excess of those required by building regulations of which building owners and developers could voluntarily choose to provide for their buildings. Based upon the number and type of additional safety features provided, the building would receive a certification. Steve Nilles agreed to pursue this concept further and report to the committee at their next meeting.
- e. Additional members.** It was agreed to consider additional membership for the committee with representation from the following two interest groups:
  - i) Building owner/developer
  - ii) Building security

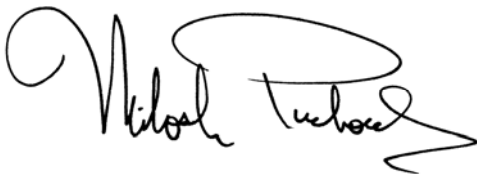
The committee also discussed the possibility of considering representation from the following interest categories in the future:

- a) Public education / consumer
- b) International (outside North America)
- c) Code officials
- d) Disabled persons
- e) HVAC system

11. **Scheduling of next meeting.** Richard Bukowski invited the committee to NIST's facilities in Gaithersburg, MD for their next meeting. Mr. Bukowski indicated that the members of NIST's staff could provide presentations about specific areas of the WTC study. Committee members thanked Mr. Bukowski for the invitation and agreed to hold their next meeting on May 3-4, 2005 in Gaithersburg, MD at NIST's facilities.

12. **Adjournment.** Chair Quiter adjourned the meeting at 1:00 pm, December 15, 2004.

Minutes prepared by

A handwritten signature in black ink, appearing to read 'Milosh Puchovsky', with a large, stylized flourish at the end.

Milosh Puchovsky, P.E.  
Staff Liaison

# **Minutes Attachment A**



## HRBS Advisory Committee

## Agenda

- ❑ Welcome/Introductions
- ❑ NFPA Programs, Projects, Process
- ❑ NFPA Codes and High Rise Buildings
- ❑ NFPA Public Fire Protection Division
- ❑ NFPA Center for High Risk Outreach
- ❑ NIST Update
- ❑ HRBSAC: Discussion of Function
- ❑ HRBSAC: Priorities/Future Actions

## NFPA Mission

*To reduce the worldwide burden of fire and other hazards on the quality of life by providing and advocating scientifically-based consensus codes and standards, research, training and education.*

## NFPA Mission

- ❑ Accomplished through:
  - Codes & standards
  - Advisory services
  - Advisory committees
  - Training and certification
  - Fire analysis & research
  - Building loss investigations
  - Public safety education
  - Member programs & publications

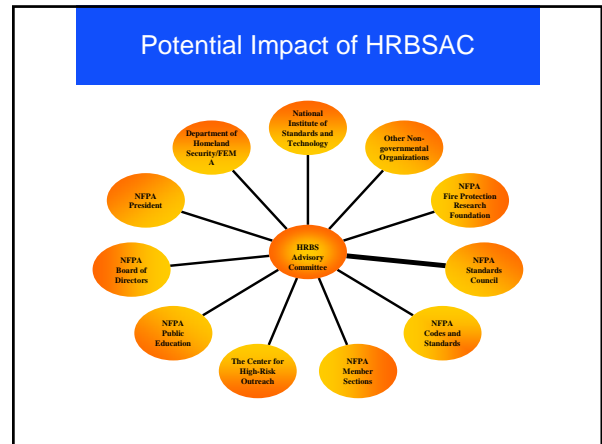
## NFPA Background

- ❑ Founded in 1896
- ❑ Private, non-profit organization
- ❑ 75,000 members worldwide
- ❑ More than 80 trade & professional organizations
- ❑ More than 300 codes and standards
- ❑ More than 225 Technical Committees
- ❑ 6,500 volunteers
- ❑ Developing key construction codes and standards for more than 100 years

## NFPA Reach

- ❑ Global presence
- ❑ Service staff of 350
- ❑ 10 Regional Offices
  - CA, CO, DC, DE, FL, KY, MA, NJ, TX
- ❑ International offices
  - Mexico City
  - Toronto
  - Melbourne
  - Paris
  - Beijing





### Codes & Standards

- General code & standard development
- NFPA code/standard development process

### General Code & Standard Development

- Standards
  - Address specific technical issues
  - Tend to be more common, and have fewer pages
- Codes
  - Address broad topics, & reference standards on details
  - Are less common, and are very comprehensive

### General Code & Standard Development

- Product-oriented documents
  - Focus on marketplace coordination
  - ✦ Example: pipe standard
- Safety-oriented documents
  - Focus on establishing minimum acceptable levels, for topics such as public safety, health, and protection of the environment.
  - ✦ Example: building code
- Combination documents
  - Addressing products and safety
  - ✦ Example: fire test standards

### ANSI (American National Standards Institute)

- Private, non-profit organization, since 1918.
- Administers and coordinates the U.S. voluntary standardization and conformity assessment systems.
- Gateway for certain International activities
  - ISO
  - IEC (via the U.S. National Committee)
  - PASC (Pacific Area Standards Congress)
  - COPANT (Pan American Standards Com)

