

Federal Fire Working Group Meeting
Federal Emergency Management Agency
United States Fire Administration
Hosted by National Institute of Standards and Technology (NIST)
November 8, 2010

ATTENDEES

Tim Merinar
William Shields
Chuck Marsh
Nelson Bryner
Dr. Anthony Hamins
Carl Glover
Ricky Brockman
Josh Elvove
Laura Doyle
Michael Pritchard

ORGANIZATIONS

NIOSH
DNFSB
DNFSB
NIST
NIST
NAVY
NAVY
GSA
GSA
USMC

CONFERENCE CALL PARTICIPANTS

Gordon Sachs, USDA
Vince Mazzier, DOI
Jim Bisker, DOE
Rick Khanna, CPSC

USFA ATTENDEES

Glenn A. Gaines
Alex Furr
Sandra Facinoli
Rebecca A. Ryan
Elsie Davis
William Troup

Acting Administrator, USFA
Director, National Fire Programs Division (NFPD)
Chief, Prevention & Information Branch, NFPD
Fire Program Specialist, NFPD
Special Asst., Office of the Deputy Administrator
Fire Program Specialist, NFPD

PRESENTATIONS:

Dr. Anthony Hamins, NIST
Tim Merinar, NIOSH
Williams Shields, DNFSB
William Troup, USFA

**Glenn Gaines, Acting Administrator
U. S. Fire Administration**

Glenn Gaines, Acting U.S. Fire Administrator, opened the meeting by welcoming the group and thanking the NIST staff for hosting the meeting. He then highlighted 5 areas which present challenges the U.S. Fire Administration should address:

1. USFA role: we must clarify our core responsibilities to our constituents and make every effort to provide assistance.
2. environment: we must continue to change to meet the challenges of the environment in which we work
3. alternative fuels: electric cars (biofuels), hydrogen, fuel cells, power cells are all emerging areas which the USFA needs to address. Photovoltaic cells present new challenges to the public, as well as firefighters, due to the use of many hazardous chemicals.
4. terrorism: we need to assist our local firefighters with the kind of threats they would probably face
5. fire growth patterns in residential structures: 80 million baby boomers present new challenges

**Dr. Anthony Hamins, Chief, Fire Research Division
National Institute of Standards and Technology (NIST)**
Presentation: *NIST Fire Protection Goal*

Dr. Hamins told the group that NIST had recently undergone a reorganization which has made them more mission focused. The Building and Fire Research Lab and the Manufacturing Labs have now combined and a \$125 million addition to the Building and Fire Lab is underway. Ground breaking is scheduled for December and the estimated completion date is in one year. In addition, 85 research projects are underway; ½ funded internally; and ½ funded externally.

Some areas where NIST is involved include: Reduced Materials Flammability; Reduced Risk of Fire Hazard in Buildings; Reduced Risk of Fire Spread in Wildland Urban Interface communities (Nelson Bryner is working on standards and code issues in this area); Advanced Fire Service Technologies to include performance metrics/practices for critical fire fighter equipment (thermal imagers, hose stream, ventilation) and personal protective equipment gear; and, NIST large-scale fire research laboratory.

**Tim Merinar, Safety Engineer
National Institute for Occupational Safety and Health (NIOSH)**
Presentation: *NIOSH Fire Fighter Fatality Investigation and Prevention Program (FFFIPP)*

Mr. Merinar provided an explanation of the purpose and work of NIOSH. It is a non-regulatory agency which is part of the Centers for Disease Control and Prevention and it has as its goal to prevent firefighter fatalities. The objectives used to meet this goal include:

- conducting independent investigations of firefighter line of duty deaths
- identifying the contributing factors that directly lead to these fatalities and injuries
- developing recommendations for preventing future fatalities and injuries
- disseminating investigation findings to the fire service

Information is disseminated through their individual investigation reports, NIOSH Alerts, Workplace Solutions, Safety Advisories and other NIOSH publications, along with presentations at numerous fire service conventions and interaction with stakeholders.

