

OCTOBER 10-11, 2007 • FAIRFAX, VIRGINIA

Three glass bottles containing hazardous materials are arranged in a row. The leftmost bottle is filled with a green liquid and contains several small, dark, round objects. The middle bottle is filled with a yellow liquid. The rightmost bottle is filled with a red liquid. The bottles are set against a dark background with a red and purple glow.

2007 HAZARDOUS MATERIALS Roundtable

FINAL REPORT



2007 HAZARDOUS MATERIALS Roundtable

October 10-11, 2007

Final Report

Sponsored by the International Association of Fire Chiefs in cooperation with the U.S. Fire Administration

Alternative Fuels.....	2
Consequence Planning, Management and Response.....	3
Hazardous Materials Operations and Efficiency.....	4
Hazardous Materials Identification Methods.....	6
Training.....	6
Secure Information.....	8
Technology.....	8
Emerging Issues	9
Roundtable Participants	11

The U.S. Fire Administration supports the Hazardous Materials Roundtable through a grant with the International Association of Fire Chiefs on fire service hazardous materials preparedness and response. However, the positions developed by the Roundtable do not necessarily reflect the views of the U.S. Fire Administration.

2007 Hazardous Materials Roundtable Report

Hazardous materials (hazmat) mitigation and control have been in the forefront of public safety planning since September 11, 2001. The need for national standards and practices, along with a proactive response, has never been stronger. On October 10 and 11, 2007, the International Association of Fire Chiefs' (IAFC) Hazardous Materials Committee convened a Hazardous Materials Roundtable with 30 of the nation's leading authorities on hazardous materials response. The purpose was to review the current state of the hazardous materials response community and recommend future strategies.

The following report establishes the direction for action and discussion by the hazardous materials community.

1. Alternative Fuels

With a focus on the development and production of alternative fuels, often with government investment/funding and production mandates, the public safety/emergency response impact is often overlooked or not considered until the materials are in production.

Emergency response community concerns surrounding the growth of alternative fuels include production, transportation, storage, and placarding issues. There is a need to develop a standard methodology for information dissemination and training program delivery to the fire service community.

The emergency services are constantly trying to catch up with regard to operational readiness (training, PPE, response equipment, etc.) to deal with emergencies in fixed facilities or transportation. A lack of science based information about extinguishing agents or methods on how to deal with emergencies involving these emerging products is often a serious gap. Some alternative fuels may even create issues for treating medical emergencies involving these products and their production. As we move forward, this research must be part of any product development. Examples of alternative fuels include hydrogen, liquefied natural gas, ethanol, and biodiesel. The Roundtable participants recommended the following items.

- a. The newly created IAFC/Department of Transportation (DOT) National Hazmat Fusion Center can play a role in identifying trends and sharing this information with emergency responders.
- b. In addition to the fire service, other stakeholders include law enforcement, non-fire first responders, government partners, industry, and federal and state agencies. Standard training programs (both classroom delivery and web-based) should be developed so that all disciplines receive the latest planning and response information regarding these new fuels as they are developed. The planned National Academies' Transportation Research Board's project to assess hazmat capabilities throughout the United States (U.S.) will be critical to ensuring that all hazardous materials teams receive training and informational updates in a timely manner. To avoid duplication of effort, the National Hazmat Fusion Center should determine which other organizations/agencies may already have initiatives in these areas. This will ensure that standardized training is developed and that accurate

and uniform planning and response information is available to the emergency response community.

- c. The Ethanol Emergency Response Coalition (EERC) is a great example of how key stakeholders came together to address emergency response concerns with ethanol. Similar efforts around other alternative fuels such as hydrogen and biodiesel is recommended.
- d. The producers of these products should continue to display responsible care by assisting with funding and technical assistance in emergency response information development.
- e. Interested members of the Roundtable should participate as members of these committees.
- f. The Roundtable participants recommend that a research and development component for testing emerging technologies and fuels be created and adequately funded, perhaps within one of the following federal agencies—DOT, Department of Homeland Security (DHS), National Institute of Standards and Technology (NIST), or the National Personal Protective Technology Laboratory (NPPITL). Information needed would include chemical, physical, and health properties of these new fuels. This information, along with proper response information, will then be developed and provided to federal, state, and local organizations and agencies.