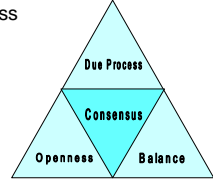
### ANSI (American National Standards Institute)

- ❑ Assists with establishing levels of safety & health, and protection of the environment.
- ❑ Improves efficiency of marketplace.
- ❑ Helps provide legal safeguards.
  - Antitrust, Product Liability, Negligence, & so on ...
- ❑ Provides forum for government coordination.
  - Federal Government Acceptability
  - Local Jurisdiction Recognition



### ANSI (American National Standards Institute)

- ❑ ANSI cardinal principles for designation as an American National Standard (ANS)
  - Hallmarks of the ANS process
    - openness
    - due process
    - consensus by a balance of materially affected interests
    - consideration of views and objections
    - transparency of the process
    - fundamental fairness--ensures level playing field



### U.S. Federal Government Role

- ❑ U.S. Federal Government defers to States and other local jurisdictions on certain topics
  - Typical of broad impact codes like those on building, mechanical, electrical, & plumbing
  - Often addressed on state-by-state basis, using model documents with amendments



### U.S. Federal Government Role

- ❑ General recognition of overall system
  - OMB Circular A-119; and National Technology Transfer & Advancement Act of 1995 (Public Law 104-113).
  - Encourages participation and document use.
  - Acknowledges efforts of private developers.



### NFPA Codes & Standards Development

- ❑ Uniquely open process
- ❑ All interested parties can participate
- ❑ Balanced
- ❑ Based on consensus

*Public safety is everybody's business*

### NFPA Codes & Standards Development

- ❑ Participants in process
  - Technical Committees
  - Extensive public input
  - NFPA members
  - Standards Council
  - Board of Directors

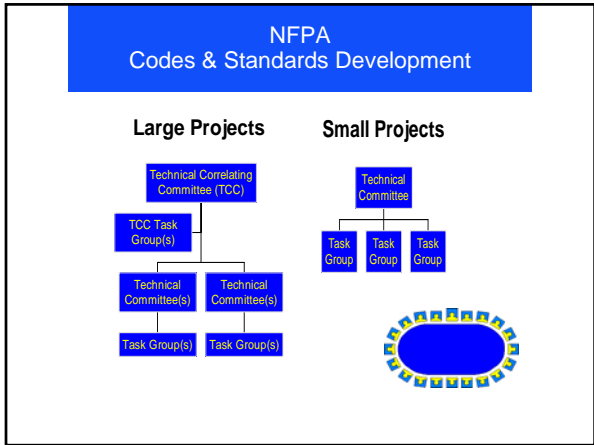


**NFPA**  
Codes & Standards Development

- ❑ Steps in the process
  - Report on Proposals
  - Report on Comments
  - NFPA Annual Meetings
  - Standards Council Issuance

**NFPA**  
Codes & Standards Development

- ❑ NFPA Technical Committees
  - Volunteers
  - 225 Technical Committees
  - Reviewed continually
  - Establishing consensus – two-thirds vote required
    - ❖ Consumers
    - ❖ Enforcing authorities
    - ❖ Users
    - ❖ Special experts
    - ❖ Applied research/testing laboratory
    - ❖ Labor
    - ❖ Installers/maintainers
    - ❖ Insurance
    - ❖ Special experts




**NFPA**  
Codes & Standards Development

- ❑ Extensive public input
  - Proposals
  - Comments
  - Annual Meetings
  - Advisory Committee input
  - Standards Council issuance
  - 104 week revision cycles (2 years)

**NFPA**  
Codes & Standards Development

- ❑ Standards Council Responsibilities
  - Adjudicate appeals
  - Issue documents
  - Appoint Technical Committee members
  - Assign Committee scopes



**Making “State of the Art” Documents**

- ❑ NFPA Building Loss Investigations
- ❑ Fire Protection Research Foundation
- ❑ NFPA One-Stop Data Shop
- ❑ Morgan Library
- ❑ NFPA Web Site

### Making "State of the Art" Documents

- ❑ NFPA Building loss investigations
  - Conducts on-site investigations
  - Focuses on event analysis and lessons learned
  - Feedback goes into code development
  - Examples:
    - ❖ Hurricane Charlie with FEMA MAT (2004)
    - ❖ WTC incidents (1993, 2001)
    - ❖ Station nightclub fire
    - ❖ Oklahoma City bombing
    - ❖ Chunnel fire
    - ❖ Nightclub fire in Sweden
    - ❖ Ecstasy cruise ship fire

### Making "State of the Art" Documents

- ❑ Fire Protection Research Foundation (FPRF)
  - Clarifies need for research
  - Establishes funding
  - Facilitates research project
  - Disseminates results

### Making "State of the Art" Documents

- ❑ NFPA One-Stop Data Shop (OSDS)
  - Premier source of incident data
  - Gathered from multiple sources