**William Shields, Senior Counsel for Nuclear Engineering
Defense Nuclear Facilities Safety Board (DNFSB)**

Presentation: *Reliability of Municipal Water Supplies*

Mr. Shields researched the following published literature on methods to analyze the reliability of underground piping systems and failure modes and rates in existing municipal water supply systems:

- Doleac, Lackey & Bratton
- GAO Report of 1980
- American Water Works Association
- Walski & Pellicia
- Kelly O'Day
- Lawrence Livermore National Laboratory, 1986
- Hasegawa & Lambert
- Compendium of Papers: Larry Mays, Ed., 1989 (Task Committee on Risk and Reliability Analysis of Water Distribution Systems)
- Ahammed & Melchers, "reliability of Underground Pipelines Subject to Corrosion," *Journal of Transportation Engineering*, Nov/Dec 1994
- Rajani & Makar, "A Methodology to Estimate Remaining Service Life of Grey Cast Iron Water Mains," *Canadian Journal of Civil Engineering*, December 2000
- Kleiner & Rajani, "Comprehensive Review of Structural Deterioration of Water Mains: Physical Models," *Urban Water*, October 2001
- Kleiner & Rajani, "Comprehensive Review of Structural Deterioration of Water Mains: Statistical Models," *Urban Water*, October 2001
- Wood & Lence, "Using Water Main Break Data to Improve Asset Management for Small and Medium Utilities: District of Maple Ridge, B.C.," *Journal of Infrastructure Systems*, June 2009
- Larry Mays, Ed., "Urban Water Supply Handbook, McGraw-Hill, 2002"
- Larry Mays, Kevin Lansey, & Y.K. Tung, Chapter 10: "Reliability and Availability Analysis of Water Distribution Systems,"
- Robert Zalosh, "Industrial Fire Protection Engineering," Wiley 2003; works an informative example: loss of water main during 1965 Cambridge Warehouse Fire
- Literature Findings – Empirical

It was stressed that the GAO report of 1980 pointed out that age and failure rate may not be directly linked: some old systems fail rarely, and some new systems fail frequently.

Bill Troup: Fire Program Specialist
U.S. Fire Administration/National Fire Data Center
Presentation: *USFA Research Update*

Mr. Troup highlighted many of USFA's partners in various projects; they include: NIST, CPSC, NIOSH, DOT, DOJ, National Laboratories, Fire Service Organizations and many State Colleges/Universities, i.e., University of Maryland, Arkansas, Michigan, State of North Carolina, etc.

Bill is a key player in obtaining funds from our partners for applied research programs for firefighter health & safety. The collaborations have produced the following reports:

1. *Firefighter & Emergency Responder Health & Wellness*
2. *Emergency Vehicles Safety*
3. *Roadway Safety*
4. *Firefighter Operational Safety*
5. *Respiratory Diseases and the Fire Service*
6. *Formal Epidemiological Study with Medical Oversight*
7. *Emerging Health and Safety Issues in the Volunteer Fire Service*
8. *Alive on Arrival*
9. *Safe Operation of Fire Tankers*
10. *Best Practices for Emergency Vehicle and Roadway Operations Safety in the Emergency Services*
11. *Emergency Warning Lighting*
12. *Emergency Vehicle Visibility and Conspicuity* and many more which you will see on Bill's slide presentation.

USFA works with Federal partners and other public and private sector organizations to publish information papers/documents to save lives, prevent injuries and preserve property. Some of these documents include:

1. Roadway Operations Safety
2. Alive on Arrival – Tips for Safe Emergency Vehicle Operations
3. Firefighter Health and Wellness Initiatives
4. Emergency Vehicles Safety Initiatives
5. USFA Fire Research Program

All the above information and more can be found on the USFA website:

<http://www.usfa.dhs.gov/fireservice/research/index.shtm>.

Round Robin

1. A question was raised by Josh Elvove, GSA, regarding codes and standards. How should these efforts be coordinated among Federal agencies; he is not looking for oversight, but rather an acceptable way of using codes. Per Bill Troup, OMB circular

119 encourages government to use commercially available standards rather than developing their own.

2. Chuck Marsh, DOE, also indicated this same discussion is taking place at DOE regarding codes; they plan to adopt IBC and use as basis for all buildings.

Glenn Gaines agreed that consistency of codes across Federal agencies is important and suggested that USFA could consider some approaches for discussion at a future meeting.

3. Rick Khanna, CPSC: addressed the issue of advanced smoke alarms. An abstract was sent to NFPA by Oak Ridge for the March 2011 cycle. He talked about smoke alarm technology; sensor technology; detection and suppression technology.
4. Josh Elvove, GSA: related the plane crash incident in Austin, TX. He stated that although there was serious damage to structures, the residential sprinklers worked quite well and even indicated that upon inspection a piece of candy (Reese's pieces) was still intact and had not melted!

Deputy Administrator Gaines closed the meeting by once again thanking those who attended or participated by phone and to NIST for their gracious hosting of the meeting.