2. Consequence Planning, Management and Response

The 2007 Hazardous Materials Roundtable participants recognize that the current response to hazardous materials incidents affords the opportunity for improvement and urges the DHS and the DOT to continue support for enhancement at all levels. The Roundtable participants support the development of a national strategy for consequence planning, management, mitigation, and response to the many hazards that face America today. As a path forward for meeting the multi-faceted challenges of an all hazards approach, clear-cut lines of authority and responsibility must be established well in advance of an event. The Roundtable participants recommend the following:

- a. That DHS publicly recognize an “all hazards” approach to planning and preparedness, and appropriately support those activities. Currently DHS, to a large extent, has been primarily focused on areas of prevention. Even with aggressive prevention programs, history has shown that events still occur. While prevention measures such as intervention and interdiction should continue as law enforcement responsibilities, consequence management and response should be delegated to the fire service and must be simultaneously supported, developed, and strongly encouraged by DHS.
- b. That local and state emergency management officials recognize that hazardous materials/weapons of mass destruction (WMD) incidents in their jurisdiction receive the specific assessment and planning that may be lost in the all hazard approach.

- c. That local emergency management officials continue to include fire service personnel in community assessments and planning.
- d. That assessments and response plans make their way to first responders for practical use during hazmat/WMD events in the local jurisdiction.
- e. That each authority having jurisdiction must complete a risk-based community assessment and train their personnel in all mission specific competencies that apply, based on their response plan.

3. Hazardous Materials Operations and Efficiency

The Roundtable participants are confident that the national response to hazardous incidents can be enhanced. The following are principles that enable all response partners to prepare for and provide a unified response to disasters and emergencies—from the smallest incident to the largest catastrophe.

The group recommends the following:

- a. Mutual Aid Agreements and Regional Response Plans and Operating Procedures
Effective mutual aid agreements and multi-agency response plans must be implemented throughout the country and include military and federal installation hazmat teams, as well as private hazmat response teams. Mutual aid and regional response planners must be aware of the impact of lockdown limits imposed on military bases during crisis conditions such as the DHS Threat Level–Red. During these periods, military and federal hazmat teams may be limited to base or installation response only. These mutual aid agreements and multi-agency response plans must be exercised routinely to ensure coordination during a major event.

The Roundtable participants strongly support the IAFC’s Intrastate Mutual Aid System (IMAS) and Emergency Management Committee (EMC) initiatives to improve state and national mutual aid in the fire and emergency services. Information on model agreements and legislation can be found at the following links:

<http://www.fema.gov/emergency/nims/rm/ma.shtm>

<http://www.iafc.org/mutualaid>

- b. Situational Assessment
First responders must be able to assess the situation (chemical, biological, explosive, radiation, and dirty bombs) and use proper judgment upon arrival at any incident. If the incident does not seem like one the department can handle with available resources, other agencies should be contacted for assistance. A community risk assessment, done in collaboration with other agencies at the jurisdictional level, can be helpful in increasing situational awareness. This assessment would define the capabilities, limitations, and mission of each jurisdiction during a hazmat/WMD incident in their community.

Hazmat response has historically been procedure-based. This means that the actions of responders were tightly driven by Standard Operating Procedures or Standard Operating Guidelines. Risk-based response is the evolution of procedure-based response. Risk-based decision making is a systematic process by which responders analyze a problem involving a hazmat/WMD incident, assess the hazards, evaluate the risk, and determine appropriate response actions based on the facts, science, and circumstances of the incident. The risk-based response model looks at the threat, vulnerabilities, consequences, and likelihood of occurrence when making a risk-based decision. The use of the risk based response model will lead to a safer and more competent response. Another prerequisite for risk-based response is experience. In the absence of experience, procedure-based response provides a prescribed response hierarchy. The Roundtable participants recommend procedure-based response as a base level, yet hazmat/WMD responders should strive for the knowledge, skills, and experience necessary to implement a risk-based response. Sharing best practices, such as those found through the National Hazmat Fusion Center and the Lessons Learned Information Sharing System (www.llis.gov), will help develop the experience to implement a risk-based response.