### Key NFPA Codes and Standards

- ❑ NFPA 1, Uniform Fire Code
- ❑ NFPA 70, National Electrical Code
- ❑ NFPA 72, National Fire Alarm Code
- ❑ NFPA 101, Life Safety Code
- ❑ NFPA 5000, Building Construction and Safety Code

### Key NFPA Codes and Standards

- ❑ NFPA 1, Uniform Fire Code
  - Provides:
    - ❖ Life safety
    - ❖ Property protection
    - ❖ Public welfare
    - ❖ Firefighter safety

### Key NFPA Codes and Standards

- ❑ NFPA 70, National Electrical Code
  - Most widely adopted model code
  - Utilized around the world
  - Covers installation of electrical systems
  - Protects people from the dangers of electricity

### Key NFPA Codes and Standards

- ❑ NFPA 72, National Fire Alarm Code
  - Governs all fire alarm systems and their components
  - Covers application, installation, location, performance, maintenance
  - Provides requirements for:
    - ❖ initiation (automatic & manual)
    - ❖ transmission
    - ❖ notification
    - ❖ annunciation

### Key NFPA Codes and Standards

- ❑ NFPA 101, Life Safety Code
  - Applicable to new and existing construction
  - Applicable on a retroactive basis
  - Establishes regulation and criteria for:
    - ❖ construction features
    - ❖ means of egress
    - ❖ interior finish
    - ❖ alarms/detection
    - ❖ automatic sprinklers
    - ❖ special provisions
    - ❖ building utility services
    - ❖ operating features

### Key NFPA Codes and Standards

- ❑ NFPA 5000, Building Construction and Safety Code
  - First model building code developed through ANSI-accredited process
  - Provisions for all aspects of design and construction
  - Occupancy-based format

### HRBSAC Role

- ❑ Identify needs and emerging high rise issues
- ❑ Provide recommendations to the NFPA Standards Council
- ❑ Ensure that NFPA's code and standard development process includes latest thinking on high rise safety issues and other related matters
- ❑ Review NFPA codes and standards
- ❑ Review NFPA support services, research, training, and public education efforts
- ❑ Provide code provision proposals or comments as part of NFPA process

# **Minutes Attachment B**

# High Rise Buildings & NFPA Codes and Standards



## Agenda

- Fire & life safety concerns of tall buildings
- NFPA codes and standards
- Traditional building regulations
- Performance-based options
- Proposed changes



## High Rise Building - Definition

- A building greater than 75 ft (23m) in height where the building height is measured from the lowest level of fire department vehicle access to the floor of the highest occupiable story.



## Classes of High Rise Buildings

- Apartment Buildings
- Hotels and Motels
- Hospitals
- Office Buildings
- Mercantile, Transportation, Assembly, Storage, Industrial



## Fire Experience

- High-rise fires with 10 or more fatalities:
- 23 incidents from 1960 to 1990
  - 6 incidents since 1990 (includes Oklahoma City bombing, WTC and one industrial facility)



## Fire Experience

- Tae Yon Kak Hotel, Korea
  - 1971, 163 fatalities
- Joelma Building, Brazil
  - 1974, 179 fatalities
- MGM Grand Hotel, Las Vegas
  - 1980, 85 fatalities
- One meridian Plaza, Philadelphia
  - 1991, 3 fatalities
- World Trade Center, New York
  - 1993, 2001, ~2500 fatalities



## Fire & Life Safety Concerns

- Concerns center around building height in conjunction with occupant and fire loads & fire department access
- Limitations of fire apparatus in reaching upper floors
- Special requirements in building regulations for such structures



## Fire & Life Safety Concerns

- Fire load and spread
- Building location & access
- Delays in deployment of first responders and equipment
- Occupant notification and egress systems
- Protection of egress paths
- Smoke movement
- Emergency power & lighting



## Traditional Building Regulations

- Reflection of public expectation for safety
- Single fire source representative of hazard associated with building occupancy/use
- Protect occupants during normal operations and emergency conditions
- Property protection and preservation of historic fabric not typically addressed



## Traditional Building Regulations – Fire Safety Provisions

- Construction type
- Compartmentation
- Interior finish
- Egress Provisions
- Active fire safety systems (sprinkler, standpipe, detection, alarm, communication, smoke management, standby power, lighting)
- Maintenance & Testing
- Emergency plans & drills



## Code Provisions for High Rise Buildings

- NFPA 101 – section 11.8
- NFPA 5000 – chapter 33
- NFPA 1 – section 20.16 and others
- Installation Standards
  - NFPA 13 - Sprinkler Systems
  - NFPA 14 - Standpipe Systems
  - NFPA 20 - Fire Pumps



## NFPA 101 – Life Safety Code

- Goals
  - Fire & Similar Emergencies
    - Protection of occupants not intimate with initial fire development
    - Improve the survivability of occupants intimate with initial fire development
  - Crowd Movement
    - Provide for reasonably safe crowd movement in emergency and non-emergency situations





## NFPA 101 - Life Safety Code

- Section 11.8 applies in addition to requirements for specific occupancies
- Supervised automatic sprinkler system with control valve and water-flow device on each floor.
- Class I standpipe system
- Fire alarm system with emergency voice/alarm communication system
- Two-way telephone service fire department use (exception for fire department radio system)



## NFPA 101 – Life Safety Code

- Emergency lighting
- Standby power connected to the following
  - Fire alarm system
  - Electric fire pump
  - Emergency command center
  - One elevator serving all floors with power transfer capabilities
  - Mechanical equipment for smokeproof enclosures
  - Smoke management systems



## NFPA 101 – Life Safety Code

- Emergency control station with the following:
  - Voice fire alarm system panels and controls
  - FD two way telephone
  - Fire detection and fire alarm system panels
  - Elevator floor location and operation annunciators
  - Sprinkler valve and waterflow annunciators
  - Emergency generator status
  - Controls for any automatic stairway door unlocking
  - Fire pump status
  - Telephone for FD use



## NFPA 5000 – Building Construction & Safety Code

- Goals
  - Safety
  - Health
  - Building usability
  - Public welfare
  - Property Protection as it relates to the other goals
  - Cultural heritage as a subset of public welfare



## NFPA 5000 – Building Construction & Safety Code

- In addition to requirements of NFPA 101, additional requirements apply to building construction and exit stair enclosures.



## NFPA 5000 – Construction Types for High Rise Buildings

- Permitted construction types:
  - Type I(442) – unlimited height,
  - Type I(332) – 420 ft (sprinklered),
  - Type II(222) – 180 ft (sprinklered)
  - Type II(111) – 85 ft (sprinklered)
  - Type III(211) – 85 ft (sprinklered)
  - Type IV(2HH) – 85 ft (sprinklered)



## NFPA 5000 – Construction Types for High Rise Buildings

- Reduction in minimum construction type permitted for sprinklered buildings with exits constructed as smokeproof enclosures for other than mercantile and certain types of storage and industrial occupancies.



## NFPA 5000 – Exit Enclosures for High Rise Buildings

- All vertical exit stair enclosures to be smokeproof enclosures.
- Stair enclosures more than 75 ft in height to include fire doors tested under positive pressure.



## Options for Code Compliance

Goals and Objectives of NFPA 1, NFPA 101 and NFPA 5000 can be satisfied through:

- Prescriptive requirements
- Performance-based design
- Equivalency



## Design Options - A Performance-Based Approach

- Fire safety goals, objectives and criteria
- Characteristics of people or property exposed
- Potential hazards and fire scenarios
- Suitable evaluation tools (calculation methods, computer models, fire tests)
- Documentation including safety factors
- Verification of proposed solution



## Proposed Changes

- Wider stairs
- Supplemental means of evacuation
- Elevators for egress
- Emergency helicopter landing facilities



## Questions ?



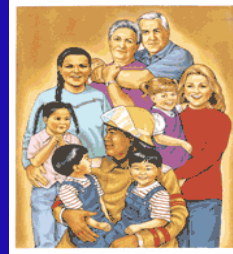
# **Minutes Attachment C**

## Presentation to the High-Rise Building Safety Advisory Committee

Sharon Gamache  
Executive Director  
NFPA Center for High-Risk Outreach  
December 14, 2004



## NFPA Center for High-Risk Outreach



### Mission:

To reduce deaths and injuries from fires and burns among those at highest-risk.



## Outreach

- ◆ Young children
- ◆ Older adults
- ◆ People in low-income communities
- ◆ People with disabilities



## Solutions 2000 Symposium (1999)

- ◆ Sponsored by the North American Coalition for Fire and Life Safety Education
- ◆ Brought together fire safety professionals and advocacy groups
- ◆ Developed recommendations targeting children, older adults, and people with disabilities



## Beyond Solutions 2000 (2001)

Examined issues related to egress capability, early warning, and fire sprinkler protection for those who may not be able to take life-saving action in a timely manner in the event of a fire



## Focus on Fire Safety for People with Disabilities (2002)

- Recommend fire safety messages and materials
- Identify new opportunities and methods for dissemination of materials
- Identify potential sources of funding for safety campaigns
- Develop a national strategy to encourage use of fire safety solutions



### Fire and Life Safety Task Force for People with Disabilities Meeting, October 2003

- ◆ Establish criteria for reviewing public education materials and curriculum.
- ◆ Reviewed NFPA brochures and made recommendations for changes.
- ◆ Made recommendations for educational programs on the website.



### Task Force criteria for NFPA educational materials

- ◆ More sensitive in all areas of diversity, including socio-economic, ability, cultural and living situations. Integrate messages and pictures of people with disabilities into general fire safety brochures.
- ◆ Illustrate information with photos and drawings and provide clear and simple explanations of pictures for those who are blind.