The Roundtable participants recommend that the National Fire Protection Association (NFPA) 472 committee continues to develop hazmat/WMD competencies using the risk based response model. The Roundtable participants recommend that all hazmat/WMD curricula developed for the operations and technician levels be based on the risk-based response model.

The Roundtable participants continue to recommend that a procedure-based response matrix be used to improve first responder hazmat operational level risk assessment. A credible risk assessment remains a crucial first step in this process. A number of models can assist first responders in risk assessment. One such model is a provision of NFPA 472: Analyze, Plan, Implement and Evaluate (A-P-I-E).

Fire departments should have an Emergency Response Plan and Standard Operating Procedures or Standard Operating Guidelines for notification, deployment, mitigation, and demobilization. The primary goal, until adequate and properly trained personnel are on scene, is to protect the public and first responders.

The DHS Authorized Equipment List (AEL) and Standardized Equipment List (SEL) for federal, state, and local implementation and use for hazardous materials, WMD, and chemical/biological and medical mass casualty responses should be required. Units should use the InterAgency Board (IAB) SEL as the threshold template for equipment technologies. Using this list will ensure interoperability between units whether the equipment is originating from a federal or a state grant. The AEL and SEL can be found at www.iab.gov and www.rkb.mipt.org.

4. Hazardous Materials Identification Methods

The Roundtable participants do not support security proposals to remove placards from rail tank cars and other areas until an improved identification system is not only in place, but has demonstrated functionality.

While understanding the concern for terrorism and security, the emergency responders currently have a great need for this initial information. These marking systems are used daily and are a high priority for the safety of emergency responders.

A thorough review of alternative options is needed before placards are removed, with strong oversight from the hazardous materials community. New technologies must be pursued to give emergency responders at the scene real time data on content and response. The Roundtable participants suggest looking further into emerging technologies (such as 3-D bar coding, UPC, and other technology) and systems developed by other disciplines. For example, the trucking industry has been successful in tracking over-the-road shipments and engaging a master shut-off switch if a truck deviates from its designated route.

Current regulations must be built upon to improve information on hazardous materials shipments. Appropriate federal agencies must promulgate regulations that require all intermodal transport containers to be placarded, with appropriate commodity information accompanying the shipment (required for all other modes of shipments for similar materials) and immediately available to emergency responders. This includes containers loaded in the U.S. as well as those entering the U.S. for transit from one port to another while using transport systems as a land bridge with no local delivery intended.

5. Training

a. Hazardous Materials Training

The Roundtable participants support training all emergency responders, technicians, and specialists to the NFPA 472 standard. NFPA 472 applies to all emergency responders who respond to the emergency phase of a hazmat/WMD incident, regardless of the individuals' response discipline. The Roundtable participants further recommend that, at a minimum, all emergency response organizations recognize and accept that to have a safe and competent response to any incident where hazmat/WMD are involved, they must train their personnel to the Core Competencies for Operations Level responders level described in the NFPA 472 document, "Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents." Each authority having jurisdiction must complete a risk-based community assessment and train personnel in all mission specific competencies that apply, based on their response plan. Any level less than the Core Operations level is not safe, and will place personnel and the public at risk.

Since reports of misinformation about the standard are circulating among emergency responders, the participants recommend that a coordinated message from the major fire service organizations be distributed to the fire service, outlining the key components of the

standard and identifying/clarifying the primary elements causing confusion. Similar outreach should be initiated by other emergency responder associations to their memberships.

The Roundtable participants recommend that the IAFC Board of Directors adopt a resolution to encourage its members, as well as all fire departments, in the adoption of the NFPA 472 Standard (5th edition, 2008).

The Roundtable participants recommend the creation of diverse, non-traditional training and delivery systems (not a one-size-fits-all approach) to enhance the training and educational opportunities for stakeholders. All hazmat/WMD training programs should adhere to the discipline-neutral NFPA 472 compliant curricula for state and local agency delivery.

The Roundtable participants recommend that to improve and standardize hazmat/WMD response, a non-fire service, specific credentialing system such as the International Fire Service Accreditation Congress/Pro Board for Hazmat Response be investigated. A system similar to the national registry for Emergency Medical Services (EMS) could serve as a model. The Roundtable additionally recommends that federal compliance be required through control of grant funds.