### Task Force criteria for NFPA educational materials (continued)

- ◆ Material should be technically accurate, compelling, and motivating.
- ◆ Experts in a variety of disabilities should be included in the design and review of all materials.



### Fire Safety for People with Disabilities

Content and design recommended by the Task Force

Reviewed at all stages of development



### Fire and Life Safety Task Force for People with Disabilities

- ◆ New website area under Learning and Public Education -- Safety for People with Disabilities
- ◆ Sponsorship of sessions at NFPA Fall Education Meeting and the World Safety Conference and Expo



### Participation in 2004 Conferences

- ◆ Disaster Preparedness for People with Disabilities, September, 2004
- ◆ Emergency Evacuation of People with Physical Disabilities from Buildings, October 2004



## Issues Brought up at Conferences

- ◆ Most people with disabilities do not want to wait to be rescued.
- ◆ Debate occurs at each session on use of elevators.
- ◆ Some buildings and workplaces have multiple people with disabilities.
- ◆ "Nothing about us without us." People with disabilities must be included in planning.



## Remembering When™: A Fire and Fall Prevention Program for Older Adults

A comprehensive program developed by the National Fire Protection Association and the Centers for Disease Control and Prevention



## Approaches for Reaching Older Adults



- Group Presentations
- Home Visits
- Smoke alarm installation and fall intervention



Fire Message Card

2

For Table Top Display

**Give space heaters space.** Keep them at least three feet (one meter) away from anything that can burn — including you. Unplug heaters when you shut them off, leave your home, or go to bed.



Another fine mess: keep space heaters away from anything that can burn.

(Stan Laurel and Oliver Hardy in a sketch.)

Fire Message Card

8

For Table Top Display

**Plan your escape around your abilities.** Have a telephone in your bedroom and post the local emergency number nearby in case you are trapped by fire.



Fall Message Card

**3**

For Table Top Display

**Clear the way.**  
Keep stairs and walking areas free of electrical cords, shoes, clothing, books, magazines, and other clutter.



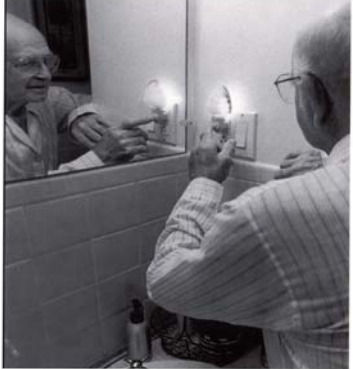
NFPA  
CDC

Fall Message Card

**4**

For Table Top Display


**Look out for yourself.**  
See an eye specialist once a year. Poor vision can increase your chance of falling. Improve the lighting in your home. Use night lights to light the path between your bedroom and bathroom. Turn on the lights before using the stairs.



NFPA  
CDC


### Resource Packet

- ◆ Fire and Fall Reminders
- ◆ Fire Safety for People with Disabilities fact sheet
- ◆ High-Risk Fire Safety Tips
- ◆ Behavior cards
- ◆ Trivia game



### Rhode Island Project

- ◆ Trains senior citizen public housing staff and fire prevention officers.
- ◆ Focuses on *Remembering When*, NFPA's Life Safety Code®, high-rise evacuation, and sprinklers
- ◆ Provides dialogue between housing managers, maintenance and security workers, social workers, and fire service



### Rhode Island Project Partners

- ◆ Providence Fire Department
- ◆ R.I. Housing Department
- ◆ Fire Marshal's State Association
- ◆ R.I. Department of Elder Affairs
- ◆ NFPA Center for High-Risk Outreach




### CDC Implementation Partnership

- ◆ CDC funded three year implementation and evaluation project
- ◆ Implementations in the states of Arkansas, Maryland, Minnesota, North Carolina, and Virginia
- ◆ Strategies include group presentations, home visits, and smoke alarm installation.



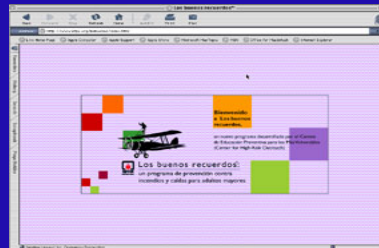
## Illinois Implementation



- ◆ Partners are the Dept. of Aging, Office of the State Fire Marshal, and Department of Public Health
- ◆ Implementations sites are both rural and urban.
- ◆ Includes group presentations, home visits, smoke alarm installations/night light distribution, and data collection.



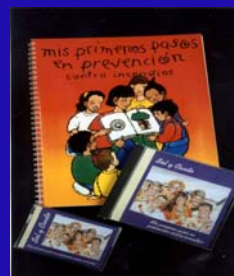
[www.losbuenosrecuerdos.org](http://www.losbuenosrecuerdos.org)



*Los buenos recuerdos* features Latino famous people and songs



**NFPA's *Mis Primeros Pasos en Prevención Contra Incendios®* (Spanish LNTB Preschool Program)**



Public Education Division

### ◆ Risk Watch®



Preventing Unintentional Injuries

- ◆ Motor Vehicle
- ◆ Fire and Burns
- ◆ Choking, Suffocation, and Strangulation
- ◆ Poisoning
- ◆ Falls
- ◆ Firearms injuries
- ◆ Bicycle and Pedestrian
- ◆ Water Safety





## State Team Approach

- ◆ Fire
- ◆ Education
- ◆ Law Enforcement
- ◆ Health



## NFPA Risk Watch Champion Management Teams: 30 states/2 provinces

2000	2001	2002	2004
Alabama	Florida	Alaska	Alberta
Delaware	Illinois	Arizona	Kentucky
Indiana	New Hampshire	Colorado	Maryland
Montana	Rhode Island	Louisiana	Nevada
Nebraska	Southern California	Minnesota	South Carolina
New York		Mississippi	
North Carolina		Northern California	
Oklahoma		Pennsylvania	
Ontario		Texas	
Tennessee		Wisconsin	
Utah			
Virginia			
Washington			



[www.riskwatch.org](http://www.riskwatch.org)



## NFPA Center for High-Risk Outreach

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# **Minutes Attachment D**



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## **High Rise Building Safety Advisory Committee (HRBSAC)**

### **CHARTER**

#### **Purpose**

The High Rise Building Safety Advisory Committee (HRBSAC) shall be a standing advisory group, reporting directly to the NFPA Standards Council. The HRBSAC shall be charged with:

- Identifying existing needs and emerging issues within the high rise building environment.
- Providing recommendations to the Standards Council as to how NFPA can provide leadership on such issues.
- Working to ensure that NFPA's code and standard development process includes proposals and comments that reflect the latest thinking on high rise building safety issues, high rise emerging technology provisions and other matters which impact those who work, live or have to operate high rise buildings.

#### **Composition**

The committee shall be composed of up to 12 members, with regularly scheduled meetings at least once in each calendar year. The committee also may arrange to have non-scheduled conference calls and/or establish task groups, as necessary, from its membership base to further study specific issues and provide recommendations. Regularly scheduled meetings shall be open to the public. The HRBSAC may also arrange conference calls or meetings to review and address specific code-related reviews, proposals, or comments.

The HRBSAC's inaugural members shall be nominated by the NFPA Standards Council and appointed by the Secretary of the NFPA Standards Council. All members are subject to annual review and reappointment. Absence from more than two regularly scheduled meetings during a two-year period without a medical excuse may result in a committee member being ineligible for re-appointment.

#### *Criteria for Selection*

The HRBSAC shall have an international focus and a membership base that is, to the extent possible, representative and knowledgeable of the practices of many geographic regions of the world.

All members should be nominated using the criteria below:

- Members will demonstrate a knowledge of and commitment to high rise safety issues.

- Members must demonstrate a commitment to the mission and purpose of the HRBSAC, as well as to the mission of NFPA.
- Members should represent a balance of interests including members of the first responder community, consumers, engineering, research and public safety interests as they relate to high rise buildings.

Nominations for new members will be reviewed and committee members officially appointed or re-appointed by the NFPA Standards Council before January 1 of each calendar year.

### *Staffing*

One NFPA staff member will be assigned to the committee as a staff liaison. The staff liaison shall facilitate the committee's work; arrange agendas, keep minutes, process proposals and comments, organize meeting logistics, and provide supporting information.

### **Committee Responsibilities**

- Issue an annual report each October to advise the Standards Council on leadership opportunities for NFPA on issues of importance to the high rise community.
- Provide ongoing suggestions for improving the relevance and quality of NFPA's codes and standards, as well as the association's support services, research, training, and public education initiatives.
- Review NFPA codes and standards, focusing primarily on NFPA 101, *Life Safety Code*<sup>™</sup> and NFPA 5000®, *Building Construction and Safety Code*®, to provide input regarding the high rise community.
- Review and evaluate high rise-related suggestions submitted by other individuals and groups.
- Task groups may be formed, based on the vote of the HRBSAC, to take up any specific, time-intensive efforts. Task groups may hold bi-monthly meetings via conference call, and may call upon the assistance of the NFPA staff liaison when needed.
- Task groups' recommendations and/or proposals will be submitted to the chairperson of the HRBSAC in written form for discussion by the full committee. The committee may then discuss, amend, and vote on the task groups' findings before they are published as official HRBSAC findings or recommendations.
- Potential items for consideration may be placed on the next HRBSAC's meeting agenda by a majority vote of any duly designated task group, or by majority vote of HRBSAC members in attendance at the most recent HRBSAC meeting or conference call. Any individual HRBSAC member may propose items for consideration, and any individual HRBSAC member may propose to table consideration of such items. If those proposals receive a second, they may be voted on by the HRBSAC members in attendance.
- Review, evaluate and be prepared to introduce recommendations from the NIST *Federal Building and Fire Investigation of the WTC* disaster into the NFPA codes and standards process or other NFPA program areas as appropriate.
- Subjects for consideration by the HRBSAC, include but are not limited to the items shown in [Charter Attachment A](#). (see P. 4)