The Roundtable participants also recommend that the National Incident Management System (NIMS) Integration Center (NIC) work with stakeholders on development of credentialing processes and typing of resources for standardization clarity (work through IAFC EMC).

b. WMD Training

Currently, WMD training is predicated on funding availability. To ensure that this training is delivered to all personnel, the Roundtable participants recommend that:

- i. Fire departments consider adding WMD training to the recruit program to minimize overtime costs.
- ii. Fire departments consider the train-the-trainer concept, using officers as trainers.
- iii. OSHA add language requiring NFPA 472 compliance in applicable OSHA regulations currently under review in the *Federal Register* since WMD training is included as a competency in NFPA 472.
- iv. Federal agencies link WMD training to grant funding and NIMS credentialing, while encouraging a multi-disciplinary approach.

c. Hazardous Materials/WMD sampling technology/equipment

As technology continues to improve and become readily available for field instrumentation used in response testing, the Roundtable participants recognize the need for trained, experienced responders (i.e., operations level mission specific air monitoring) who can interpret the data being collected. While this has increased capabilities for first responders, it has also brought additional challenges. The Roundtable participants recommend that as these new technologies continue to develop, training on their use, limitations, interpretation of data, and maintenance should be developed by the monitor industry to ensure the user maintain a level of competency. This training should be developed in cooperation with the

monitoring industry and academic organizations such as the National Fire Academy for standardization and local delivery through traditional methods or web-based technology.

The Roundtable participants strongly support NFPA standard 472 “Technician” or “Specialist Employee” competencies as a minimum standard of training for the interpretation of field data. This information should be used along with current resource typing criteria to standardize responder knowledge and capability.

6. Secure Information

There still are occasional problems with law enforcement’s interpretation of sharing information, and this appears to be a procedural and education issue. The failure to include fire service representation on various workgroups will be mitigated by the passage of the “Implementing Recommendations of the 9/11 Commission Act of 2007 (P.L. 110-53),” which states that any fusion center receiving federal funding is required to have fire service representation.

The Roundtable participants recommend that departments utilize the IAFC *Terrorism Response: A Checklist and Guide for Fire Chiefs*, to assist in assessing their abilities to prevent, prepare, respond, and recover from a terrorist event.

7. Technology

The Roundtable participants recommend continued support of technology transfer from the Department of Defense (DoD) to the first responder community. The Roundtable participants recommend that a hazardous materials responder who is a member of the IAFC or other fire service organization participate on any existing technology transfer committees as this would assist in the exploration of what technology can be applied from the DoD to the civilian fire service.

EMERGING ISSUES

The hazardous materials community must work to manage the change process which focuses on emergency response at the policy level, not only with respect to alternative fuels, but also for any major regulatory changes that have health and safety impacts.

To that end, the hazardous materials community must continually examine events for new trends and issues and be ready to address them. The following emerging issues should be monitored:

1. Chemical Industry Support of Hazmat Response

The Roundtable participants recommend that the National Hazmat Fusion Center encourage and promote industry partnerships and joint meetings of the hazardous materials response community and chemical industry representatives so they can begin working together during the concept phase of product development.

As new products are released, the chemical industry needs to provide information and funding to develop innovative training and response materials to accompany these products.

2. Vaccinations

The Roundtable participants recommend that as vaccines are being developed by the DHS, U.S. Department of Health and Human Services, Food and Drug Administration, and Centers for Disease Control, first responders should be involved in this process. This will assist in determining if the vaccine is appropriate for the level of risk to exposure by clearly documenting the positive and negative aspects of the vaccine and any effects on the responder.

3. Global Harmonization

With respect to international transportation regulations, the U.S. hazardous materials response community is currently not well represented in the international arena. There is a need to learn the issues and become more formally engaged through participation in the International Technical Committee for the Prevention and Extinction of Fire (CTIF). The Roundtable participants recommend that the DOT provide funding to support the participation of IAFC members and those of other fire service organizations in the U.S. delegation to the United Nations in the arena of international hazmat regulations. International updates may then be widely distributed by the National Hazmat Fusion Center to all registered hazmat teams.