## Operating Procedures

- The chairperson will recommend meeting locations and dates, with input from all committee members. NFPA's staff liaison shall make the final determination on a meeting location and a hotel selection.
- The chairperson may attend NFPA Technical Committee meetings as needed, should they wish to lend their voice to a proposal or comment generated by the HRBSAC.
- The chairperson shall appoint members of the task groups from the members of the HRBSAC.
- The HRBSAC shall operate under parliamentary procedure as set forth in Robert's Rules of Order.
- A quorum of the full HRBSAC shall consist of seven-a majority of members. If a quorum does not exist when the committee is fully constituted, then no final actions shall take place and any recommendation shall not be considered formal unless confirmed by a letter ballot.
- Voting at the meeting shall be by a majority vote of the voting members present.
- All formal recommendations and actions of the committee are to be confirmed by letter ballot.
- Actions and recommendations to be confirmed by a letter ballot require a 2/3-majority vote.
- The staff liaison shall maintain a record of all activities conducted by the committee, along with a roster of committee members.
- On 30 September of each year, the chairperson shall file a report to the NFPA Standards Council highlighting the major activities of the committee including:
  - Issues engaged, resolved or unresolved.
  - Code-related proposals and comments and their status.
  - Recommendations for NFPA action and next steps.

### *Reimbursement*

NFPA will reimburse committee members for expenses incurred in modest business travel, including airfare or mileage (at a rate determined by NFPA), meals, and hotel accommodations. In order to be reimbursed, such arrangements must be made through Colpitts Travel, NFPA's official travel agent. Incidental expenses, such as movies, laundry, and rental cars are not reimbursable.

In certain cases, an extra night's stay will be reimbursed if a Saturday stay-over airfare rate is less expensive. However, all of those reservations must be coordinated in advance through Colpitts Travel and receive the approval of the staff liaison.

All receipts and a written report of travel expenses shall be submitted to the staff liaison on the appropriate reimbursement form within 30 days of the completion of travel.

CHARTER ATTACHMENT A  
HRBSAC TOPICAL AREAS

Subjects of Interest to Be Addressed by the Advisory Committee: The advisory committee ~~should initially address~~ intends to consider the following subjects.

The list is presented alphabetically and not otherwise rank ordered.

1. At-risk Populations
  - a. Disabled occupants
  - b. Very young occupants
  - c. Elderly occupants
  - d. Accessibility issues
  - ~~a.e.~~ Design features
  - ~~b.f.~~ Procedures
  
2. Building Categories of high-rise buildings (height / number of stories)
  - a. Height
  - b. Number of Stories
  - c. Super/mega high-rise concept
  - d. Existing buildings

~~Collapse-Collapse /~~

~~3.Command post location and set-ups~~

- ~~3. Disaster management at large scale events~~Egress devices
  - a. Secondary egress and escape devices (chutes, controlled descent devices)
  - b. Smoke masks / self-contained breathing apparatus and kits
  - c. Stair descent devices

4. Elevators
  - a. Protection and use of lobbies
  - b. Elevator use by emergency responders
  - ~~b.~~ Elevator use  
By emergency responders
  - ~~b.c.~~ Elevator use for egress ~~b~~By building occupants

~~10.Emergency and stand-by power~~

~~4.Extreme Events~~

- ~~a.~~ Goals / objectives
- ~~b.~~ Related scoping

~~5.Fire department communications~~

~~13.Fire department procedures / protocols~~

5. Fire-resistance ratings /
  - a. Reductions for sprinkler protection

~~6.Fire-resistance ratings / fire test standards~~

- ~~b.~~ Fire test standards and ratings
- ~~a.c.~~ Traditional time-temperature curve (NFPA 251 / ASTM E 119)

- b.d. Ultra-fast fire curve (as used in petroleum industry – ASTM E 1529)
- e. Consideration of design fires

16.6. Evacuation /Relocation strategies and Procedures

- a. Evacuation procedures
- b.a. Role of Fire safety directors
- e.b. Training for occupants
- c. Evacuation drills
- d. Egress process/management under various emergency conditions
- e. Staged evacuation/relocation
- f. Total evacuation
- g. Horizontal exit concept
- h. Refuge floors (a.k.a. panic floors)
- i. Notification and communication with building occupants
- j. People movement studies
- k. Decision making of occupants under emergency conditions
- l. Relocation to upper floors
- m. Occupant's situational awareness

8. Refuge floors (a.k.a. panic floors)

18. SCBA on site air replenishment systems

19.7. Security / special security issues

- a. Placement of turnstiles

20.8. Stairs / exit stairs

- a. Width
- a.b. Location / remoteness
- b.c. Design / protection against external events / impact resistance
- d. Photo luminescent exit signage
- e. Transfer corridors between stairs
- f. Smokeproof towers
- g. Discharge onto public ways
- h. Discharge through lobbies
- i. Other design features