4. Public Education

There is a need for public awareness and education with respect to decontamination in the event of a disaster/catastrophic event. Local agencies should focus on publicizing existing resources, such as Community Emergency Response Teams, Citizen Corps, Fire Corps, etc. The Roundtable participants recommend that DHS/FEMA consider developing updated

citizen preparedness and educational materials for public service announcements and use by local fire departments as part of their public education programs.

5. Research/Data Dissemination

A significant amount of research and data will be provided to the fire/EMS service by the newly created IAFC/DOT National Hazmat Fusion Center. The IAFC is encouraged to create and/or enhance its relationships with DHS Science & Technology, DoD Technical Support Working Group, and the Domestic Nuclear Detection Office, as these agencies may be able to fund hazardous materials programs, projects, and other related initiatives.

The Roundtable participants also recommend that the IAFC and other fire service organizations seek funding from these agencies and private industry to explore new technologies that enhance the safety of responders.

ROUNDTABLE PARTICIPANTS

IAFC Hazardous Materials Committee

Richard Brooks	Director of Emergency Services, Cecil County (MD)
Timothy Butters	Assistant Chief, City of Fairfax (VA) Fire Department
Gene Carlson	Training Chief, York County (PA) Hazmat
H.K. "Skip" Carr	Director of Training & Safety, Englishtown (NJ) Fire Department
Chris Hawley	Deputy Senior Project Manager, Computer Services Corporation
John O'Gorman	Chief of Training, Ponderosa (TX) Volunteer Fire Department
James Kelly	Assistant Chief, Bryn Mawr (PA) Fire Company
Robert Royall	Chief, Emergency Operations, Harris County (TX) Fire Marshal's Office
Jack Taylor	Chief, Emporia (KS) Fire Department

Fire/EMS Services

Rick Emery	Emery & Associates
Joseph Gorman	Hazmat/WMD Master Instructor, International Association of Fire Fighters (IAFF); Fairfax County (VA) Fire and Rescue
Robert Ingram	Battalion Chief, Center for Terrorism & Disaster Preparedness, FDNY
Richard Sarudy	Captain, Hazardous Materials Coordinator, Baltimore City (MD) Fire Department
William Spencer-Strong	Chief of Special Operations, Baltimore County (MD) Fire Department
Robert Stephan	Battalion Chief, Montgomery County (MD) Department of Fire-Rescue
Dennis Wood	Battalion Chief, Hazmat Response Team Leader, Prince George's County (MD) Fire/EMS Department

Government Representatives

Geoff Donahue	Division Chief, Maryland Department of the Environment
Stacey Gerard	Assistant Administrator/Chief Safety Officer, Pipeline and Hazardous Materials Safety Administration, DOT
Scott Gorton	Chief, Hazmat Security Branch, Transportation Security Administration
Bill Haskell	Policy & Standards Branch, National Personal Protective Technology Laboratory, National Institute of Occupational Safety & Health

John Hess	Planning and Preparedness Manager, Pipeline and Hazardous Materials Safety Administration, DOT
Bill Lewis	Educational Specialist, United States Fire Administration
Ryan Paquet	Assistant International Standards Coordinator, Pipeline and Hazardous Materials Safety Administration, DOT
Steve Patrick	Operations Coordinator, FBI Hazmat Response Unit
Charles Rogoff	Grants Manager, Hazardous Materials Emergency Preparedness Grant Program, DOT
Glen Rudner	Hazardous Materials Officer, Virginia Department of Emergency Management
Tonya Schreiber	Executive Director, Pipeline and Hazardous Materials Safety Administration, DOT
Wayne Yoder	Training Specialist, Hazmat Program Manager, United States Fire Administration

Industry Representatives

Nancy White	Director, Operations Center, CHEMTREC
-------------	---------------------------------------

IAFC Staff

Mary Beth Michos	Deputy Executive Director
Ken LaSala	Director of Government Relations
Ed Plaughner	Director of National Programs
Vicki Lee	Program Manager
Rynnel Gibbs	Program Assistant
Kennedy Keenan	Program Intern



www.iafc.org

International Association of Fire Chiefs

4025 Fair Ridge Drive, Suite 300

Fairfax, VA 22033-2868

703/273-0911