11. Stairs / exit stair width

12. Water supplies / redundancy for sprinkler and standpipe systems

9. Design Process

- a. Design professional in charge
- b. Inter-professional relationships (contractors)
- c. Code jurisdictions
- d. Incentives to go beyond minimum building code requirements
- e. Urban and site design context issues
- f. Ground level considerations
- g. Impact of adjacent properties
- h. Multi-building interaction

- i. Design documentation / information to be documented
- j. Retention of records
- k. Information to be documented
- l. Retrofit schedules/ordinances
- m. Life safety evaluations (similar to NFPA 101 requirements for Assembly Occupancies)
- n. Performance-based design

#### 10. Building Construction/Collapse

- a. Blast and fire containment
- b. Double façade construction
- c. Collapse detection
- d. Structural failure warnings
- e. Progressive collapse

#### 11. Building Systems

- a. Water supplies / redundancy for sprinkler and standpipe systems
- b. HVAC and smoke management / movement of smoke
- c. SCBA on site air replenishment systems
- d. Emergency and stand-by power
- e. Hard wired fire fighter communication equipment
- f. Radio equipment for fire fighter use
- g. Detection/alarm/notification

#### 12. Identification of Risk / Hazard / Threats / Level of Safety

- a. Single points of failure
- b. Quantification of Risk/Hazard/Threat
- c. Redundancy versus defend in depth (compartmentation versus sprinkler systems)
- d. Consideration of extreme events / normal design events
- e. Identification/quantification of goals / objectives
- f. Cost effective solutions
- g. Ensure solutions address the specified hazard

#### 13. First Responder / Fire Fighter Issues

- a. Incident operations / procedures / protocols
- b. Fire ground accountability
- c. Resident population
- d. Communications among fire fighters, first responders, building occupants, general public, 911 operators (radio & hard wired)
- e. Communication equipment
- f. Communication protocols
- g. Command post location and set-ups
- h. Protection of command centers
- i. Disaster management at large scale events
- j. Back-up of command center information
- k. Portability/mobility of command center equipment
- l. Building information card



- m. Pre-incident planning
- n. Critical / immediate decisions about building evacuation
- o. Deployment of equipment, i.e. defibrillators

14. On going Building Operations

- a. Building inspections
- b. Annual reviews
- c. Emergency action plans (EAP's)
- d. Assess knowledge base of building occupants re. safety

15. Means to implement recommendations

- a. How high rise proposals are addressed and by what TC
- b. Identify research topics
- c. NIST study
- d. Development of code changes
- e. Establish better technical basis for building regulations

16. Public awareness

- a. Use of mass media during events
- b. Education
- c. Change public perception of evacuation drills

17. Helicopters

- a. Use as a means of rescue
- b. Use as an observation and information gathering tool
- c. Use as a means of lighting

18. Consideration of accessory building uses

- a. Parking structures
- b. Flammable liquids storage
- c. Loading docks
- d. Transportation centers – rail/subway stations /bus depots

# **Agenda Attachment B**

**High-Rise Building Safety Advisory Committee  
(HRB-SAC)**

**Key Dates**

<b>April 5, 2005</b>	Release of NIST-WTC reports on projects 1, 7 and 8
<b>June 3, 2005</b>	Proposed release for remaining NIST projects
<b>June 8, 2005</b>	NIST staff presentation at NFPA WSCE; meeting with NFPA staff and TCC chairs – Las Vegas
<b>June 2005</b>	House Science Committee hearing – exact date to-be-determined
<b>June 23, 2005</b>	Proposed release of NIST-WTC executive summary report
<b>July 12-13, 2005</b>	High-Rise Building Safety Advisory Committee meeting with NIST staff – Gaithersburg, Maryland
<b>July 26, 2005</b>	NFPA staff briefing for Standards Council – Boston
<b>August 3, 2005</b>	Proposed deadline for submission of comments to NIST on WTC report
<b>Sept. 12-14, 2005</b>	NIST public meeting – Gaithersburg, Maryland NFPA representation: staff; Building & Life Safety Code TCC Chairs; IFMA, Fire Service, Metro Chiefs and Public Education Section Chairs; Disability Access Review and Advisory Committee
<b>Oct. 17-19, 2005</b>	Council on Tall Buildings & Urban Habitat Conference – New York
<b>Oct. 20-21, 2005</b>	High-Rise Building Safety Advisory Committee meeting & NFPA High-Rise Building Safety Forum (agenda setting meeting with TC chairs) – New York
<b>Oct. 28, 2005</b>	NFPA staff presentation at National Council of Structural Engineers Association Conference – Kansas City
<b>Nov. 2005- Mar 2006</b>	Meeting(s) of NFPA 101/5000 and other appropriate technical committees as needed to implement code-related recommendations

**Mar 22-23, 2006** High Rise Safety Advisory Committee meeting (w/ NFPA's Standards Council) - Tampa